Appendix A

Administrative
Documents

Appendix A

Subsection One:
PADEP Administrative Order

Pennsylvania Department of Environmental Protection

Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428
December 10, 1999

Southeast Regional Office

610-832-6012
Fax 610-832-6022

CERTIFIED MAIL NO. P 092 246 968

[redacted]
Director of Corporate Administration
Defense Support Logistics
8725 J-Kingsman Road
Fort Belvoir, VA 22060-6221

Re: DSCP

Dear [redacted]

Enclosed is an Order of the Departmen., directed to the Department of the Army, the Defense Logistics Agency, and the Defense Supply Center Philadelphia.

Please feel free to call if you have any questions.

Sincerely,

[redacted]
Regional Director
Southeast Regional Office

Enclosure

cc: Mr. [redacted]
Ms.
Mr.
Ms.
Mr.
Mr.
Mr.
Mr.
Mr.
Re 30 (GJC99)344

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In the Matter of

Defense Logistics Agency,
Department of the Army and
Defense Supply Center Philadelphia
Philadelphia, PA

Subsurface Hydrocarbon Contamination

ORDER

FINDINGS OF FACT

The Commonwealth of Pennsylvania, Department of Environmental Protection ("DEP" or "Department") has found and determined the following Findings of Fact.

A. The Department is the agency with the duty and authority to administer and enforce the Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S. §§ 691.1-691.1001 ("Clean Streams Law"); The Land Recycling and Environmental Remediation Standards Act, Act of May 19, 1996, 35 P.S. § 6026.101 et seq. ("Land Recycling Act"); The Solid Waste Management Act, Act of July 7, 1980 (P.L. 380, No. 97), as amended, 35 P.S. § 6018.101 et seq.; The Storage Tank and Spill Prevention Act, Act of August 7, 1989, P.L. 1989, No. 32, as amended, 35 P.S.§ 6021.101 et seq. ("Tank Act"); Section 1917-A of the Administrative Code of 1929, Act of April 9, 1929, P.L. 177, as amended, 71 P.S. § 510-17 ("Administrative Code") and the rules and regulations promulgated pursuant to these Acts.

B. The Defense Logistics Agency ("DLA") is an agency of the United States Government within the Department of Defense and is the parent agency of the Defense Supply Center Philadelphia ("DSCP"). DSCP was previously known as Defense Personnel Support Center and before that as the Philadelphia Quartermaster's Depot. DSCP was formerly located at a facility with an address of 2800 South 20th Street, Philadelphia, PA, 19145-5099. The former DSCP facility (referred to herein as "DSCP facility") is owned by the Department of the Army ("Army"), which previously operated the DSCP facility. For purposes of these Findings, Conclusions of Law and Order, actions taken by DLA, the Army and DSCP will be attributed to DLA.

C. The DSCP facility is located to the east of the south yard of the Point Breeze Processing Area of the Sunoco, Inc. Philadelphia Refinery ("Point Breeze") and to the north and east of the Schuylkill Expressway. The DSCP facility is separated from Point Breeze by 26th Street, Conrail tracks and the Schuylkill Expressway, each of which runs north to south between DSCP and Point Breeze, with a combined width of approximately 550 feet. The DSCP facility encompasses approximately 86.5 acres.

D. The DSCP facility has been an active military logistics, repair and manufacturing facility from the time of the First World War until recently. During this time period, incident to normal operations, it has stored and consumed petroleum products, including diesel fuels, gasoline and heating oils. Since the 1920's, petroleum products have been stored in underground and above ground tanks located in various places on the DSCP facility. Releases of hydrocarbons have occurred on the DSCP facility property. Underground storage tanks associated with the "28th Street Gas Station" and the "Bash Street Gas Station", both located on the DSCP facility, were reportedly removed and/or replaced due to leakage at some time in the past.

E. The Steen property is located to the north of Hartranft Street, between the southwest corner of DSCP and the east side of Point Breeze. The Steen property is sandwiched between 26th Street to the west and Conrail to the east. Hydrogeological investigation has been performed on the Steen property as part of the effort to locate and characterize the subsurface contamination in the area. There is no significant source of hydrocarbon contamination presently located on the Steen property.

F. The Passyunk Homes complex lies to the south of the DSCP facility. Passyunk Homes consists of World War II-era military housing now owned by the Philadelphia Housing Authority and operated as low-income residential apartments. The existing buildings at Passyunk Homes are cinder block structures with no basements. The residents of Passyunk Homes are largely African Americans with incomes at or below poverty level. There is no significant source of hydrocarbon contamination presently located on the Passyunk Homes property.

G. At present, there is a large quantity, estimated by some to be on the order of one million gallons, of non-aqueous phase liquid (NAPL) hydrocarbon ("the NAPL plume") located 15 to 20 feet below ground surface under the southern portion of the DSCP facility property. The NAPL plume extends across the southern boundary of the DSCP facility, under the Schuylkill Expressway and beneath the northern portion of Passyunk Homes. Apparent plume thickness ranges up to several feet. Additional dissolved phase and soil contamination extends southward to approximately Hartranft Street, across the Steen property and westward to the vicinity of Point Breeze. The northern and eastern extent of the dissolved phase and soil contamination which may be associated with the NAPL plume appears not to extend eastward of Penrose Avenue and 19th Street. In many of the areas noted above, significant hydrocarbon soil contamination is found below the current water table elevation and beneath the NAPL Plume. The NAPL plume and associated subsurface hydrocarbon contamination constitutes "industrial waste" and a "substance ... resulting in pollution" as those terms are used in Sections 301, 307 and 401 of the Clean Streams Law, 35 P.S. §§ 691.301, 691.307 and 691.401.

H. Extensive subsurface investigations performed on behalf of DLA and Sunoco, Inc. and provided to DEP have largely delineated the areal extent of the NAPL plume and hydrocarbon contamination in the vicinity of the DSCP facility and Passyunk Homes.

I. The Packer Avenue sewer, a major combined (storm water and sanitary) sewer, crosses the northern portion of Passyunk Homes, running generally from east to west. The invert level of the Packer Avenue Sewer sits below the groundwater elevation in Passyunk Homes. The Packer Avenue sewer continues westward under Point Breeze, where it becomes known as the Pollock Street sewer, and discharges into the Schuylkill River. Dry weather flows in the Packer

Avenue sewer are intercepted at 26th Street and enter the Schuylkill East Side Intercepting Sewer ("26th Street Interceptor"), which conveys this flow to the Philadelphia Southwest Sewage Treatment Plant. Wet weather flows that exceed the capacity of the 26th Street Interceptor are discharged into the Schuylkill River.

J. The NAPL plume is in contact with the Packer Avenue sewer, and petroleum liquid infiltration into the sewer at various locations under Passyunk Homes has been reported on the both occasions since 1997 when personnel conducted investigations of the interior of the sewer. Tributary sewers, particularly the sewer system draining the southeast portion of DSCP, are in close proximity to the NAPL, and may be subject to additional petroleum vapor infiltration.

K. DEP personnel and others have sensed olfactory evidence and obtained Photo Ionization Detector ("PID") readings confirming the presence of petroleum vapors in the Packer Avenue Sewer and its tributary sewers. Petroleum odors have been detected at sewer structures such as storm drains and manhole covers where vapors from the sewer were not blocked from flowing freely to the atmosphere. A number of homeowners in dwellings served by the Packer Avenue Sewer and its tributary lateral sewers have had sporadic episodes of petroleum odors in their homes.

L. Sunoco installed an air collection and filtration system on the Packer Avenue Sewer in 1997, which has significantly reduced the number of petroleum odor complaints in the area served by the Packer Avenue Sewer. This odor abatement system also serves the 26th Street interceptor sewer and the Shunk Street combined sewer, both of which are in contact with or adjacent to other zones of hydrocarbon contamination located on or near Point Breeze. DLA declined to participate in this abatement effort despite a DEP request that it do so.

M. Sunoco and DLA entered into a Consent Order and Agreement with DEP on September 24, 1996(1996 CO&A), that required them to collectively perform a series of specific tasks. These obligations could be modified, not only by formal amendment to the 1996 CO&A, but through joint decisions that were ratified through 1996 CO&A oversight procedures. All actions taken by Sunoco or DLA under the 1996 CO&A were expressly without prejudice to their rights to seek recovery of the costs thereof from the other.

N. The 1996 CO&A tasks included delineation of the NAPL plume and the area affected by the NAPL plume ("Affected Area"), design of a remedial system for NAPL removal and the performance of a risk assessment intended to determine the residual risk following the removal of free product. Pursuant to the oversight process established by the 1996 CO&A, the scope of the risk assessment was expanded to include an assessment of the existing health risk.

O. The NAPL plume is located on the DSCP facility and properties contiguous to the DSCP facility. The Affected Area is a "site" as that term is defined by 35 P.S. § 6026.101 (Definitions). The Affected Area includes properties which are at risk for exposure to petroleum vapors as a consequence of vapor transport from the NAPL through the Packer Avenue Sewer and its tributary sewer system, as well as properties underlain by NAPL and by dissolved phase petroleum derived from the NAPL.

P. Pursuant to the 1996 CO&A, Sunoco submitted a design for a "Phase I" free product removal system, described in "Engineering Report, Free Product Hydrocarbon Recovery

Operations, Defense Supply Center Philadelphia (DSCP) and the Passyunk Homes Area, Philadelphia, PA, April 24, 1998, prepared by Flour Daniel GTI", which DEP approved. This Phase I system was intended to begin the process of free product removal. It was not submitted as, nor was it approved as anything more than the first step towards removing the existing NAPL. Additional remedial work, including modifications to the Phase I system and/or subsequent phases of design and construction, is likely to be required in order to meet the 1996 CO&A goal of removing as much NAPL as is practicable.

Q. On October 16, 1998, the CO&A was amended to require DLA and Sunoco to jointly fund the construction and operation of a Phase I NAPL plume remediation system. Pursuant to this amendment, Sunoco managed the construction and operation of the Phase I remedial system, with financial contributions from DLA. The October 1998 amendment expired on August 31, 1999.

R. The CO&A was amended for a second time on August 31, 1999. This amendment extended the remediation obligations of the 1998 amendment until October 31, 1999, and assigned the management role for the ongoing risk assessment to Sunoco. DLA and Sun agreed to contribute equally to these efforts, without prejudice to future claims against each other.

S. Interim removal efforts performed by Sunoco and DLA recovered approximately 150,000 gallons of NAPL from beneath the DSCP facility between 1997 and October 1998. The Phase 1 remedial system began operations in March 1999 and to date has recovered in excess of 100,000 gallons of NAPL from beneath the DSCP facility and from beneath Passyunk Homes.

T. The DSCP facility has been selected for closure under the Defense Base Realignment and Closure ("BRAC") process, which was prescribed by the United States Congress in the Defense Authorizations and Base Closure and Realignment Act. 10 U.S.C. § 2687. The facility is presently scheduled for closure in April 2000. At the present time, military operations have ceased at the DSCP facility, except for caretaker functions.

U. The Philadelphia Office of Defense Conversion ("ODC"), a division of the City of Philadelphia Commerce Department, has developed a reuse plan for the DSCP facility. The reuse plan calls for retail and light industrial uses. A portion of the DSCP facility consisting of Building 13, part of Building 9 and surrounding parking areas has been conveyed or is in the process of being conveyed, through a combination of lease and air rights deed, to Brite Star, a manufacturing, warehouse and retail operation.

V. Through the BRAC process, DLA has been conducting investigations and producing decision documents that evaluate the environmental conditions at the base. To date, the DEP's oversight of the NAPL plume remedial project has been parallel to but separate from the BRAC environmental assessment and remediation process.

W. In February 1999, Philadelphia Housing Authority announced its intention to close Passyunk Homes and to relocate the residents elsewhere in Philadelphia. Numerous residents have moved out of Passyunk Homes during 1999 and the vacated apartments have been boarded up.

X. Investigations conducted in the past on behalf of Sunoco and Arco concerning the geology and hydrogeology of the Philadelphia Refinery have revealed the presence of two water-bearing geologic structures contained within unconsolidated sedimentary layers. The deeper water-bearing structure is part of the Potomac-Raritan-Magothy ("PRM") aquifer, which is a source of drinking water in Gloucester County, New Jersey. The uppermost, or shallow aquifer, is a surficial unconfined aquifer, largely consisting of the Cape May Formation and of recent alluvium. The lower, deep aquifer is located in the lower sand unit of the PRM aquifer. A clay unit of the PRM system lies between the shallow and deep aquifers. The bedrock beneath the unconsolidated sediment layers consists of Wissahickon Shist.

Y. Investigations performed on behalf of DLA and Sunoco have shown that the geological structures underlying the DPSC facility and Passyunk Homes are generally similar to those underlying Point Breeze. However, the confining unit between the upper and lower aquifers in this area was only nine feet thick in the northwest corner and the subsurface of the southwestern portion of the DPSC facility contains no such confining clay layer. Where the confining layer is thin or absent, there is the potential for groundwater exchange between the surficial aquifer and the deep aquifer.

Z. The direction and rate of groundwater flow in the area of the DSCP facility and Point Breeze has been largely determined by human activities since the 1920's. Although the current direction of groundwater flow is generally from north to south, major pumping centers at surrounding industrial and military facilities have significantly altered the natural groundwater flow patterns at various times in this century. Two such major pumping centers, one located at the former Publicker Industries site near the Walt Whitman Bridge and the other located at the Philadelphia Naval Ship Yard and Naval Station exerted significant influence over the ground water levels and flow directions during the period between 1920 and 1975. During this time frame, groundwater elevations in the DSCP - Point Breeze area were significantly lowered. Regional groundwater flow directions were sometimes predominately from north to south and at other times were from west to east. Groundwater withdrawals at Point Breeze and elsewhere may have caused local variations in groundwater flow direction during this time frame.

AA. Investigations performed by both DLA and Sunoco in support of a risk assessment have revealed the presence of a silt layer of varying thickness and depth between the petroleum plume and the ground surface throughout most of the Affected Area. This silt layer is breached by the Packer Avenue sewer and by the basement of Building 13 on the DSCP facility.

BB. Soil, groundwater and NAPL samples taken by DLA and Sunoco have revealed the presence of benzene and other materials in the Affected Area. These materials are potentially hazardous to human health.

CC. The NAPL plume consists of a petroleum material, with characteristics of a light naphtha. It contains significant quantities of benzene and has a low flash point. Attempts to characterize the precise nature of the product or products which produced the plume have been inconclusive. The NAPL appears to have similar physical and chemical characteristics across most of its extent, although benzene concentrations within the plume do vary somewhat. Other hydrocarbon contamination by material with lower benzene content exists at some locations within the area of the NAPL plume below the current water table elevation.

DD. The entire NAPL plume, soil contamination and dissolved phase petroleum is located within 2500 feet of the boundaries of the DSCP facility. Only the portion of the Affected Area defined by the Packer Avenue Sewer and its tributary sewers may lie partially beyond 2500 feet from the boundaries of the DSCP facility.

DETERMINATIONS OF LAW

The Department has made the following Determinations of Law:

EE. The ground water beneath the DSCP facility and the surrounding areas of South Philadelphia is a water of the Commonwealth as defined by Section 1 of the Clean Streams Law, 35 P.S. § 691.1.

FF. The Packer Avenue sewer and the Schuylkill River are waters of the Commonwealth as defined by Section 1 of the Clean Streams Law, 35 P.S. § 691.1.

GG. The Schuylkill River is a navigable water of the United States as that term is used by the Clean Water Act, 33 U.S.C.A. §§ 1251 to 1387 and the Oil Pollution Act of 1990, 33 U.S.C.A. §§ 2701 to 2761.

HH. At various times in the past, industrial wastes and polluting substances in the form of petroleum hydrocarbons were released into the subsurface of the DSCP facility, Passyunk Homes and adjacent properties in violation of Sections 301, 307 and 401 of the Clean Streams Law, 35 P.S. §§ 691.301, 691.307 and 691.401.

II. Petroleum that was released into the subsurface of the DSCP facility and Passyunk Homes enters navigable waters of the United States via the Packer Avenue sewer, in violation of Section 1002 of the Oil Pollution Act of 1990 and Section 311 of the Clean Water Act, 33 USCA § 2702 and 33 USCA § 1321.

JJ. Sections 301 and 307(a) of the Clean Streams Law, 35 P.S. §§ 691.301 and 691.307(a) state that no person shall discharge industrial wastes into waters of the Commonwealth unless such discharge is authorized by the rules and regulations of the Department or unless the person has obtained a permit from the Department.

KK. The existing conditions in the area affected by the NAPL plume, by dissolved phase hydrocarbon and by contaminated soil, create a danger of pollution to waters of the Commonwealth within the meaning of Section 402 of the Clean Streams Law, 35 P.S. § 691.402.

LL. Pursuant to Section 316 of the Clean Streams Law, 35 P.S. § 691.316, whenever the Department finds that pollution or a danger of pollution is resulting from a condition which exists on land in the Commonwealth, the Department may order the land owner or occupier to correct the condition in a manner satisfactory to the Department.

MM. DLA operates and/or operated aboveground and underground storage tanks that are regulated by the Department pursuant to the Tank Act. 35 P.S. § 6021.101 *et seq.* The US

Army operated aboveground and underground storage tanks when it operated the former DSCP installation.

NN. Pursuant to Sections 1302 and 1309 of the Tank Act, 35 P.S. §§ 6021.1302 and 6021.1302, whenever the Department finds that pollution or a danger of pollution is resulting from a release from a regulated storage tank, the Department may order the land owner or occupier, or the tank owner or operator, to correct the condition in a manner satisfactory to the Department.

OO. Pursuant to Section 120(a) of CERCLA, 42 U.S.C.A. § 9620(a), owners of federal facilities are subject to state laws governing the remediation of hazardous substances.

PP. Section 9007 of the Solid Waste Disposal Act, 42 U.S.C.A. § 6991f, provides that any department, agency and instrumentality of the Federal Government is subject to all Federal and State laws applicable to underground storage tanks.

QQ. Section 313 of the Clean Water Act, 33 U.S.C.A. § 1323, requires that all Federal facilities comply with applicable state water pollution control laws.

RR. Federal law governing the transfer of former military installations requires that the Department of Defense indemnify and hold harmless the transferees of such installations from liabilities resulting from the release or threatened release of hazardous substances or pollutants or contaminants or petroleum derivatives resulting from Department of Defense activities on the installation. Pub. L. 102-484, Div. A, Title III, § 330, Oct. 23, 1992, 106 Stat. 2371, as amended.

SS. The standards for remediation of the Affected Area are set forth in Chapter 3 of the Land Recycling Act, 35 P.S. §§ 6026.301 - 6026.308.

Order

Pursuant to the authority granted by sections 5, 316 and 610 of the Clean Streams Law, 35 P.S. §§ 691.5, 691.316 and 691.610, Sections 1302 and 1309 of The Storage Tank and Spill Prevention Act, 35 P.S. §§ 6021.1302 and 6021.1309; and by Section 1917-A of the Administrative Code of 1929, 71 P.S. § 510-17 and the rules and regulations promulgated pursuant to these Acts, the Commonwealth of Pennsylvania, Department of Environmental Protection **Orders** DLA, the Department of the Army and DSCP (collectively "DLA") to take the following steps:

1. DLA shall immediately maintain and operate the NAPL removal system currently in place on the Passyunk Homes property and the DSCP facility, and shall design, construct, maintain and operate any additional remedial systems necessary to remove as much of the petroleum NAPL contamination from the Affected Area as is practicable.

2. DLA shall immediately take all steps necessary to demonstrate that the Affected Area is brought into compliance with the substantive, procedural and notice requirements and shall meet

one or a combination of the remedial standards set forth in the Land Recycling Act and the regulations found in 25 Pa. Code Chapter 250.

3. DLA shall immediately undertake all measures necessary to ensure that the health and safety of workers, residents and visitors within the Affected Area is protected from any unacceptable risks associated with or contributed to by the petroleum contamination described in Paragraphs G through O and BB through DD.

4. DLA shall immediately assume responsibility for the operation of that portion of the sewer air collection and filtration system described in Paragraph L which collects and treats petroleum vapors that enter the sewer system from within the Affected Area.

5. DLA shall perform risk assessments as necessary to monitor the risk to residents, workers and visitors within the Affected Area during the remedial phase. DLA shall continue to fund and otherwise support a Technical Advisory Group ("TAG") which shall advise and inform the residents and workers in the Affected Area and provide input to DEP. DLA shall submit all risk assessment work plans and work product to both DEP and to the TAG for review.

6. DLA shall, on the 15th day of each month following the end of each calendar quarter, submit reports to the Southeast Regional Office of DEP detailing all measures taken in conformance with this Order, and shall attach the results of all quantitative measurements taken during the previous three months. The quarterly report submitted following the end of each calendar year shall also contain an overview of the past year's activities and recommendations for future action. All data that refers to specific locations, such as monitoring wells and sampling points, shall be submitted in both written and in digital form suitable for use in an ArcView-based GIS system.

7. DLA shall provide DEP, its agents, employees and contractors free and unrestricted access to all portions of the DSCP facility to enable DEP to conduct investigations and inspections and to monitor and oversee all activities performed pursuant to this Order.

8. All groundwater, hydrocarbon and soil samples collected pursuant to this Order shall be analyzed at a qualified laboratory using EPA-approved methodology, where such a proven method exists. Alternate analytical methods may be employed if approved in advance by the DEP.

9. DLA shall reimburse DEP for all expenses incurred in the course of overseeing compliance with this Order. Reimbursement shall be made within 60 days of the submission of each DEP statement of expenses.

This action of the Department may be appealable, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 PA C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17101-8457, (717) 787-3483. TDD users may contact the Board through the Pennsylvania Relay Service at 800-654-5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in Braille or on audio tape from the Secretary to the Board at (717) 787-3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statute and decisional law.

[redacted]

Joseph A. Feola
Regional Director

Date: Dec. 10, 1999

Appendix A

Subsection Two:
2004 Notice of Intent to Remediate

DEFENSE LOGISTICS AGENCY
DEFENSE ENERGY SUPPORT CENTER
8725 JOHN J. KINGMAN ROAD, SUITE 4950
FORT BELVOIR, VIRGINIA 22060-6222

IN REPLY
REFER TO DESC-FQ

September 23, 2004

Mr. Stephan Sinding
Pennsylvania Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

RECEIVED
04 SEP 27 AM 10: 56
DIRECTOR'S OFFICE
D.E.P. SOUTHEAST REG.

Re: Notice of Intent to Remediate

Dear Mr. Sinding:

Enclosed is a Notice of Intent to Remediate (Notice) the former Defense Supply Center Philadelphia site, the Walt Whitman Bridge Approach (I-76) and the former Passyunk Homes property. Also enclosed is copy of the notice letter to Mr. Richard Zipin of the City of Philadelphia, Department of Health, and a copy of the newspaper notice which will appear in the Philadelphia Inquirer and the South Philly Review. Please publish an acknowledgment of receipt of this Notice in the Pennsylvania Bulletin at your earliest convenience.

If you have any questions, please telephone me at [redacted] or my Project Manager, Mr. [redacted]

Sincerely,

[redacted]

/Site Director
DESC-W

Enclosures:
As stated

Federal Recycling Program Printed on Recycled Paper

cc:



2530-FM-LRWM0019 Rev. 4/2004

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

NOTICE OF INTENT TO REMEDIATE

Act 1995-2 requires 4 general informational items to be included in the NIR: the general location, listing of contaminants, intended use of the property, and proposed remediation measures. In addition attach a site map if available.

Property Name Former Defense Supply Center Philadelphia and Former Passyunk Homes

Address/Location Area bounded to the north by Oregon Avenue, to the west by the CSX Railroad right-of-way, to the east by 20th Street and Penrose Avenue (Route 291) and to the south by Hulseman Terrace (approximately)

City Philadelphia **Zip Code** 19145

Municipality (if more than one, list all) Philadelphia

County Philadelphia

Latitude 75 °(deg.) 11 ‘(min) _____“(sec) **Longitude** 39 °(deg.) 55 ‘(min) _____ “(sec)

Horizontal Collection Method: GPS

Horizontal Reference Datum: North American Datum of 1983 **Reference Point:** NGS N276

Provide a general description of the site contamination in plain language (e.g. fuel oil spill, historical chemical industrial area contamination), the names of any known primary contaminants to be addressed, and the intended future use of the property: The soils and groundwater underlying the former Defense Supply Center Philadelphia (DSCP) property, the former Passyunk Homes property and the Walt Whitman Bridge Approach, the highway that separates the two properties, are contaminanted with a refined petroleum product. The contaminants of concern at the site include petroleum related organic compounds and inorganics. PADEP has noted a regional issue concerning contamination of the deep aquifer (Potomac-Raritan-Magothy) underlying South Philadelphia. Additional investigations are necessary to further characterize the constituents of concern.

The former DSCP Site was owned by the United States Army (Army) and operated by the Defense Logistics Agency (DLA). The air rights to the former DSCP facility were transferred to the Philadelphia Authority for Industrial Development (PAID) in October 2001 in order for the site to be re-developed. The Army still retains the ownership of the ground. The former DSCP property is currently being re-developed as a retail and commercial shopping center. The property is also utlized for some light industrial work. The future use of the property could include commercial or retail office buildings.

The former Passyunk Homes property is owned by the Philadelphia Housing Authority (PHA). All of the residential buildings on the former Passyunk Homes property were demolished in 2002. The only remaining building at the site is the 100,000 square foot former gymnasium building. As of June 2004, this building was being utilized by the Philadelphia Housing Authority Police Department and other office staff workers. The remainder of the former housing area is open space. The proposed future use of the now vacant former Passyunk Homes property is unknown at this time.

The portion of the Walt Whitman Bridge Approach (I-76) located between the former DSCP property and the former Passyunk Homes property is owned and operated by the Delaware River Port Authority. The Walt Whitman Bridge Approach (I-76) is a major six lane highway.

Provide a general description of proposed remediation measures: Skimming operations for the removal of free-phase petroleum product at the former DSCP facility began in July 1996. Full scale skimming operations on both the former DSCP and former Passyunk Homes properties began in 1999.

Vacuum-enhanced skimming will be used to remediate the free-phase petroleum product underlying the properties. Vacuum-enhanced skimmming applies a low vacuum to induce the flow of free-phase petroleum towards recovery wells and allows skimming pumps to remove the petroleum from the wells. The vacuum, placed to induce the flow of petroleum towards the wells, results in the removal of soil gas vapors that require treatment. The soil gas vapors will be treated with permitted thermal oxidizer units on the former DSCP property. The recovered free-phase petroleum product is, and will continue to be, placed in storage tanks on-site prior to off-site recycling.

A combination of statewide health standards, site specific and background standards may be used during the site remediation efforts.

Will remediation be to a site-specific standard ☒ or as a special industrial area ☐? If so, the municipality or municipalities must be provided 30-day comment period.
Remediator/Property Owner/Consultant. For each of these recipients of the approval of the final report, complete form below.

Remediator
Contact Person: [redacted]
Relationship to site (e.g. owner, remediator, participating in cleanup, consultant): Government agency for the Army responsible for the remediation efforts.
Phone Number: ([redacted]
Company Name: Defense Energy Support Center (DESC)
Address (street, city, state, zip): [redacted]
Email Address: [redacted]
Property Owner
Contact Person: Army Representative: [redacted], Installation Support Management Activity Philadelphia Housing Authority Contact: [redacted] Delaware River Port Authority Contact: [redacted]
Relationship to site (e.g. owner, remediator, participating in cleanup, consultant): Army Material Command: Owner of the former DSCP ground property. Philadelphia Housing Authority: Owner of the former Passuynk Homes property Delaware River Port Authority: Owner of the Walt Whitman Bridge Approach (I-76)
Phone Number: [redacted]
Company Name: United States Army Philadelphia Housing Authority Delaware River Port Authority
Address (street, city, state, zip): Army Installation Management Activity National Capitol Region Field Office ATTN: DAIM-BD-N 600 Army Pentagon

Washington, DC 20310-0600

Philadelphia Housing Authority: 12 South 23rd Street, Philadelphia, PA 19103

Delaware River Port Authority
One Port Center
2 Riverside Drive
P.O. Box 1949
Camden, New Jersey 08101-1949

Email Address: [redacted]

Consultant

Contact Person: [redacted]

Relationship to site (e.g. owner, remediator, participating in cleanup, consultant): Consultant to DESC

Phone Number: [redacted]

Company Name: Tetra Tech FW

Address (street, city, state, zip): [redacted]

Email Address: [redacted]

Preparer of Notice of Intent to Remediate:

Name: [redacted]

Title: Remediation Project Manager

Address: [redacted]

Telephone: [redacted]

Email Address: [redacted]

Email Image File of Site Map showing property lines and general area of site(s) to be remediated to: (landrecycling@state.pa.us)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT

NOTICE OF INTENT TO REMEDIATE INSTRUCTIONS

These instructions pertain to the Notice of Intent to Remediate (NIR). The NIR is a fill-in-the blank, check block, and brief narrative form. Complete the form to the extent that the particular information requested is known. Additional information may be attached with the NIR submission if desired. The procedures for submission of the NIR and notification requirements are detailed in the Land Recycling Technical Guidance Manual. You are encouraged to use the technical guidance provided in this manual when conducting site assessments.

Property Name

This is the name the property, where the site(s) is located and is known by, especially if designated so in a permit or official records. If there is more than one location with a similar name, more specific information should be included. If an existing name is not available, the site owners name or name of the person seeking the release of liability protection can be used.

Address/Location

Street address of the property. Provide the mailing address if different than the street address. If the street address is not available, provide the location of the property by road name with directions and distances from an established reference point.

Municipality

Name of all municipalities in which the site is located.

County

Name of county in which the site is located.

Latitude and Longitude

Indicate the latitude and longitude from the approximate center of the site. Show the latitude and longitude in degrees, minutes, and seconds. Indicate method used to acquire the location (Horizontal Collection Method); the Horizontal Reference Datum (NAD27 or NAD83) used in determining latitude and longitude coordinates; and the Reference Point. If more than one site is listed in the NIR and locations are not in the immediate vicinity, list separate latitude and longitudes.

General description

In a narrative, provide information concerning the site contamination, the names of any known primary contaminants to be addressed by the remediation, and the intended future use of the property.

General description of proposed remediation measures

In a narrative, provide information concerning the proposed remediation measures to be performed.

Site-specific standard or Special Industrial Area remediation

If known at the time of submission of the NIR, indicate if the site remediation will be to a site-specific standard or as a special industrial area. The municipality must be given a 30-day comment period if the remediation is to a site-specific standard or as a special industrial area remediation.

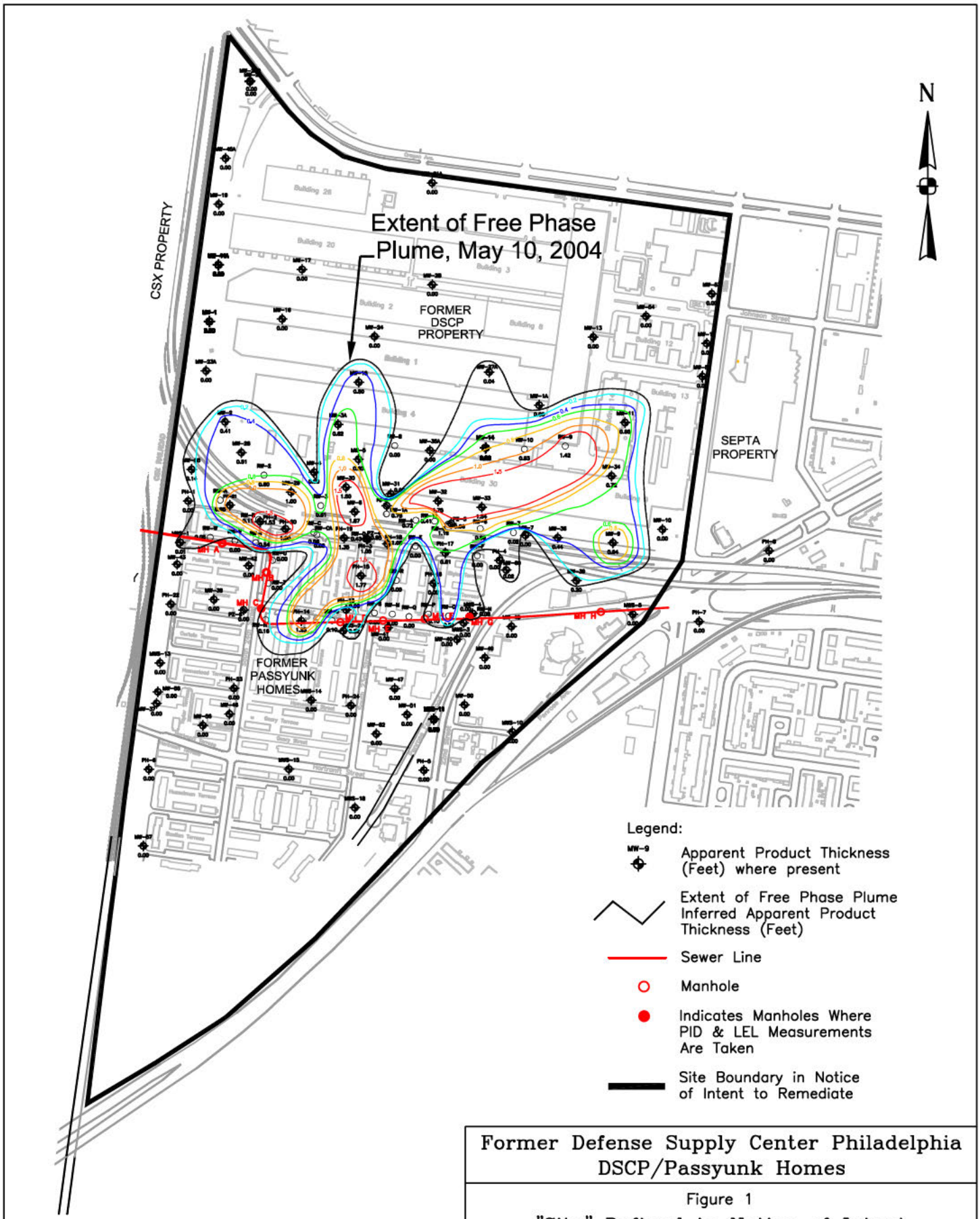
Remediator/Property Owner/Consultant

For each of these categories provide the applicant name, site relationship (owner, remediator, consultant), phone number, company name, and address. These persons will be recipients of the approval of the final report.

Preparer of Notice of Intent to Remediate

Provide the name, title, address, and phone number of the person preparing the NIR. Indicate preparer name even if same as one listed above.

Submit an image file of the site showing property lines and general area of site(s) location to be remediated. Email to: landrecycling@state.pa.us



Former Defense Supply Center Philadelphia
DSCP/Passyunk Homes

Figure 1

"Site" Defined in Notice of Intent to Remediate

TETRA TECH FW, INC.

H:\GISPROJ\DSCP_Key\SITE IN NIR.dwg, 09/09/2004 09:22:51 AM

Appendix A

Subsection Three:
Quitclaim Deeds

Quitclaim Deed for Western Parcel, Air Rights (see p. 12, ¶ 5. G.)

QUITCLAIM DEED (2)

THIS QUITCLAIM DEED made and entered into as of the 3rd day of October, 2001 by and between the **UNITED STATES OF AMERICA** ("Grantor"), acting by and through the Deputy Assistant Secretary of the Army (Installations & Housing) pursuant to a delegation of authority from the **SECRETARY OF THE ARMY** (the "Army") under and pursuant to the Defense Base Closure and Realignment Act of 1990, Public Law 101-510, as amended, and codified at 10 U.S.C. § 2687 (the "BRAC Law") and the Federal Property and Administrative Services Act of 1949, as amended, and codified at 40 U.S.C. § 484, for the utilization and disposal of excess and surplus property at closing and realigning military bases, and the **PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT,** a body corporate, and politic, and existing under the laws of the Commonwealth of Pennsylvania ("Commonwealth") having its principal place of business at 2600 Centre Square West, 1500 Market Street, Philadelphia, PA 19102 ("PAID" or "Grantee" as set forth herein).

WITNESSETH THAT:

WHEREAS, pursuant to the BRAC Law, the military installation at Defense Supply Center Philadelphia, ("DSCP") County of Philadelphia, Commonwealth of Pennsylvania, formerly called Defense Personnel Support Center until January 13, 1998, was determined surplus by the Army on March 30,1995; and

WHEREAS, the City of Philadelphia acting by and through PAID, was granted the authority to oversee and implement the civilian reuse of DSCP in accordance with a local-approved reuse plan; and

WHEREAS, pursuant to an Executive Order of the City of Philadelphia, PAID is recognized for the purposes of job creation, retention and redevelopment and qualifies as the "Local Redevelopment Authority" ("LRA") with regard to the disposal of the DSCP, and the Department of Defense ("DOD") and the Army, for purposes of the BRAC Law, have recognized PAID as such; and

WHEREAS, in August, 1997, PAID made application for an Economic Development Conveyance ("EDC") for the purchase of a portion of DSCP consisting of approximately 70± acres, more or less, in the aggregate, together with all improvements, buildings and structures thereon and appurtenances and other rights belonging or related thereto (collectively, the "Second EDC Property"); and

WHEREAS, the Army, as authorized by the BRAC Law, the National Defense Authorization Act for Fiscal Year 2000 (P.L. 106-65) ("Act") and the implementing regulations (32 CFR part 175) (the "Implementing Regulations"), and the October 29, 1999 policy memorandum issued by DOD with respect to the Act (the "Policy Memorandum"), has determined that the application meets the criteria for conveyance to assist economic redevelopment and job creation and qualifies as a no-cost EDC

conforming to the requirements of the Act, and the Army has accepted PAID's application and made a final disposal decision with regard to the Second EDC Property; and

WHEREAS, the Army and PAID have entered into an Agreement of Purchase and Conveyance ("Agreement"), dated November 21, 2000, establishing the terms and conditions for a no-cost EDC conveyance of the air rights and ground portions of the Second EDC Property to PAID and the lease to PAID of the ground portion of the Second EDC Property pending and in furtherance of the conveyance of the ground portion of the Second EDC Property to PAID; and

WHEREAS, the Agreement provides for the conveyance of the fee simple title in and to the Second EDC Property in phases, the first being the air rights portion of the Second EDC Property and the second being the ground portion of the Second EDC Property, upon the satisfaction of various conditions precedent set forth and described in the Agreement; and

WHEREAS, in accordance with the Agreement, until fee simple title in and to the ground portion of the Second EDC Property is available for conveyance in accordance with the terms of the Agreement, the Army has agreed to provide PAID with a lease in furtherance of conveyance ("LIFOC") for the ground portion of the Second EDC Property, giving PAID possession and control thereof as of the date of the LIFOC; and

WHEREAS, pursuant to the BRAC Law, as amended, the Army has the authority to convey and with this Deed conveys to PAID, pursuant to the terms and conditions of the Agreement, the fee simple right, title and interest in and to a portion of the Second EDC Property, as more particularly described herein as the "Property", located in the County of Philadelphia, Commonwealth of Pennsylvania, at DSCP.

NOW THEREFORE,

KNOW ALL MEN BY THESE PRESENTS that the Grantor, acting by and through the Deputy Assistant Secretary of the Army (Installations and Housing) pursuant to a delegation of authority from the SECRETARY OF THE ARMY under and pursuant to the BRAC Law, for good and valuable consideration as provided for in the Agreement between the parties, the receipt and sufficiency of which as consideration is hereby acknowledged, does hereby, grant, remise, release, convey and forever quitclaim unto PAID, as Grantee, and its successors and assigns, all its right, title, interest and estate in and to that portion of the Second EDC Property, located in the County of Philadelphia, Commonwealth of Pennsylvania, at DSCP, more particularly described as and consisting of the following (with the exception of the NAPL Plume (as hereinafter defined) remediation system): (A) the property as described in Exhibit A attached hereto and made a part hereof, and all of the buildings, structures, improvements and infrastructure, if any, contained therein together with all appurtenances thereto, (B) all hereditaments and tenements therein, (C) all easements,

reservations, reversions, remainders, issues, profits, and other rights belonging or related thereto, and (D) all above-ground mains, lines, conduits, facilities, pipes, taps, laterals, systems, appurtenances, components, parts and other items, if any, related to the rendering, provision or delivery of all utility services and products (including, but not limited to, electric, gas, water, sanitary sewer, storm sewer and fire suppression) to all or any part of the aforesaid property (collectively, the "Property").

TO HAVE AND TO HOLD the said Property unto the said Grantee and its successors and assigns, to and for the only proper use and behoof of the said Grantee and its successors and assigns, forever, subject to the covenants and conditions herein set forth.

The words "Grantor" and "Grantee" used herein shall be construed as if they read "Grantors" and "Grantees" respectively, whenever the sense of this Deed so requires and, whether singular or plural, such words shall be deemed to include in all cases the successors and assigns of the respective parties.

For purpose of this Deed

(1) the term "Grantor's activities or operations on the Property" shall mean either the Grantor's or the Defense Logistic Agency's ("DLA") and/or their respective contractors', agents', employees' and/or invitees' use, operation, occupancy, construction, installation, placement, operation, or maintenance of the Property; or failure to satisfy any otherwise legally applicable obligation to investigate or remediate any Environmental conditions existing at the Property (and shall include, without limitation, the NAPL Plume);

(2) the terms "release", "threatened release", "hazardous substance", "hazardous waste", "pollutant", "contaminant", "removal", remedial action", and "response" have the meanings given such terms under the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. § 9601 *et seq.* ("CERCLA") and the Environmental Protection Agency ("EPA") regulations implementing CERCLA;

(3) the term "Environmental condition(s)" shall mean any hazardous substance, pollutant or contaminant, including hazardous waste or hazardous constituent, petroleum or petroleum derivative disposed of, released or existing in environmental media such as soil, subsurface soil, air, groundwater, surface water or subsurface geological formations at levels above background;

(4) the phrase "Release or threatened release which Grantee Caused or Contributed To" shall mean any activity by Grantee or its employees, agents, contractors, subcontractors, lessees, sublessees, transferees, successors and assigns which contributed to the contamination currently existing on the Property after the date of this Deed, and excludes any actions except those that result from gross negligence

or intentional misconduct by Grantee or its employees, agents, contractors, subcontractors, lessees, sublessees, transferees, successors and assigns, which uncovers, discloses, disturbs, releases or results in the emission, migration or movement of Environmental conditions arising from Grantor's activities or operations on the Property, and such exclusion shall encompass, by way of example, but not by way of limitation, testing of the Property, the drilling, digging or excavation of soil or other disturbance of the surface of the ground, the demolition of structures, construction and redevelopment of the Property, the exercise of any easements and/or Subjacent Rights granted or conveyed in accordance with the terms of this Deed and the Subjacent Construction performed or conducted by, on behalf of or at the direction of Grantee or its employees, agents, contractors, subcontractors, lessees, sublessees, transferees, successors and assigns, provided: (i) such activity does not go beneath the Permitted Depth without obtaining any necessary Subjacent Approvals; (ii) such activity is not in violation of any Institutional Controls on the Property; or (iii) the Grantee immediately notifies the Grantor after gaining actual knowledge of such release or threatened release;

(5) the term "Institutional Controls" shall mean, collectively, (i) specific conditions, restrictions, requirements, controls, reservations and limitations that the Grantor determines, with appropriate input from the Environmental Agencies and the Grantee, are required to ensure the health, welfare and safety of the public or protection of the environment, including historic and cultural properties, and (ii) institutional controls required pursuant to CERCLA, the Resource Conservation and Recovery Act ("RCRA"), the Solid Waste Disposal Act (42 U.S.C. Section 6901 et seq.), the National Contingency Plan ("NCP") or similar state or local laws, all as more particularly set forth in this Deed.

(6) the term "Environmental Agency(ies)" shall mean the EPA, the Commonwealth of Pennsylvania, Department of Environmental Protection ("PADEP") or such other regulatory agency having jurisdiction over the environmental remediation of the Property;

(7) the term "Permitted Depth" shall mean the depth beneath the lower boundary of the Property down to and including a depth of ten (10) feet or such greater depth, as determined by the Grantor in consultation with the appropriate Environmental Agencies, as is reasonably necessary for the re-use of the Property in accordance with the uses set forth and described in Paragraph 5(G) of this Deed;

(8) the term "Subjacent Construction" shall mean construction or other work which will involve excavation, construction, installation or other work or activities under, below, beneath or subjacent to the Property;

(9) the term "Subjacent Construction Approvals" shall mean the approval, consent and concurrence of the Grantor in consultation with the appropriate Environmental Agencies with respect to any intended Subjacent Construction below the

Permitted Depth, which review shall be limited to activities that may adversely affect the remediation of the NAPL Plume or cause an unacceptable risk to human health or the environment and which approval shall not be unreasonably withheld, delayed or conditioned;

(10) the term "Subjacent Rights" shall mean the rights of Grantee, its successors and assigns, and its agents, contractors, subcontractors, employees, invitees and designees, of access to and entry in, on, onto, upon, over, across and through, and, to the extent of the Permitted Depth, within the Ground Property (and all portions thereof), for the purposes, in the manner and upon the terms and provisions set forth in this Deed; and

(11) the term "Ground Property" shall mean that portion of the Second EDC Property underlying and/or found subjacent or subterranean to the Property, together with the structures, improvements, roadways, infrastructure and structural support systems, and the appurtenances thereto, all hereditaments and tenements therein and all easements, reservations, reversions, remainders, issues, profits and other rights belonging or related thereto, all mineral rights and all below-ground mains, lines, conduits, facilities, pipes, taps, laterals, systems, appurtenances, components, parts and other items related to the rendering, provision or delivery of all utility services and products (including, but not limited to, electric, gas, water, sanitary sewer, storm sewer and fire suppression) to all or any part of the aforesaid Property.

1. Property Conveyed.

The legal description of the Property has been provided by Grantee and Grantee shall be responsible for the accuracy of the description of the Property conveyed herein.

2. Support Easements and Mutual Covenants.

Without in any way limiting, and subject to, the terms and provisions of that certain Declaration of Easements dated the same date as this Deed (which is to be recorded in the Office of the Recorder of Deeds prior to the recordation of this Deed (the "Declaration of Easements")), Grantor does hereby grant to Grantee the following described rights and easements, including but not limited to ingress and egress and for support, maintenance, and operation of any structures, buildings or other improvements of any kind whatsoever, now or at any time and from time to time hereinafter existing in, on or about the Property hereby conveyed:

A. An easement appurtenant to the Property herein conveyed within, over, on, through and across the subjacent air space and soil and the surface of the Ground Property immediately adjacent to and underlying the Property for vehicular and pedestrian access, ingress and egress to and from the Property and the buildings, structures and improvements, if any, thereon, and vehicular parking.

B. Subject to the conditions set forth in Paragraphs 5(H) and 5(J) of this Deed, all necessary or appropriate easements appurtenant to the Property herein conveyed and across, over, through, in, upon, under and within the air space and soil of the Ground Property down to and including the Permitted Depth, to construct, develop, service, operate, maintain, alter, install, modify, repair and replace the structural support system of the buildings, structures or other improvements, if any, now or hereafter located on or in the Property and any part thereof in the Ground Property to the extent of the Permitted Depth, which structural support system shall include, but not be limited to, all load-bearing members such as columns, footings, foundations, cross bracings and connections which support the building laterally, subjacent to the building grade, and/or otherwise, including the unlimited right to relocate, modify, repair, replace, shore-up or otherwise reinforce or in any other manner to deal with such structural support system.

C. An easement appurtenant to the Property herein conveyed for the service, operation, maintenance, alteration, installation, modification, repair or replacement of, in whole or in part, or additions to, all those areas set aside in any part of the Ground Property to the extent of the Permitted Depth for the function of mechanical facilities, communication lines, heating, ventilation, air conditioning systems, electrical power systems, plumbing and sewer systems and utility systems, including, but not limited to, all taps, laterals, lines, mains, conduits, facilities, pipes, systems, appurtenances, components, parts and equipment, fire protection systems, fuel systems including gas lines, sanitary sewer and storm sewer, fire suppression, and all other items, equipment and components relating to all or any part of the foregoing found in any part of the Ground Property to the extent of the Permitted Depth.

D. Grantor and Grantee agree that, to the extent rights substantially similar to those described in Paragraphs 2(A) through 2(C) above, inclusive, have been granted to, and then only for so long as such substantially similar rights exist in favor of, Grantee pursuant to a lease or other occupancy or use agreement with respect to the Property, the terms of such lease or other occupancy or use agreement with respect to such rights shall govern.

E. Grantor and Grantee do further mutually covenant and agree to assure Grantee's quiet enjoyment and full use and occupancy of the Property hereby conveyed, as follows:

(1) Grantor and Grantee each acknowledges and agrees that certain portions of the Property (and the existing buildings, structures and improvements thereon, if any), herein conveyed may share a party wall with other existing buildings, structures and improvements that are not part of this conveyance and that certain portions of the Property (and the existing buildings, structures and improvements thereon, if any), herein conveyed may encroach into the air space of land adjacent to the Property herein conveyed and that certain portions of existing

buildings, structures and improvements adjacent to the Property herein conveyed may encroach into the air space of the Property herein conveyed and Grantor and Grantee do hereby each covenant and agree that to the extent that any such existing buildings, structures or improvements currently extend over any boundary line herein described and constitute encroachments into the respective areas and estates owned by Grantor and Grantee, that the other shall suffer the same to continue and exist.

(2) Any buildings, structures or improvements as presently constructed may now or from time to time vary somewhat from the elevations and dimensions above set forth and it is hereby understood and agreed by and between Grantor and Grantee that said elevations and dimensions shall be subject to such variations therein as may exist in connection with any such buildings, structures or improvements as the same are actually constructed.

(3) By execution of this Deed, Grantor and Grantee do further mutually covenant and agree to assure Grantee's quiet enjoyment and full use and occupancy of the Property hereby conveyed, and the Grantee acknowledges receipt and acceptance of this Deed and affirms its agreement to observe the covenants and perform its obligations as set forth herein, which agreement shall be deemed to be a real covenant and shall run with the land and burden the Property hereinabove described.

3. Reserved Easements.

A. The Property is conveyed subject to the easements for the benefit of the owners and collective redevelopment of the entire property that formerly comprised the DSCP, as set forth in the Declaration of Easements.

B. Access Easement for Environmental Activities:

(1) The Grantor and its agents, employees, and contractors shall have access to and over the Property as may be from time to time, and only so long as, necessary, at Grantor's sole cost and expense, to fulfill the Grantor's environmental responsibilities under this Deed or as required for any investigation, response, corrective action or ground water monitoring pursuant to CERCLA, a Record of Decision ("ROD") or amendment thereto, the National Contingency Plan ("NCP"), RCRA, any order between the Grantor and PADEP and/or EPA ("Order"), or any Federal Facility Compliance Agreement ("FFCA") as well as the legal requirements of the Commonwealth such as the Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S.§§ 691.1-691.1001 ("Clean Streams Law"); The Land Recycling and Environmental Remediation Standards Act, Act of May 19, 1996, 35 P.S. 6026.101 et seq. ("Land Recycling Act"); The Storage Tank and Spill Prevention Act, Act of August 7, 1989, P.L. 1989 No. 32, as amended, 35 P.S. 6021.101 et seq. ("Tank Act"); Section 1917-A of the Administrative Code of 1979, Act of April 9, 1929, P.L. 177, as amended, 71 P.S. § 510-17 ("Administrative Code") and the rules and regulations

promulgated pursuant to these Acts (collectively called "Legal Requirements") found to be necessary before or after the date of this Deed on the Property or on other property comprising the DSCP in connection with the existence, release or threatened release of any hazardous substance, hazardous waste, pollutant, contaminant, petroleum or petroleum derivative, including, but not limited to, remediation of the plume of non-aqueous phase hydrocarbon liquid located approximately 18-20 feet below the lower boundary of the Property (the "NAPL Plume") and any monitoring wells on the Property in connection with the remediation and monitoring of the NAPL Plume and the Soil Gas Vapors (as hereinafter defined) (hereinafter collectively referred to as "remediation of DSCP"). In connection with the remediation of the NAPL Plume, the Grantor and its agents, employees, and contractors shall have the right to install and maintain "Protective Equipment" (as such term is defined in the Declaration of Easements) in accordance with and subject to the terms and conditions set forth in the Declaration of Easements. The Grantor, PADEP, and their authorized permittees and representatives shall have access to the Property to fulfill the Legal Requirements. The Grantee shall allow ingress and egress of all equipment necessary to accomplish the same. This reservation includes the right of access to and use of, to the extent permitted by law, any utilities obtained by the Grantor directly from any public or private utility provider at no cost to the Grantee or the then record owner(s) of the Property.

(2) Notification. When it becomes necessary to exercise the easement rights herein reserved to fulfill the Grantor's environmental responsibilities as set forth above, except in case of imminent endangerment to human health or the environment, the Grantor shall consult with Grantee, or the then record owner(s) of the Property, and, as necessary, the appropriate Environmental Agencies, and shall give the Grantee, or the then record owner(s) of the Property at least seventy-two (72) hours prior written notice of actions to be taken in remediation of the Property, excepting for a mutually agreeable schedule for routine operation and maintenance of the existing free phase hydrocarbon recovery system. In the event of an imminent endangerment to human health or the environment, the Grantor shall give the Grantee, or the then record owner(s) of the Property, as much advance notice as possible of any remedial actions it intends to take on the Property. The Grantor shall timely provide the Grantee, or the then record owner(s) of the Property, copies of any ROD, Order, or FFCA, or any amendments to said documents, and any information or other written material regarding or resulting from access to the Property by Grantor, and its agents, employees and contractors.

(3) Avoidance of Interference. Grantor, its agents, employees and contractors, shall use reasonable means, without significant additional cost to the Grantor, to avoid and/or minimize interference with the use of the Property. Subject to the provisions of this Paragraph 3(B) and Paragraph 9 of this Deed, the Grantee, the then record owner(s) of the Property, and any other person shall have no claim against the Grantor or any officer, agent, employee or contractors thereof solely on account of any such interference resulting from actions taken under this Paragraph 3(B).

(4) Environmental Condition of Property. As of the date of this conveyance, the Grantor has provided the Grantee with an Environmental Baseline Survey dated December 16, 1994, ("EBS") and Finding of Suitability to Transfer ("FOST") for the Property, which, to the Grantor's knowledge and belief, accurately reflects the environmental condition of the Property, as presently known, and its suitability to transfer.

(5) For purposes of this Paragraph 3(B), the Defense Logistics Agency (DLA) and the DSCP shall be deemed to be "agents" of the Grantor.

C. Notwithstanding any other provision of this Deed, the Grantee shall allow third parties under an Order issued by an Environmental Agency or pursuant to a final and unappealable decision of a court of competent jurisdiction to have access to, over, and through the Property, solely related to the remediation of the NAPL Plume, to implement the Legal Requirements in accordance with the Order, provided that such third parties shall be required to enter into a separate access agreement satisfactory to the Grantee or the then record owner(s) of the Property, which access agreement will not impose any costs upon the United States.

4. CERCLA Covenants and Notice.

Pursuant to Section 120(h)(3) of CERCLA:

A. The Grantor hereby notifies the Grantee that based upon a complete search of the Grantor's files (which the Grantor, to the best of its knowledge and belief, represents has been made) regarding the type, quantity and location of such substances, there was no storage, release, or disposal of hazardous substances on the Property in excess of reportable quantities. For the purpose of this Deed, "hazardous substances" shall have the same meaning as section 101 (14) of CERCLA. Based upon the FOST there is no unacceptable risk to human health or the environment and the Grantor has determined that the Property is suitable for transfer in accordance with the provisions of this Deed.

B. The Grantor hereby covenants and warrants that:

(1) all remedial action necessary to protect human health and the environment with respect to any such hazardous substances remaining on the Property has been taken before the date of this Deed; and

(2) any response action or corrective action found to be necessary after the date of this Deed in connection with a release or threatened release of any such hazardous substances remaining on the Property, shall be conducted by the Grantor except to and limited only by the extent to which such release or threatened release giving rise to such response action or corrective action is caused or contributed to by the activities of the Grantee or any employee, agent, representative, contractor,

subcontractor, licensee, lessee, sublessee, invitee, designee, transferee or successor or assign of Grantee. This covenant in this Subparagraph B shall not apply in any case in which the person or entity to whom the Property is transferred is a potentially responsible party under CERCLA with respect to the Property. For purposes of this Subparagraph B, the Grantor hereby covenants that previous tenancy, occupancy or use by the Grantee or any employee, agent, representative, contractor, subcontractor, licensee, lessee, sublessee, invitee, designee, transferee or successor or assign of Grantee of the portion of the Property so leased, occupied, or used by the Grantee or such employee, agent, representative, contractor, subcontractor, licensee, lessee, sublessee, invitee, designee, transferee or successor or assign of Grantee will not cause the Grantee or such employee, agent, representative, contractor, subcontractor, licensee, lessee, sublessee, invitee, designee, transferee or successor or assign of Grantee to be a potentially responsible party under this covenant or under CERCLA solely because or as a result of such tenancy, occupancy or use.

5. Environmental Restrictions and Covenants.

A. The Grantee or any person or entity to whom the Property is transferred shall neither transfer the Property, lease the Property, nor grant any interest, privilege, or license whatsoever in connection with the Property without the inclusion of the environmental protection provisions contained herein, and, subject to the provisions of this Paragraph 5, shall require the inclusion of such environmental protection provisions in all further deeds, transfers, leases, or grants of any interest, privilege, or license.

B. Prior to the determination by the applicable Environmental Agencies that remediation of the DSCP is complete, (i) the Grantee, its successors and assigns, shall not undertake activities on the Property that would significantly interfere with or impede the Grantor's completion of the remediation of the DSCP (provided, however, that Grantee, its successors and assigns, shall have the right, upon written notice to and approval from the Grantor (which approval shall not be unreasonably withheld, delayed or conditioned and shall be granted in good faith) to relocate or reconfigure (at its sole cost and expense) those portions of the existing free-phase hydrocarbon recovery system on the Property as necessary or prudent to facilitate or effectuate the redevelopment of all or any portion of the Property, provided that such relocation or reconfiguration does not significantly increase the cost of operating the existing free-phase hydrocarbon recovery system), and (ii) the Grantee shall comply with any and all Institutional Controls established or put in place by the Grantor relating to the Property as provided for in the Agreement. Any and all Institutional Controls imposed on or with respect to the Property before the date of this Deed are specifically set forth in this Deed. Any Institutional Controls imposed on or with respect to the Property after the date of this Deed for the Property shall be subject to Grantee's prior review. Such Institutional Controls shall not cause or result in a significant increase in the costs of redeveloping the Property or have a significant material adverse effect on the physical reuse of the Property for the purposes set forth in Paragraph 5(G) of this Deed.

Without in any way limiting the generality of the foregoing provisions, in imposing any Institutional Controls, before or after the date of this Deed for the Property, the Grantor shall use reasonable means, without significant, additional cost to the Grantor, to avoid and/or minimize interference with (i) the use of the Property by Grantee or any employee, agent, representative, contractor, subcontractor, licensee, lessee, sublessee, invitee, designee, transferee or successor or assign of the Grantee and their successors and assigns, and (ii) the exercise of any Subjacent Rights or conduct of any Subjacent Construction (including, but not limited to, excavation of soil down to and including the Permitted Depth to permit the redevelopment of the DSCP Property) consistent with the restrictions on the use of the Property expressly set forth in this Deed even though such use, construction or development may be in areas of the Property in proximity to the NAPL Plume. Additionally, the Grantee shall ensure that any leasehold it grants in the Property or any fee interest conveyance of any portion of the Property provides for compliance with the Institutional Controls, and said Institutional Controls shall be binding upon subsequent transferees.

C. For any portion of the Property subject to a response action in accordance with the Legal Requirements prior to the earlier of the conveyance of an interest therein by the Grantee which response action is ongoing at the time of such conveyance, the Grantee shall include in all conveyance documents, provisions allowing for the continued operation of any monitoring wells, treatment facilities, or other response activities on the Property undertaken and conducted by the Grantor pursuant to the Legal Requirements and shall notify the Grantor, PADEP and, as appropriate, EPA, by certified mail, at least fifteen (15) days prior to any such conveyance of an interest in said Property, which notice shall include a description of said provisions allowing for the continued operation of any monitoring wells, treatment facilities, or other response activities undertaken and conducted pursuant to the Legal Requirements upon and subject to the terms and conditions set forth in this Deed.

D. Until such time as remediation of the DSCP is complete, as determined by the appropriate Environmental Agencies, the Grantee and all subsequent transferees of an interest in any portion of the Property, will provide copies of the instrument evidencing a conveyance of any portion of the Property to the Grantor by certified mail, within fourteen (14) days after the effective date of such transaction.

E. The provisions of this Paragraph 5 shall be deemed to run with the land and shall be binding on the Grantee, its successors and assigns, and on all subsequent transferees of the Property. Except as expressly set forth in Paragraph 5(F) herein, the Grantee and all subsequent transferees of the Property shall include the provisions of this Paragraph 5 in all subsequent lease, transfer, or conveyance documents relating to the Property, or any portion thereof, that are entered into prior to a determination by the appropriate Environmental Agencies that remediation of DSCP is complete.

F. To the extent the same involve or relate to the remediation of the NAPL Plume, the obligations of the Grantee set forth in Paragraphs 3(B), 3(C), 5(A), 5(B),

5(C) and 5(D) above shall automatically expire upon the completion of the remediation of the NAPL Plume. To the extent the same involve or relate to the remediation of the NAPL Plume, the rights of the Grantor or DLA/DSCP, including any of their agents, employees and contractors, as set forth in Paragraphs 3(B), 3(C), 5(A), 5(B) and 5(C) above shall automatically expire upon the completion of the remediation of the NAPL Plume. As used in this Deed, the phrase "completion of the remediation of the NAPL Plume" shall be deemed to have occurred when (a) all of the applicable Environmental Agencies (including, but not limited to, PADEP and EPA) issue a written determination that all response actions or corrective actions associated with the remediation of the NAPL Plume and also including, but not limited to, response actions required to be taken by the Grantor or other third parties, have been completed, excepting only that groundwater monitoring required by the applicable Environmental Agencies (including, but not limited to, PADEP and EPA) may continue, and (b) all machinery, equipment and other devices associated with the remediation of the NAPL Plume (including, but not limited to, the existing free phase hydrocarbon recovery system and system related infrastructure) are removed from the Property and all areas affected thereby restored, and all groundwater wells not being used for monitoring purposes as described above are closed by the Grantor and such closure has been approved, in writing, by the appropriate Environmental Agencies (including, but not limited to, PADEP and EPA).

G. Commercial/Industrial Use:

(1) Purposes: The Grantor, acting on behalf of the United States, has undertaken careful environmental study of the Property and concluded that the best and highest use of the Property is currently limited to non-residential uses, such as, by way of example, commercial, office, industrial and retail uses excluding child care. In order to protect human health and the environment and further the common environmental and use plans of the United States, the Commonwealth of Pennsylvania, and the Grantee, the covenants and restrictions set forth herein shall be included to assure the use of the Property is consistent with the environmental condition of the Property. These restrictions and covenants benefit the public generally and are consistent with state and federal environmental statutes.

(2) Restrictions and Covenants: The Grantee covenants for itself, its successors and assigns, to use the Property in perpetuity (except to the extent revised or amended pursuant to Subparagraph (G)(4) below) solely for non-residential uses, such as, by way of example, commercial, office, industrial and retail uses, excluding child care and, subject to Subparagraph (G)(4) below, never to undertake or allow the construction on or usage of the Property for residential or any purpose other than the maintenance and use of non-residential uses, such as, by way of example, commercial, office, industrial and retail uses excluding child care. The Grantee, its successors or assigns will, subject to Subparagraph (G)(4) below, never undertake nor allow any activity on or use of the Property that may adversely affect or detract from the restrictions contained herein. These restrictions bind and run with the Property and, except to the extent revised or amended pursuant to Subparagraph (G)(4) below, are

forever hereinafter enforceable.

(3) Enforcement: The restrictions and covenants benefit the United States, the common redevelopment of the DSCP property, and the buildings and area surrounding the Property, and are enforceable by the United States and other appropriate governmental authorities having jurisdiction thereover as provided for by law. The Grantee covenants for itself, its successors and assigns, that, except to the extent revised or amended pursuant to Subparagraph (G)(4) below, it shall include and otherwise make legally binding these restrictions in all subsequent leases, and transfer or conveyance documents relating to the Property.

(4) Upon consent of the Grantor (which consent shall not be unreasonably withheld, delayed or conditioned), and as appropriate, PADEP or any successor thereto, or other Environmental Agencies, additional uses may be made of the Property upon the Grantor's execution of and recording in the County and City of Philadelphia land records a restrictive covenant revising and amending the provisions of this Paragraph 5. Upon approval as provided for in this Subparagraph (G)(4), the Grantor agrees to execute such revised restrictive covenant in recordable form within a reasonable time, provided that the Grantor shall not be required to expend any funds as a result thereof.

H. Groundwater And Soil Restriction.

The Grantor has identified that the ground or soil below the transferred Property is underlain by the NAPL Plume which is located at a depth of approximately 18 to 20 feet below grade. The Grantor acknowledges and agrees that neither the Grantee nor any employee, agent, representative, contractor, subcontractor, licensee, lessee, sublessee, invitee, designee, transferee or successor or assign of Grantee has, nor shall have, any obligation, liability or responsibility for the NAPL Plume, and neither the Grantee nor any employee, agent, representative, contractor, subcontractor, licensee, lessee, sublessee, invitee, designee, transferee or successor or assign of Grantee is or shall be responsible for any investigation, removal, or remediation of the NAPL Plume provided, however, that this Subparagraph (H) shall not release any successor, assignee, grantee, transferee, lender, employer, agent, lessee or sublessee of Grantee, or any other third party, from liability if found by a court of competent jurisdiction to have contributed to the contamination of the NAPL Plume or other contamination of the Property resulting therefrom. The Grantor agrees to be responsible for the remediation of the NAPL Plume to the extent required by law and/or the Agreement.

Due to the existence of the NAPL Plume, the following encumbrances apply:

(1) Restrictions and Conditions:

The Grantee covenants for itself, its successors and assigns not to:

(a) Access or use ground water underlying the Property for any purpose, other than water sampling and monitoring, until such time as PADEP agrees and certifies in writing ("Certification") that the ground water underlying the Property is suitable for the requested use and such Certification is placed of record in the County and City of Philadelphia land records, at which time said restriction shall automatically terminate. For the purpose of this restriction, "ground water" shall have the same meaning as in section 101(12) of CERCLA.

(b) Until the completion of remediation of the NAPL Plume, conduct any Subjacent Construction (including any subsurface excavation, digging, drilling or other disturbance of the Ground Property) below the Permitted Depth, without obtaining the Subjacent Construction Approvals, except as necessary to respond to an emergency situation where obtaining the Subjacent Construction Approvals in advance is not feasible, in which case the Grantor, PADEP and, as appropriate, EPA shall be notified as soon as practicable.

(c) Undertake nor allow any activity on or use of the Property that would violate the restrictions contained herein to the extent then in effect.

(2) Enforcement: The restrictions and covenants benefit the United States, the common redevelopment of the DSCP property, and the buildings and area surrounding the Property, and are enforceable by the United States and other appropriate governmental authorities having jurisdiction thereover, as provided for by law. The Grantee covenants for itself, its successors, and assigns that, to the extent the same are then in effect, it shall include and otherwise make legally binding these restrictions in all subsequent leases, and transfer or conveyance documents relating to the Property.

I. Hazardous Waste Safety Plan:

While the fee interest to the Ground Property is owned by the Grantor, prior to the storage of any hazardous waste, material, or substance, or petroleum or petroleum products (other than the NAPL Plume) on the Property, the Grantee shall prepare and maintain, or cause to be prepared and maintained, a plan, certified by a Professional Engineer, for responding to hazardous waste, petroleum or petroleum products (other than the NAPL Plume) and other chemical spills. The plan shall be submitted to the Grantor for its review and approval, which approval shall not be unreasonably withheld, delayed or conditioned and which shall be deemed approved if no response is provided by Grantor within thirty (30) days of its receipt of such Plan. Such plan shall be independent of the DSCP and shall not rely on Grantor's or DSCP's personnel or equipment. Should the Grantor or DSCP provide any personnel or equipment, because the Grantee was not, in the opinion of the Base Realignment and Closure Environmental Coordinator, conducting timely response actions, the Grantee agrees to reimburse the Grantor or DSCP for its actual reasonable costs so long as Grantor or

DSCP provided Grantee an opportunity to provide the personnel or equipment. Upon Grantor's conveyance of the fee interest to the Ground Property, this requirement shall become void.

J. Notice Of The Presence Soil Gas Vapors:

(1) Based on information obtained from a soil gas survey, the Grantor has documented the presence and determined the general location, extent, nature and source of soil gas vapors [primarily methane gas but also including VOC's] ("Soil Gas Vapors") which may accumulate in the sub-surface soils on the Property, including within the Permitted Depth. The Grantor has determined that the source of the Soil Gas Vapors is the biodegradation of the NAPL Plume underlying the Property. While the Grantor has determined that the Property is suitable for its intended purpose for non-residential uses, the Soil Gas Vapors could present a hazardous condition during ground construction activities or within confined subterranean building areas or underground utilities, unless properly managed. The Grantee is advised that certain federal, state and local laws or regulations (including, but not limited to, occupational safety and health regulations regarding monitoring, control and preventive measures) may be applicable during construction and maintenance activity, and, with respect to construction activity, there may be a need to implement certain design features for buildings on the Property. Accordingly, the Grantee, as its sole obligation with respect to such Soil Gas Vapors, shall ensure that appropriate measures, as required by applicable laws or regulations or common practice, are taken during any construction or maintenance activity on the Property to detect and mitigate, using common and precautionary engineering, construction, or, with respect to construction activity, design measures, any unacceptable levels of Soil Gas Vapors. If any unacceptable levels of Soil Gas Vapors are detected that cannot be controlled using common and precautionary engineering, construction or, with respect to construction activity, design measures, the Grantee shall ensure the cessation of such activities and ensure that the Grantor is promptly notified of these conditions. Upon notification, the Grantor shall promptly notify PADEP, and, in consultation with PADEP and Grantee (or the then current owner(s) of the Property) and any then current tenants or subtenant(s) of the Property who are or could be affected by such unacceptable levels of Soil Gas Vapors, the Grantor shall, in its sole discretion, and at its sole cost and expense, promptly either (i) take any necessary remedial action to reduce the level of Soil Gas Vapors to a level that can be controlled with common and precautionary engineering, construction or, with respect to construction activity, design measures, or (ii) provide for precautionary mitigation measures to protect human health and safety. Any such remedial action or precautionary mitigation measures taken by the Grantor shall be coordinated with any affected Grantee (or the then current owner(s) of the Property) and any then current affected tenants or subtenants of the Property and approved in writing by PADEP, and shall not cause a significant increase in the cost of redeveloping the Property or cause a material adverse affect on the physical re-use of the Property.

(2) Neither the Grantee nor any successor, successor-in-title, assignee,

grantee or transferee of Grantee, or any other person or entity that acquires or possesses ownership or control of all or any part of the Property, shall transfer or convey the Property, lease or sublease the Property, or grant any interest, right, privilege or license whatsoever to or in connection with the Property without including the provisions contained in this Paragraph 5(J) verbatim or by express reference. The provisions of this Paragraph 5(J) shall be deemed to run with the land and shall be legally binding on the Grantee, its successors and assigns, and all subsequent grantees or transferees and all persons or entities that at any time hereafter acquire ownership or control of all or any portion of the Property.

6. No Warranties.

Except as otherwise expressly provided for in this Deed or under applicable law or under any provision of the Agreement, (a) the Property is being conveyed "As Is" and "Where Is" without any representations, warranties, or guaranties as to quantity, quality, title, character, condition, size or kind, or that the Property is in a condition or fit to be used for the purpose for which it is intended, and (b) the conveyance will be without any obligation on the part of the Grantor to make any alterations, repairs, or additions to the Property.

7. Installation of Interpretive Exhibit.

The Grantor or DLA reserves the right of access to install the Interpretive Exhibit (as defined and described in the Programmatic Agreement entered into between the Grantor, the Pennsylvania State Historic Preservation Office and the Advisory Council on Historic Preservation executed on August 4, 1998, as amended (the "SHPO Programmatic Agreement")) in accordance with the terms of the SHPO Programmatic Agreement.

8. Notice of Non-Discrimination.

With respect to activities related to the Property, the Grantee shall not discriminate against any person or persons or exclude them from participation in the Grantee's operations, programs or activities conducted on the Property, because of race, color, religion, sex, age, handicap, or national origin.

9. Statutory Indemnification of Grantee.

A. The Grantor recognizes and agrees, as set forth in Section 330 of Public Law 102-484, as amended, to hold harmless, defend, and indemnify in full Grantee and its employees, agents, contractors, subcontractors, lessees, sublessees, transferees, successors and assigns from and against any suit, claim, demand or administrative or judicial action, liability, judgment, cost or other fee arising out of any claim for personal injury or property damage (including death, illness, or loss of or damage to property or economic loss) that results from, or is in any manner predicated upon, the release or

threatened release of any hazardous substance, pollutant or contaminant, or petroleum or petroleum derivative (including but not limited to the NAPL Plume) as a result of the Grantor's activities or operations on the Property.

B. The indemnification set forth in Paragraph 9(A) is reduced only to the extent there is a release or threatened release which Grantee, its employees, agents, contractors, subcontractors, lessees, sublessees, transferees, successors and assigns caused or contributed to (as such phrase is defined in this Deed).

10. No Reverter.

Notwithstanding any other provision of this Deed, Grantor acknowledges that none of the conditions, restrictions, covenants, easements, reservations, or other provisions in this Deed that impose obligations upon Grantee, its transferees, successors and assigns, shall create any possibility of "reverter" of or other divestiture or forfeiture of title, interest or estate in or to the Property in the event Grantee or any employee, agent, contractor, subcontractor, lessee, sublessee, transferee, successor or assign of Grantee or its or their successors and assigns fails to comply with such obligations, but shall give rise only to such causes of action that exist at law or in equity without affecting the title, interest and estate granted herein from Grantor to Grantee and Grantee's transferees, successors and assigns (and to the heirs, successors and assigns of such transferees, successors and assigns, in perpetuity).

11. Anti-Deficiency Act.

The Grantor's obligation to pay or reimburse any money under this Deed is subject to the availability of appropriated funds, and nothing in this Deed shall be interpreted to require obligations or payments by the United States in violation of the Anti-Deficiency Act, 31 USC 1341; provided that the Grantor shall otherwise comply with all applicable statutory requirements and its obligations under the terms of this Deed.

12. Continuing Obligation.

To the extent required by and pursuant to the terms of this Deed, Grantee agrees to include the terms, covenants, promises, obligations, undertakings, limitations and restrictions contained in this Deed in all subsequent documents or instruments by which Grantee conveys or transfers ownership or control of all or any portion of the Property. The Grantor acknowledges that PAID, as Grantee hereunder, intends to be, and such subsequent documents and instruments shall provide that PAID, as the Grantee, shall be, released, relieved and discharged of all liability, responsibility and obligation of any kind with respect to the covenants, obligations, promises, undertakings, limitations and restrictions in this Deed upon such conveyance or transfer of ownership or control of all or any portion of the Property. However, PAID's obligation to comply with and observe such terms, covenants, promises, obligations,

undertakings, limitations and restrictions during PAID's period of ownership of the Property (or portion thereof) shall not be conditioned upon PAID's obtaining such a release in subsequent documents and instruments conveying or transferring ownership or control of all or any portion of the Property.

IN WITNESS WHEREOF, the Grantor has caused this Deed to be executed in its name by the Acting Deputy Assistant Secretary of the Army (I&H), and the seal of the Department of the Army to be hereunto affixed as of the 3rd day of October 2001.

UNITED STATES OF AMERICA

By: [redacted]

Acting Deputy Assistant Secretary of the Army
(Installations and Housing)
OASA(I&E)

Signed and sealed and delivered
in the presence of:

Witness [redacted]

Witness [redacted]

COMMONWEALTH OF VIRGINIA)
COUNTY OF ARLINGTON) ss:

I, the undersigned, a Notary Public in and for the Commonwealth of Virginia; County of Arlington, whose commission as such expires on the 30th day of November 2002 do hereby certify that this day personally appeared before me in the Commonwealth of Virginia, County of Arlington, Joseph W. Whitaker, Acting Deputy Assistant Secretary of the Army (I&H), whose name is signed to the foregoing instrument and who acknowledged the foregoing instrument to be his free act and deed, dated this 3rd day of October 2001, and acknowledged the same for and on behalf of the UNITED STATES OF AMERICA.

[redacted]
Notary Public

ACCEPTANCE: The Philadelphia Authority For Industrial Development, does hereby accept and approve this Quitclaim Deed and agrees to all of the terms and conditions thereof as of the 9th day of October 2001.

THE PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT

BY [redacted]
[redacted] Chairman

COMMONWEALTH OF PENNSYLVANIA)
COUNTY OF PHILADELPHIA } ss

I, the undersigned, a Notary Public in and for the Commonwealth of Pennsylvania, County of Philadelphia, whose commission as such expires on the 2nd day of April, 2005 do hereby certify that this day personally appeared before me in the Commonwealth of Pennsylvania, County of Philadelphia, James McManus, whose name is signed to the foregoing instrument and acknowledged the foregoing instrument to be his free act and deed, dated this 9th day of October 2001, and acknowledged the same for and on behalf of the Philadelphia Authority For Industrial Development

[redacted]
Notary Public

NOTARIAL SEAL
[redacted] Notary Public
City of Philadelphia, Phila. County
My Commission Expires April 2, 2005

August 29, 2001

DESCRIPTION OF REMAINDER OF DEFENSE SUPPLY CENTER
DESCRIPTION OF AERIAL RIGHTS

All that certain lot or piece of ground, lying above a horizontal plane 17 feet above City of Philadelphia Datum, situate in the 26th Ward of the City of Philadelphia and described according to a Plan of Property made by James P. Vesey, Surveyor and Regulator of the Second Survey District, on September 8, 2000, as follows:

Beginning at a point, lying above a horizontal plane 17' above City of Philadelphia Datum, on the Southwesterly side of Oregon Avenue (120' wide), at the distance of 1007.41' Northwestwardly from the Northwesterly side of 20th Street (70' wide); **Thence** extending S. 15° 00' 00" W., the distance of 1241.66' to a point; **Thence** extending N. 75° 00' 00" W., the distance of 611.73' to a point; **Thence** extending S. 15° 00' 00" W., the distance of 347.85' to a point on the Northeasterly right-of-way Line of the Delaware River Port Authority; **Thence** extending along the Northeasterly right-of-way Line of the Delaware River Port Authority N. 72° 30' 00" W., the distance of 89.87' to a point; **Thence** extending along the Northeasterly right-of-way Line of the Delaware River Port Authority, N. 67° 30' 00" W., the distance of 101.03' to a point; **Thence** extending N. 25° 00' 00" E., the distance of 28.94' to a point; **Thence** extending Northwestwardly on the arc of a circle curving to the right, said curve being tangent at the beginning to a line having a bearing of N. 65° 00' 00" W., having a radius of 530.377', the arc distance of 296.665' to a point on a curve; **Thence** extending N. 32° 09' 59" W., the distance of 126.530' to a point of curve; **Thence** extending Northwestwardly and Northeastwardly on the arc of a circle curving to the right, having a radius of 572.541', the arc distance of 471.327' to a point of tangent; **Thence** extending N. 15° 00' 00" E., the distance of 909.55' to a point; **Thence** extending S. 75° 00' 00" E., the distance of 13.52' to a point; **Thence** extending N. 15° 00' 00" E., the distance of 455.83' to a point on the Southwesterly side of Vare Avenue (108' wide); **Thence** extending along the Southwesterly side of said Vare Avenue, S. 30° 33' 42" E., the distance of 353.28' to a point of curve; **Thence** extending along the Southwesterly side of said Vare Avenue along the arc of circle, curving to the left and Southeastwardly connecting the Southwesterly side of said Vare Avenue with the Southwesterly side of Oregon Avenue (variable width), having a radius of 728.978' the arc distance of 565.392' to a point of tangent on the Southwesterly side of said Oregon Avenue; **Thence** extending along the Southwesterly side of said Oregon Avenue, S. 75° 00'00" E., the distance of 559.70' to the first mentioned point and place of beginning.

Containing in Area 1,910,027 Sq. Ft. or 43.84819 Acres.

[redacted]

Surveyor and Regulator
Second Survey District

77p2000
Block #18

EXHIBIT A

Quitclaim Deed, Building 30 & East Parcel Air Rights (see p. 12, ¶ 5. G.)

QUITCLAIM DEED (7)

THIS QUITCLAIM DEED made and entered into as of the 3rd day of October, 2001 by and between the **UNITED STATES OF AMERICA** ("Grantor"), acting by and through the Deputy Assistant Secretary of the Army (Installations & Housing) pursuant to a delegation of authority from the **SECRETARY OF THE ARMY** (the "Army") under and pursuant to the Defense Base Closure and Realignment Act of 1990, Public Law 101-510, as amended, and codified at 10 U.S.C. § 2687 (the "BRAC Law") and the Federal Property and Administrative Services Act of 1949, as amended, and codified at 40 U.S.C. § 484, for the utilization and disposal of excess and surplus property at closing and realigning military bases; and the **PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT,** a body corporate, and politic, and existing under the laws of the Commonwealth of Pennsylvania ("Commonwealth") having its principal place of business at 2600 Centre Square West, 1500 Market Street, Philadelphia, PA 19102 ("PAID" or "Grantee" as set forth herein).

WITNESSETH THAT:

WHEREAS, pursuant to the BRAC Law, the military installation at Defense Supply Center Philadelphia, ("DSCP") County of Philadelphia, Commonwealth of Pennsylvania, formerly called Defense Personnel Support Center until January 13, 1998, was determined surplus by the Army on March 30,1995; and

WHEREAS, the City of Philadelphia acting by and through PAID, was granted the authority to oversee and implement the civilian reuse of DSCP in accordance with a local-approved reuse plan; and

WHEREAS, pursuant to an Executive Order of the City of Philadelphia, PAID is recognized for the purposes of job creation, retention and redevelopment and qualifies as the "Local Redevelopment Authority" ("LRA") with regard to the disposal of the DSCP, and the Department of Defense ("DOD") and the Army, for purposes of the BRAC Law, have recognized PAID as such; and

WHEREAS, in August, 1997, PAID made application for an Economic Development Conveyance ("EDC") for the purchase of a portion of DSCP consisting of approximately 70± acres, more or less, in the aggregate, together with all improvements, buildings and structures thereon and appurtenances and other rights belonging or related thereto (collectively, the "Second EDC Property"); and

WHEREAS, the Army, as authorized by the BRAC Law, the National Defense Authorization Act for Fiscal Year 2000 (P.L. 106-65) ("Act") and the implementing regulations (32 CFR part 175) (the "Implementing Regulations"), and the October 29, 1999 policy memorandum issued by DOD with respect to the Act (the "Policy Memorandum"), has determined that the application meets the criteria for conveyance to assist economic redevelopment and job creation and qualifies as a no-cost EDC

conforming to the requirements of the Act, and the Army has accepted PAID's application and made a final disposal decision with regard to the Second EDC Property; and

WHEREAS, the Army and PAID have entered into an Agreement of Purchase and Conveyance ("Agreement"), dated November 21, 2000, establishing the terms and conditions for a no-cost EDC conveyance of the air rights and ground portions of the Second EDC Property to PAID and the lease to PAID of the ground portion of the Second EDC Property pending and in furtherance of the conveyance of the ground portion of the Second EDC Property to PAID; and

WHEREAS, the Agreement provides for the conveyance of the fee simple title in and to the Second EDC Property in phases, the first being the air rights portion of the Second EDC Property and the second being the ground portion of the Second EDC Property, upon the satisfaction of various conditions precedent set forth and described in the Agreement; and

WHEREAS, in accordance with the Agreement, until fee simple title in and to the ground portion of the Second EDC Property is available for conveyance in accordance with the terms of the Agreement, the Army has agreed to provide PAID with a lease in furtherance of conveyance ("LIFOC") for the ground portion of the Second EDC Property, giving PAID possession and control thereof as of the date of the LIFOC; and

WHEREAS, pursuant to the BRAC Law, as amended, the Army has the authority to convey and with this Deed conveys to PAID, pursuant to the terms and conditions of the Agreement, the fee simple right, title and interest in and to a portion of the Second EDC Property, as more particularly described herein as the "Property", located in the County of Philadelphia, Commonwealth of Pennsylvania, at DSCP.

NOW THEREFORE,

KNOW ALL MEN BY THESE PRESENTS that the Grantor, acting by and through the Deputy Assistant Secretary of the Army (Installations and Housing) pursuant to a delegation of authority from the SECRETARY OF THE ARMY under and pursuant to the BRAC Law, for good and valuable consideration as provided for in the Agreement between the parties, the receipt and sufficiency of which as consideration is hereby acknowledged, does hereby, grant, remise, release, convey and forever quitclaim unto PAID, as Grantee, and its successors and assigns, all its right, title, interest and estate in and to that portion of the Second EDC Property, located in the County of Philadelphia, Commonwealth of Pennsylvania, at DSCP, more particularly described as and consisting of the following (with the exception of the NAPL Plume (as hereinafter defined) remediation system): (A) the property as described in Exhibit A attached hereto and made a part hereof, and all of the buildings, structures, improvements and infrastructure contained therein together with all appurtenances thereto, (B) all hereditaments and tenements therein, (C) all easements, reservations,

reversions, remainders, issues, profits, and other rights belonging or related thereto, and (D) all above-ground mains, lines, conduits, facilities, pipes, taps, laterals, systems, appurtenances, components, parts and other items related to the rendering, provision or delivery of all utility services and products (including, but not limited to, electric, gas, water, sanitary sewer, storm sewer and fire suppression) to all or any part of the aforesaid property (collectively, the "Property").

TO HAVE AND TO HOLD the said Property unto the said Grantee and its successors and assigns, to and for the only proper use and behoof of the said Grantee and its successors and assigns, forever, subject to the covenants and conditions herein set forth.

The words "Grantor" and "Grantee" used herein shall be construed as if they read "Grantors" and "Grantees" respectively, whenever the sense of this Deed so requires and, whether singular or plural, such words shall be deemed to include in all cases the successors and assigns of the respective parties.

For purpose of this Deed

(1) the term "Grantor's activities or operations on the Property" shall mean either the Grantor's or the Defense Logistic Agency's ("DLA") and/or their respective contractors', agents', employees' and/or invitees' use, operation, occupancy, construction, installation, placement, operation, or maintenance of the Property; or failure to satisfy any otherwise legally applicable obligation to investigate or remediate any Environmental conditions existing at the Property (and shall include, without limitation, the NAPL Plume);

(2) the terms "release", "threatened release", "hazardous substance", "hazardous waste", "pollutant", "contaminant", "removal", remedial action", and "response" have the meanings given such terms under the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. § 9601 *et seq.* ("CERCLA") and the Environmental Protection Agency ("EPA") regulations implementing CERCLA;

(3) the term "Environmental condition(s)" shall mean any hazardous substance, pollutant or contaminant, including hazardous waste or hazardous constituent, petroleum or petroleum derivative disposed of, released or existing in environmental media such as soil, subsurface soil, air, groundwater, surface water or subsurface geological formations at levels above background;

(4) the phrase "Release or threatened release which Grantee Caused or Contributed To" shall mean any activity by Grantee or its employees, agents, contractors, subcontractors, lessees, sublessees, transferees, successors and assigns which contributed to the contamination currently existing on the Property after the date of this Deed, and excludes any actions except those that result from gross negligence

or intentional misconduct by Grantee or its employees, agents, contractors, subcontractors, lessees, sublessees, transferees, successors and assigns, which uncovers, discloses, disturbs, releases or results in the emission, migration or movement of Environmental conditions arising from Grantor's activities or operations on the Property, and such exclusion shall encompass, by way of example, but not by way of limitation, testing of the Property, the drilling, digging or excavation of soil or other disturbance of the surface of the ground, the demolition of structures, construction and redevelopment of the Property, the exercise of any easements and/or Subjacent Rights granted or conveyed in accordance with the terms of this Deed and the Subjacent Construction performed or conducted by, on behalf of or at the direction of Grantee or its employees, agents, contractors, subcontractors, lessees, sublessees, transferees, successors and assigns, provided: (i) such activity does not go beneath the Permitted Depth without obtaining any necessary Subjacent Approvals; (ii) such activity is not in violation of any Institutional Controls on the Property; or (iii) the Grantee immediately notifies the Grantor after gaining actual knowledge of such release or threatened release;

(5) the term "Institutional Controls" shall mean, collectively, (i) specific conditions, restrictions, requirements, controls, reservations and limitations that the Grantor determines, with appropriate input from the Environmental Agencies and the Grantee, are required to ensure the health, welfare and safety of the public or protection of the environment, including historic and cultural properties, and (ii) institutional controls required pursuant to CERCLA, the Resource Conservation and Recovery Act ("RCRA"), the Solid Waste Disposal Act (42 U.S.C. Section 6901 et seq.), the National Contingency Plan ("NCP") or similar state or local laws, all as more particularly set forth in this Deed.

(6) the term "Environmental Agency(ies)" shall mean the EPA, the Commonwealth of Pennsylvania, Department of Environmental Protection ("PADEP") or such other regulatory agency having jurisdiction over the environmental remediation of the Property;

(7) the term "Permitted Depth" shall mean the depth beneath the lower boundary of the Property down to and including a depth of ten (10) feet or such greater depth, as determined by the Grantor in consultation with the appropriate Environmental Agencies, as is reasonably necessary for the re-use of the Property in accordance with the uses set forth and described in Paragraph 5(G) of this Deed;

(8) the term "Subjacent Construction" shall mean construction or other work which will involve excavation, construction, installation or other work or activities under, below, beneath or subjacent to the Property;

(9) the term "Subjacent Construction Approvals" shall mean the approval, consent and concurrence of the Grantor in consultation with the appropriate Environmental Agencies with respect to any intended Subjacent Construction below the

Permitted Depth, which review shall be limited to activities that may adversely affect the remediation of the NAPL Plume or cause an unacceptable risk to human health or the environment and which approval shall not be unreasonably withheld, delayed or conditioned;

(10) the term "Subjacent Rights" shall mean the rights of Grantee, its successors and assigns, and its agents, contractors, subcontractors, employees, invitees and designees of access to and entry in, on, onto, upon, over, across and through, and, to the extent of the Permitted Depth, within the Ground Property (and all portions thereof), for the purposes, in the manner and upon the terms and provisions set forth in this Deed; and

(11) the term "Ground Property" shall mean that portion of the Second EDC Property underlying and/or found subjacent or subterranean to the Property, together with the structures, improvements, roadways, infrastructure and structural support systems, and the appurtenances thereto, all hereditaments and tenements therein and all easements, reservations, reversions, remainders, issues, profits and other rights belonging or related thereto, all mineral rights and all below-ground mains, lines, conduits, facilities, pipes, taps, laterals, systems, appurtenances, components, parts and other items related to the rendering, provision or delivery of all utility services and products (including, but not limited to, electric, gas, water, sanitary sewer, storm sewer and fire suppression) to all or any part of the aforesaid Property.

1. Property Conveyed.

The legal description of the Property has been provided by Grantee and Grantee shall be responsible for the accuracy of the description of the Property conveyed herein. Pursuant to that certain Bill of Sale dated as of even date herewith, the Grantor has transferred to Grantee the personal property more particularly set forth in the Bill of Sale. Proceeds, if any, received by the Grantee from the sale of such personal property will be reinvested in accordance with the terms of the Agreement.

2. Support Easements and Mutual Covenants.

Without in any way limiting, and subject to, the terms and provisions of that certain Declaration of Easements dated the same date as this Deed (which is to be recorded in the Office of the Recorder of Deeds prior to the recordation of this Deed (the "Declaration of Easements")), Grantor does hereby grant to Grantee the following described rights and easements, including but not limited to ingress and egress and for support, maintenance, and operation of any structures, buildings or other improvements of any kind whatsoever, now or at any time and from time to time hereinafter existing in, on or about the Property hereby conveyed:

A. An easement appurtenant to the Property herein conveyed within, over, on, through and across the subjacent air space and soil and the surface of the

Ground Property immediately adjacent to and underlying the Property for vehicular and pedestrian access, ingress and egress to and from the Property and the buildings, structures and improvements thereon, and vehicular parking.

B. Subject to the conditions set forth in Paragraphs 5(H) and 5(K) of this Deed, all necessary or appropriate easements appurtenant to the Property herein conveyed and across, over, through, in, upon, under and within the air space and soil of the Ground Property down to and including the Permitted Depth, to construct, develop, service, operate, maintain, alter, install, modify, repair and replace the structural support system of the buildings, structures or other improvements now or hereafter located on or in the Property and any part thereof in the Ground Property to the extent of the Permitted Depth, which structural support system shall include, but not be limited to, all load-bearing members such as columns, footings, foundations, cross bracings and connections which support the building laterally, subjacent to the building grade, and/or otherwise, including the unlimited right to relocate, modify, repair, replace, shore-up or otherwise reinforce or in any other manner to deal with such structural support system.

C. An easement appurtenant to the Property herein conveyed for the service, operation, maintenance, alteration, installation, modification, repair or replacement of, in whole or in part, or additions to, all those areas set aside in any part of the Ground Property to the extent of the Permitted Depth for the function of mechanical facilities, communication lines, heating, ventilation, air conditioning systems, electrical power systems, plumbing and sewer systems and utility systems, including, but not limited to, all taps, laterals, lines, mains, conduits, facilities, pipes, systems, appurtenances, components, parts and equipment, fire protection systems, fuel systems including gas lines, sanitary sewer and storm sewer, fire suppression, and all other items, equipment and components relating to all or any part of the foregoing found in any part of the Ground Property to the extent of the Permitted Depth.

D. Grantor and Grantee agree that, to the extent rights substantially similar to those described in Paragraphs 2(A) through 2(C) above, inclusive, have been granted to, and then only for so long as such substantially similar rights exist in favor of, Grantee pursuant to a lease or other occupancy or use agreement with respect to the Property, the terms of such lease or other occupancy or use agreement with respect to such rights shall govern.

E. Grantor and Grantee do further mutually covenant and agree to assure Grantee's quiet enjoyment and full use and occupancy of the Property hereby conveyed, as follows:

(1) Grantor and Grantee each acknowledges and agrees that certain portions of the Property (and the existing buildings, structures and improvements thereon) herein conveyed may share a party wall with other existing buildings, structures and improvements that are not part of this conveyance and that

certain portions of the Property (and the existing buildings, structures and improvements thereon) herein conveyed may encroach into the air space of land adjacent to the Property herein conveyed and that certain portions of existing buildings, structures and improvements adjacent to the Property herein conveyed may encroach into the air space of the Property herein conveyed and Grantor and Grantee do hereby each covenant and agree that to the extent that any such existing buildings, structures or improvements currently extend over any boundary line herein described and constitute encroachments into the respective areas and estates owned by Grantor and Grantee, that the other shall suffer the same to continue and exist.

(2) Any buildings, structures or improvements as presently constructed may now or from time to time vary somewhat from the elevations and dimensions above set forth and it is hereby understood and agreed by and between Grantor and Grantee that said elevations and dimensions shall be subject to such variations therein as may exist in connection with any such buildings, structures or improvements as the same are actually constructed.

(3) By execution of this Deed, Grantor and Grantee do further mutually covenant and agree to assure Grantee's quiet enjoyment and full use and occupancy of the Property hereby conveyed, and the Grantee acknowledges receipt and acceptance of this Deed and affirms its agreement to observe the covenants and perform its obligations as set forth herein, which agreement shall be deemed to be a real covenant and shall run with the land and burden the Property hereinabove described.

3. Reserved Easements.

A. The Property is conveyed subject to the easements for the benefit of the owners and collective redevelopment of the entire property that formerly comprised the DSCP, as set forth in the Declaration of Easements.

B. Access Easement for Environmental Activities:

(1) The Grantor and its agents, employees, and contractors shall have access to and over the Property as may be from time to time, and only so long as, necessary, at Grantor's sole cost and expense, to fulfill the Grantor's environmental responsibilities under this Deed or as required for any investigation, response, corrective action or ground water monitoring pursuant to CERCLA, a Record of Decision ("ROD") or amendment thereto, the National Contingency Plan ("NCP"), RCRA, any order between the Grantor and PADEP and/or EPA ("Order"), or any Federal Facility Compliance Agreement ("FFCA") as well as the legal requirements of the Commonwealth such as the Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S.§§ 691.1-691.1001 ("Clean Streams Law"); The Land Recycling and Environmental Remediation Standards Act, Act of May 19, 1996, 35 P.S. 6026.101 et seq. ("Land Recycling Act"); The Storage Tank and Spill Prevention Act, Act of

August 7, 1989, P.L. 1989 No. 32, as amended, 35 P.S. 6021.101 et seq. ("Tank Act"); Section 1917-A of the Administrative Code of 1979, Act of April 9, 1929, P.L. 177, as amended, 71 P.S. § 510-17 ("Administrative Code") and the rules and regulations promulgated pursuant to these Acts (collectively called "Legal Requirements") found to be necessary before or after the date of this Deed on the Property or on other property comprising the DSCP in connection with the existence, release or threatened release of any hazardous substance, hazardous waste, pollutant, contaminant, petroleum or petroleum derivative, including, but not limited to, remediation of the plume of non-aqueous phase hydrocarbon liquid located approximately 18-20 feet below the lower boundary of the Property (the "NAPL Plume") and any monitoring wells on the Property in connection with the remediation and monitoring of the NAPL Plume and the Soil Gas Vapors (as hereinafter defined) (hereinafter collectively referred to as "remediation of DSCP"). In connection with the remediation of the NAPL Plume, the Grantor and its agents, employees, and contractors shall have the right to install and maintain "Protective Equipment" (as such term is defined in the Declaration of Easements) in accordance with and subject to the terms and conditions set forth in the Declaration of Easements. The Grantor, PADEP, and their authorized permittees and representatives shall have access to the Property to fulfill the Legal Requirements. The Grantee shall allow ingress and egress of all equipment necessary to accomplish the same. This reservation includes the right of access to and use of, to the extent permitted by law, any utilities obtained by the Grantor directly from any public or private utility provider at no cost to the Grantee or the then record owner(s) of the Property.

(2) Notification. When it becomes necessary to exercise the easement rights herein reserved to fulfill the Grantor's environmental responsibilities as set forth above, except in case of imminent endangerment to human health or the environment, the Grantor shall consult with Grantee, or the then record owner(s) of the Property, and, as necessary, the appropriate Environmental Agencies, and shall give the Grantee, or the then record owner(s) of the Property at least seventy-two (72) hours prior written notice of actions to be taken in remediation of the Property, excepting for a mutually agreeable schedule for routine operation and maintenance of the existing free phase hydrocarbon recovery system. In the event of an imminent endangerment to human health or the environment, the Grantor shall give the Grantee, or the then record owner(s) of the Property, as much advance notice as possible of any remedial actions it intends to take on the Property. The Grantor shall timely provide the Grantee, or the then record owner(s) of the Property, copies of any ROD, Order, or FFCA, or any amendments to said documents, and any information or other written material regarding or resulting from access to the Property by Grantor, and its agents, employees and contractors.

(3) Avoidance of Interference. Grantor, its agents, employees and contractors, shall use reasonable means, without significant additional cost to the Grantor, to avoid and/or minimize interference with the use of the Property. Subject to the provisions of this Paragraph 3(B) and Paragraph 11 of this Deed, the Grantee, the then record owner(s) of the Property, and any other person shall have no claim against

the Grantor or any officer, agent, employee or contractors thereof solely on account of any such interference resulting from actions taken under this Paragraph 3(B).

(4) Environmental Condition of Property. As of the date of this conveyance, the Grantor has provided the Grantee with an Environmental Baseline Survey dated December 16, 1994, ("EBS") and Finding of Suitability to Transfer ("FOST") for the Property, which, to the Grantor's knowledge and belief, accurately reflects the environmental condition of the Property, as presently known, and its suitability to transfer.

(5) For purposes of this Paragraph 3(B), the Defense Logistics Agency (DLA) and the DSCP shall be deemed to be "agents" of the Grantor.

C. Notwithstanding any other provision of this Deed, the Grantee shall allow third parties under an Order issued by an Environmental Agency or pursuant to a final and unappealable decision of a court of competent jurisdiction to have access to, over, and through the Property, solely related to the remediation of the NAPL Plume, to implement the Legal Requirements in accordance with the Order, provided that such third parties shall be required to enter into a separate access agreement satisfactory to the Grantee or the then record owner(s) of the Property, which access agreement will not impose any costs upon the United States.

4. CERCLA Covenants and Notice.

Pursuant to Section 120(h)(3) of CERCLA:

A. The Grantor hereby notifies the Grantee that based upon a complete search of the Grantor's files (which the Grantor, to the best of its knowledge and belief, represents has been made) regarding the type, quantity and location of such substances, there was no storage, release, or disposal of hazardous substances on the Property in excess of reportable quantities. For the purpose of this Deed, "hazardous substances" shall have the same meaning as section 101 (14) of CERCLA. Based upon the FOST there is no unacceptable risk to human health or the environment and the Grantor has determined that the Property is suitable for transfer in accordance with the provisions of this Deed.

B. The Grantor hereby covenants and warrants that:

(1) all remedial action necessary to protect human health and the environment with respect to any such hazardous substances remaining on the Property has been taken before the date of this Deed; and

(2) any response action or corrective action found to be necessary after the date of this Deed in connection with a release or threatened release of any such hazardous substances remaining on the Property, shall be conducted by the Grantor

except to and limited only by the extent to which such release or threatened release giving rise to such response action or corrective action is caused or contributed to by the activities of the Grantee or any employee, agent, representative, contractor, subcontractor, licensee, lessee, sublessee, invitee, designee, transferee or successor or assign of Grantee. This covenant in this Subparagraph B shall not apply in any case in which the person or entity to whom the Property is transferred is a potentially responsible party under CERCLA with respect to the Property. For purposes of this Subparagraph B, the Grantor hereby covenants that previous tenancy, occupancy or use by the Grantee or any employee, agent, representative, contractor, subcontractor, licensee, lessee, sublessee, invitee, designee, transferee or successor or assign of Grantee of the portion of the Property so leased, occupied, or used by the Grantee or such employee, agent, representative, contractor, subcontractor, licensee, lessee, sublessee, invitee, designee, transferee or successor or assign of Grantee will not cause the Grantee or such employee, agent, representative, contractor, subcontractor, licensee, lessee, sublessee, invitee, designee, transferee or successor or assign of Grantee to be a potentially responsible party under this covenant or under CERCLA solely because or as a result of such tenancy, occupancy or use.

5. Environmental Restrictions and Covenants.

A. The Grantee or any person or entity to whom the Property is transferred shall neither transfer the Property, lease the Property, nor grant any interest, privilege, or license whatsoever in connection with the Property without the inclusion of the environmental protection provisions contained herein, and, subject to the provisions of this Paragraph 5, shall require the inclusion of such environmental protection provisions in all further deeds, transfers, leases, or grants of any interest, privilege, or license.

B. Prior to the determination by the applicable Environmental Agencies that remediation of the DSCP is complete, (i) the Grantee, its successors and assigns, shall not undertake activities on the Property that would significantly interfere with or impede the Grantor's completion of the remediation of the DSCP (provided, however, that Grantee, its successors and assigns, shall have the right, upon written notice to and approval from the Grantor (which approval shall not be unreasonably withheld, delayed or conditioned and shall be granted in good faith) to relocate or reconfigure (at its sole cost and expense) those portions of the existing free-phase hydrocarbon recovery system on the Property as necessary or prudent to facilitate or effectuate the redevelopment of all or any portion of the Property, provided that such relocation or reconfiguration does not significantly increase the cost of operating the existing free-phase hydrocarbon recovery system), and (ii) the Grantee shall comply with any and all Institutional Controls established or put in place by the Grantor relating to the Property as provided for in the Agreement. Any and all Institutional Controls imposed on or with respect to the Property before the date of this Deed are specifically set forth in this Deed. Any Institutional Controls imposed on or with respect to the Property after the date of this Deed for the Property shall be subject to Grantee's prior review. Such

Institutional Controls shall not cause or result in a significant increase in the costs of redeveloping the Property or have a significant material adverse effect on the physical reuse of the Property for the purposes set forth in Paragraph 5(G) of this Deed. Without in any way limiting the generality of the foregoing provisions, in imposing any Institutional Controls, before or after the date of this Deed for the Property, the Grantor shall use reasonable means, without significant, additional cost to the Grantor, to avoid and/or minimize interference with (i) the use of the Property by Grantee or any employee, agent, representative, contractor, subcontractor, licensee, lessee, sublessee, invitee, designee, transferee or successor or assign of the Grantee and their successors and assigns, and (ii) the exercise of any Subjacent Rights or conduct of any Subjacent Construction (including, but not limited to, excavation of soil down to and including the Permitted Depth to permit the redevelopment of the DSCP Property) consistent with the restrictions on the use of the Property expressly set forth in this Deed even though such use, construction or development may be in areas of the Property in proximity to the NAPL Plume. Additionally, the Grantee shall ensure that any leasehold it grants in the Property or any fee interest conveyance of any portion of the Property provides for compliance with the Institutional Controls, and said Institutional Controls shall be binding upon subsequent transferees.

C. For any portion of the Property subject to a response action in accordance with the Legal Requirements prior to the earlier of the conveyance of an interest therein by the Grantee which response action is ongoing at the time of such conveyance, the Grantee shall include in all conveyance documents, provisions allowing for the continued operation of any monitoring wells, treatment facilities, or other response activities on the Property undertaken and conducted by the Grantor pursuant to the Legal Requirements and shall notify the Grantor, PADEP and, as appropriate, EPA, by certified mail, at least fifteen (15) days prior to any such conveyance of an interest in said Property, which notice shall include a description of said provisions allowing for the continued operation of any monitoring wells, treatment facilities, or other response activities undertaken and conducted pursuant to the Legal Requirements upon and subject to the terms and conditions set forth in this Deed.

D. Until such time as remediation of the DSCP is complete, as determined by the appropriate Environmental Agencies, the Grantee and all subsequent transferees of an interest in any portion of the Property, will provide copies of the instrument evidencing a conveyance of any portion of the Property to the Grantor by certified mail, within fourteen (14) days after the effective date of such transaction.

E. The provisions of this Paragraph 5 shall be deemed to run with the land and shall be binding on the Grantee, its successors and assigns, and on all subsequent transferees of the Property. Except as expressly set forth in Paragraph 5(F) herein, the Grantee and all subsequent transferees of the Property shall include the provisions of this Paragraph 5 in all subsequent lease, transfer, or conveyance documents relating to the Property, or any portion thereof, that are entered into prior to a determination by the appropriate Environmental Agencies that remediation of DSCP is complete.

F. To the extent the same involve or relate to the remediation of the NAPL Plume, the obligations of the Grantee set forth in Paragraphs 3(B), 3(C), 5(A), 5(B), 5(C) and 5(D) above shall automatically expire upon the completion of the remediation of the NAPL Plume. To the extent the same involve or relate to the remediation of the NAPL Plume, the rights of the Grantor or DLA/DSCP, including any of their agents, employees and contractors, as set forth in Paragraphs 3(B), 3(C), 5(A), 5(B) and 5(C) above shall automatically expire upon the completion of the remediation of the NAPL Plume. As used in this Deed, the phrase "completion of the remediation of the NAPL Plume" shall be deemed to have occurred when (a) all of the applicable Environmental Agencies (including, but not limited to, PADEP and EPA) issue a written determination that all response actions or corrective actions associated with the remediation of the NAPL Plume and also including, but not limited to, response actions required to be taken by the Grantor or other third parties, have been completed, excepting only that groundwater monitoring required by the applicable Environmental Agencies (including, but not limited to, PADEP and EPA) may continue, and (b) all machinery, equipment and other devices associated with the remediation of the NAPL Plume (including, but not limited to, the existing free phase hydrocarbon recovery system and system related infrastructure) are removed from the Property and all areas affected thereby restored, and all groundwater wells not being used for monitoring purposes as described above are closed by the Grantor and such closure has been approved, in writing, by the appropriate Environmental Agencies (including, but not limited to, PADEP and EPA).

G. Commercial/Industrial Use:

(1) Purposes: The Grantor, acting on behalf of the United States, has undertaken careful environmental study of the Property and concluded that the best and highest use of the Property is currently limited to non-residential uses, such as, by way of example, commercial, office, industrial and retail uses excluding child care. In order to protect human health and the environment and further the common environmental and use plans of the United States, the Commonwealth of Pennsylvania, and the Grantee, the covenants and restrictions set forth herein shall be included to assure the use of the Property is consistent with the environmental condition of the Property. These restrictions and covenants benefit the public generally and are consistent with state and federal environmental statutes.

(2) Restrictions and Covenants: The Grantee covenants for itself, its successors and assigns, to use the Property in perpetuity (except to the extent revised or amended pursuant to Subparagraph (G)(4) below) solely for non-residential uses, such as, by way of example, commercial, office, industrial and retail uses, excluding child care and, subject to Subparagraph (G)(4) below, never to undertake or allow the construction on or usage of the Property for residential or any purpose other than the maintenance and use of non-residential uses, such as, by way of example, commercial, office, industrial and retail uses excluding child care. The Grantee, its successors or assigns will, subject to Subparagraph (G)(4) below, never undertake nor allow any

activity on or use of the Property that may adversely affect or detract from the restrictions contained herein. These restrictions bind and run with the Property and, except to the extent revised or amended pursuant to Subparagraph (G)(4) below, are forever hereinafter enforceable.

(3) Enforcement: The restrictions and covenants benefit the United States, the common redevelopment of the DSCP property, and the buildings and area surrounding the Property, and are enforceable by the United States and other appropriate governmental authorities having jurisdiction thereover as provided for by law. The Grantee covenants for itself, its successors and assigns, that, except to the extent revised or amended pursuant to Subparagraph (G)(4) below, it shall include and otherwise make legally binding these restrictions in all subsequent leases, and transfer or conveyance documents relating to the Property.

(4) Upon consent of the Grantor (which consent shall not be unreasonably withheld, delayed or conditioned), and as appropriate, PADEP or any successor thereto, or other Environmental Agencies, additional uses may be made of the Property upon the Grantor's execution of and recording in the County and City of Philadelphia land records a restrictive covenant revising and amending the provisions of this Paragraph 5. Upon approval as provided for in this Subparagraph (G)(4), the Grantor agrees to execute such revised restrictive covenant in recordable form within a reasonable time, provided that the Grantor shall not be required to expend any funds as a result thereof.

H. Groundwater And Soil Restriction.

The Grantor has identified that the ground or soil below the transferred Property is underlain by the NAPL Plume which is located at a depth of approximately 18 to 20 feet below grade. The Grantor acknowledges and agrees that neither the Grantee nor any employee, agent, representative, contractor, subcontractor, licensee, lessee, sublessee, invitee, designee, transferee or successor or assign of Grantee has, nor shall have, any obligation, liability or responsibility for the NAPL Plume, and neither the Grantee nor any employee, agent, representative, contractor, subcontractor, licensee, lessee, sublessee, invitee, designee, transferee or successor or assign of Grantee is or shall be responsible for any investigation, removal, or remediation of the NAPL Plume provided, however, that this Subparagraph (H) shall not release any successor, assignee, grantee, transferee, lender, employer, agent, lessee or sublessee of Grantee, or any other third party, from liability if found by a court of competent jurisdiction to have contributed to the contamination of the NAPL Plume or other contamination of the Property resulting therefrom. The Grantor agrees to be responsible for the remediation of the NAPL Plume to the extent required by law and/or the Agreement.

Due to the existence of the NAPL Plume, the following encumbrances apply:

(1) Restrictions and Conditions:

The Grantee covenants for itself, its successors and assigns not to:

(a) Access or use ground water underlying the Property for any purpose, other than water sampling and monitoring, until such time as PADEP agrees and certifies in writing ("Certification") that the ground water underlying the Property is suitable for the requested use and such Certification is placed of record in the County and City of Philadelphia land records, at which time said restriction shall automatically terminate. For the purpose of this restriction, "ground water" shall have the same meaning as in section 101(12) of CERCLA.

(b) Until the completion of remediation of the NAPL Plume, conduct any Subjacent Construction (including any subsurface excavation, digging, drilling or other disturbance of the Ground Property) below the Permitted Depth, without obtaining the Subjacent Construction Approvals, except as necessary to respond to an emergency situation where obtaining the Subjacent Construction Approvals in advance is not feasible, in which case the Grantor, PADEP and, as appropriate, EPA shall be notified as soon as practicable.

(c) Undertake nor allow any activity on or use of the Property that would violate the restrictions contained herein to the extent then in effect.

(2) Enforcement: The restrictions and covenants benefit the United States, the common redevelopment of the DSCP property, and the buildings and area surrounding the Property, and are enforceable by the United States and other appropriate governmental authorities having jurisdiction thereover, as provided for by law. The Grantee covenants for itself, its successors, and assigns that, to the extent the same are then in effect, it shall include and otherwise make legally binding these restrictions in all subsequent leases, and transfer or conveyance documents relating to the Property.

I. Restriction Pertaining To Possible Elevated Volatile Organic Compound ("VOC") Levels:

Due to the NAPL Plume, the basement of Buildings 12 and 14 on the Property may be subject to elevated levels of VOCs. In order to prevent the accumulation of VOCs, the Grantor, in consultation with the EPA, and PADEP, has determined that, when the basement of such building(s) is inhabited, it is necessary to operate existing ventilation systems, (consisting of basement level fans in each building,) to discharge air to the outside. The Grantee, its successors and assigns, agrees not to use the crawl space or basement of those buildings unless adequate ventilation is provided to reduce any harmful levels of VOCs at or below occupational

health and safety or other applicable laws or regulations. PADEP has determined that the operation of the existing ventilation systems is necessary to reduce potential threats to human health. The Grantee, its successors and assigns, agrees to maintain and continually operate, except during necessary repair and maintenance, the existing ventilation systems when the basement of such building(s) is inhabited, until such time as PADEP gives their approval in writing, that operation of the ventilation systems is no longer necessary. The Grantor acknowledges and agrees that Grantee's operation of the existing ventilation systems shall not be deemed a component of the DSCP remedial or removal actions.

J. Hazardous Waste Safety Plan:

While the fee interest to the Ground Property is owned by the Grantor, prior to the storage of any hazardous waste, material, or substance, or petroleum or petroleum products (other than the NAPL Plume) on the Property, the Grantee shall prepare and maintain, or cause to be prepared and maintained, a plan, certified by a Professional Engineer, for responding to hazardous waste, petroleum or petroleum products (other than the NAPL Plume) and other chemical spills. The plan shall be submitted to the Grantor for its review and approval, which approval shall not be unreasonably withheld, delayed or conditioned and which shall be deemed approved if no response is provided by Grantor within thirty (30) days of its receipt of such Plan. Such plan shall be independent of the DSCP and shall not rely on Grantor's or DSCP's personnel or equipment. Should the Grantor or DSCP provide any personnel or equipment, because the Grantee was not, in the opinion of the Base Realignment and Closure Environmental Coordinator, conducting timely response actions, the Grantee agrees to reimburse the Grantor or DSCP for its actual reasonable costs so long as Grantor or DSCP provided Grantee an opportunity to provide the personnel or equipment. Upon Grantor's conveyance of the fee interest to the Ground Property, this requirement shall become void.

K. Notice Of The Presence Soil Gas Vapors:

(1) Based on information obtained from a soil gas survey, the Grantor has documented the presence and determined the general location, extent, nature and source of soil gas vapors [primarily methane gas but also including VOC's] ("Soil Gas Vapors") which may accumulate in the sub-surface soils on the Property, including within the Permitted Depth. The Grantor has determined that the source of the Soil Gas Vapors is the biodegradation of the NAPL Plume underlying the Property. While the Grantor has determined that the Property is suitable for its intended purpose for non-residential uses, the Soil Gas Vapors could present a hazardous condition during ground construction activities or within confined subterranean building areas or underground utilities, unless properly managed. The Grantee is advised that certain federal, state and local laws or regulations (including, but not limited to, occupational safety and health regulations regarding monitoring, control and preventive measures) may be applicable during construction and maintenance activity, and, with respect to

construction activity, there may be a need to implement certain design features for buildings on the Property. Accordingly, the Grantee, as its sole obligation with respect to such Soil Gas Vapors, shall ensure that appropriate measures, as required by applicable laws or regulations or common practice, are taken during any construction or maintenance activity on the Property to detect and mitigate, using common and precautionary engineering, construction, or, with respect to construction activity, design measures, any unacceptable levels of Soil Gas Vapors. If any unacceptable levels of Soil Gas Vapors are detected that cannot be controlled using common and precautionary engineering, construction or, with respect to construction activity, design measures, the Grantee shall ensure the cessation of such activities and ensure that the Grantor is promptly notified of these conditions. Upon notification, the Grantor shall promptly notify PADEP, and, in consultation with PADEP and Grantee (or the then current owner(s) of the Property) and any then current tenants or subtenant(s) of the Property who are or could be affected by such unacceptable levels of Soil Gas Vapors, the Grantor shall, in its sole discretion, and at its sole cost and expense, promptly either (i) take any necessary remedial action to reduce the level of Soil Gas Vapors to a level that can be controlled with common and precautionary engineering, construction or, with respect to construction activity, design measures, or (ii) provide for precautionary mitigation measures to protect human health and safety. Any such remedial action or precautionary mitigation measures taken by the Grantor shall be coordinated with any affected Grantee (or the then current owner(s) of the Property) and any then current affected tenants or subtenants of the Property and approved in writing by PADEP, and shall not cause a significant increase in the cost of redeveloping the Property or cause a material adverse affect on the physical re-use of the Property.

(2) Neither the Grantee nor any successor, successor-in-title, assignee, grantee or transferee of Grantee, or any other person or entity that acquires or possesses ownership or control of all or any part of the Property, shall transfer or convey the Property, lease or sublease the Property, or grant any interest, right, privilege or license whatsoever to or in connection with the Property without including the provisions contained in this Paragraph 5(K) verbatim or by express reference. The provisions of this Paragraph 5(K) shall be deemed to run with the land and shall be legally binding on the Grantee, its successors and assigns, and all subsequent grantees or transferees and all persons or entities that at any time hereafter acquire ownership or control of all or any portion of the Property.

6. No Warranties.

Except as otherwise expressly provided for in this Deed or under applicable law or under any provision of the Agreement, (a) the Property is being conveyed "As Is" and "Where Is" without any representations, warranties, or guaranties as to quantity, quality, title, character, condition, size or kind, or that the Property is in a condition or fit to be used for the purpose for which it is intended, and (b) the conveyance will be without any obligation on the part of the Grantor to make any alterations, repairs, or additions to the Property.

7. Notice Of The Presence Of Asbestos And Covenant.

A. The Grantee, its successors and assigns, is hereby informed and does acknowledge that friable and non-friable asbestos or asbestos-containing materials ("ACM") have been found on the following general areas of the Property, as described more fully in the Decision Document for IRP Site 30 of the Former DSCP dated October 3, 2000 for all buildings at the DSCP. The ACM on the Property does not currently pose a threat to human health or the environment, all friable asbestos that posed a risk to human health having either been removed or encapsulated prior to this conveyance.

B. The Grantee covenants and agrees that its use and occupancy of the Property will be in compliance with all applicable laws relating to asbestos or ACM; and that except as set forth herein, the Grantor assumes no liability for future remediation of any asbestos, ACM or damages for personal injury, illness, disability, or death, to the Grantee, its successors or assigns, or to any other person, including members of the general public, arising from or incident to the purchase, transportation, removal, handling, use, disposition, or other activity causing or leading to contact of any kind whatsoever with asbestos or ACM on the Property after the date of conveyance of the Property to the Grantee, whether the Grantee, its successors or assigns, have properly warned or failed to properly warn the individual(s) injured. Notwithstanding anything to the contrary, the Grantee assumes no liability for damages or remediation for personal injury, illness, disability, death or property damage arising from (i) remediation or damages for personal injury, illness, disability or death suffered or incurred by the Grantor, its officers, agents and employees or by any other person, including members of the general public, arising from any exposure of any person to asbestos or ACM on any portion of the Property occurring prior to Grantor's conveyance of the Property to the Grantee pursuant to this Deed (ii) any exposure or failure to comply with any legal requirements applicable to asbestos or ACM on any portion of the Property arising prior to the Grantor's conveyance of the Property to the Grantee pursuant to this Deed, (iii) any asbestos or ACM which was located on the Property at any time prior to the date of the Grantor's transfer of the Property to Grantee but are no longer located thereon at the time of such conveyance to Grantee pursuant to this Deed, or (iv) any disposal of asbestos or ACM by the Grantor prior to the Grantor's conveyance of the Property to the Grantee pursuant to this Deed.

C. The Grantee acknowledges, as of the date of conveyance of the Property to Grantee pursuant to this Deed, that it has had the opportunity to inspect the Property as to its asbestos content and condition and any hazardous or environmental conditions relating thereto prior to accepting the responsibilities imposed upon the Grantee under this Paragraph. The failure of the Grantee to inspect or be fully informed regarding the quantity of asbestos or ACM in the buildings described in the EBS will not in and of itself constitute grounds for any claim or demand against the United States under this Deed. Nothing contained in this Paragraph is intended to

modify the foregoing paragraphs and Grantor acknowledges that Grantee is relying on Grantor's statement set forth above and in the FOST regarding the current status of the friable ACM on the Property.

D. Grantee, its successors and assigns, are hereby informed that unprotected or unregulated exposures to asbestos or ACM in product manufacturing, shipyard, building construction workplaces have been associated with asbestos or ACM-related diseases. Both the Occupational Safety and Health Administration ("OSHA") and the EPA regulate ACM because of the potential hazards associated with exposure to airborne asbestos fibers. Both OSHA and EPA have determined that such exposure increases the risk of asbestos-related diseases, which include certain cancers and which can result in disability or death.

E. Except as set forth above, the Grantee shall bear full responsibility for and discharge the Grantor, its officers, agents and employees, from and against all suits, claims, demands or actions, liabilities, judgments, costs and attorneys' fees arising out of, or in any manner predicated upon, exposure to ACM on any portion of the Property after this conveyance of the Property to the Grantee or any future remediation or abatement of asbestos or the need therefor. The Grantee's responsibility and discharge hereunder shall apply whenever the United States incurs costs or liabilities for actions giving rise to liability under this Paragraph.

8. Notice Of The Presence Of Lead Based Paint.

A. The Property does not contain residential dwellings and is not being transferred for residential purposes. The Grantee, and its successors and assigns, are hereby informed and acknowledge that all of the buildings on the Property, constructed or rehabilitated prior to 1978, are presumed to contain lead-based paint. Grantee, its successors and assigns, are hereby informed that lead from paint, paint chips, and dust can pose health hazards if not managed properly. Every purchaser of any interest in Residential Real Property on which a residential dwelling was built prior to 1978 is notified that such property may present exposure to lead from lead-based paint that may place young children at risk of developing lead poisoning. Lead poisoning in young children may produce permanent neurological damage, including learning disabilities, reduced intelligence quotient, behavioral problems and impaired memory. Lead poisoning also poses a particular risk to pregnant women. The seller of any interest in Residential Real Property is required to provide the buyer with any information on lead-based paint hazards from risk assessments or inspections in the seller's possession and notify the buyer of any known lead-based paint hazards. "Residential Real Property" means any housing constructed prior to 1978, except housing for the elderly (households reserved for and composed of one or more persons 62 years of age or more at the time of initial occupancy) or persons with disabilities (unless any child who is less than 6 years of age resides or is expected to reside in such housing) or any zero-bedroom dwelling.

B. Available information concerning known lead-based paint and/or lead-based paint hazards, the location of lead-based paint and/or lead-based paint hazards, and the condition of painted surfaces is contained in the Environmental Baseline Survey and (for residential properties, if any) the lead-based paint risk assessment, which have been provided to the Grantee. Additionally, the FOST for the Property and the federally-approved pamphlet on lead poisoning prevention have been provided to the Grantee. The Grantee hereby acknowledges receipt of all of the information described in this Paragraph.

C. The Grantee, its successors and assigns, covenants and agrees that they shall not permit the occupancy or use of any buildings or structures located on the Property, which were constructed or rehabilitated prior to 1978, as Residential Real Property without complying with this Paragraph 8,. Notice Of The Presence Of Lead-Based Paint and all applicable federal, state, and local laws and regulations pertaining to lead-based paint and/or lead-based paint hazards. Prior to permitting the occupancy of Residential Real Property, if required by law or regulation, the Grantee, its successors and assigns, at its sole expense, will: (i) inspect for the presence of lead-based paint and/or lead-based paint hazards; (ii) abate and eliminate lead-based paint hazards in accordance with all applicable laws and regulations; and (iii) comply with all applicable notice and disclosure requirements under applicable federal and state law. The Grantee agrees to be responsible for all remediation of lead-based paint or lead-based paint hazards found to be necessary on the Property after conveyance to the Grantee, if used for Residential Real Property.

D. The Grantor assumes no liability for remediation or damages for personal injury, illness, disability, or death, to the Grantee , its successors or assigns, sublessees or to any other person, including members of the general public, arising after the date of this Deed, from or incident to lead-based paint located on the Property. The Grantee further agrees to bear full responsibility for and discharge the Grantor, its officers, agents and employees, from and against all suits, claims, demands or actions, liabilities, judgments, costs and attorneys' fees arising out of, or in any manner predicated upon, remediation, personal injury, death or property damage resulting from, related to, caused by or arising out of, lead-based paint on the Property after conveyance of the Property to Grantee pursuant to this Deed. The Grantee's responsibility and discharge hereunder shall apply whenever the United States of America incurs costs or liabilities for actions giving rise to liability under this Paragraph 8. Notwithstanding anything to the contrary, the Grantee assumes no liability for (i) remediation or damages for personal injury, illness, disability or death suffered or incurred by the Grantor, its officers, agents and employees or by any other person, including members of the general public, arising from any exposure of any person to lead-based paint on any portion of the Property occurring prior to the date of conveyance of the Property to the Grantee pursuant to this Deed, or (ii) any failure of the Grantor to comply with any legal requirements applicable to lead-based paint conditions on any portion of the Property prior to the Grantor's conveyance of such portion of the Property to the Grantee pursuant to this Deed, or (iii) any lead-based

paint or lead-based paint hazards which were located on the Property at any time prior to the date of the Grantor's conveyance of the Property to the Grantee pursuant to this Deed, but are no longer located thereon at the time of such conveyance to Grantee pursuant to this Deed, or (iv) any disposal, prior to the Grantor's conveyance of the Property to Grantee pursuant to this Deed, of any lead-based paint or materials contaminated by lead-based paint.

E. The covenants, restrictions, and requirements of this Paragraph 8 shall be binding upon the Grantee, its successors and assigns, and shall be deemed to run with the land.

9. Preservation Covenant For Property.

A. The Grantor and the Grantee hereby acknowledge that certain existing buildings on the Property are eligible for listing in the National Register of Historic Places. In consideration of the conveyance of the Property, the Grantee hereby covenants on behalf of itself, its successors and assigns, at all times to the Pennsylvania State Historic Preservation Officer ("SHPO") to preserve and maintain such eligible buildings on the Property in accordance with the recommended approaches in the Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings (U. S. Department of the Interior, National Park Service 1992) (the "Standards") or design guidelines approved by the SHPO in order to preserve and maintain those qualities that make such eligible buildings on the Property eligible for inclusion in the National Register of Historic Places, as more particularly set forth in that certain Programmatic Agreement entered into between the Grantor, the SHPO and the Advisory Council on Historic Preservation ("Council") executed on August 4, 1998, as amended (the "SHPO Programmatic Agreement"). If the Grantee desires to deviate from the Standards or SHPO approved design guidelines, the Grantee will notify and consult with the SHPO in accordance with Paragraphs 9(B), (C) and (D) of this Deed.

B. The Grantee will notify the SHPO in writing prior to undertaking any construction, alteration, remodeling, demolition, or other modifications to the eligible buildings on the Property that would affect the integrity or appearance of the DSCP Historic District, Philadelphia, Pennsylvania ("District"), with the exception of those activities listed in Paragraph 9(C) of this Deed. Such notice shall describe in reasonable detail the proposed undertaking and its effect on the integrity of the District.

C. The following activities have limited potential to affect the Property within the District and may be implemented without further review by the SHPO or the Council when they are limited solely to the following:

(1) Interior:
   (a) Plumbing rehabilitation and replacement, including pipes and fixtures;
   (b) Heating system rehabilitation and replacement, including furnaces,

pipes, radiators or other heating units;

(c) Electrical wiring, including wiring and receptacles;

(d) Restroom improvements for handicapped access, provided that the work is contained within an existing restroom;

(e) Interior treatments (floors, walls, ceilings, woodwork), provided the work is limited to painting, refinishing, repapering or laying carpet or other suitable flooring material. Construction of temporary walls (timber or steel framed with drywall finish) is permitted. No removal of existing interior doors, permanent interior walls, floors, or support columns, original to the period of significance, will be permitted;

(f) Insulation, provided it is restricted to ceilings and attic spaces; and

(g) Building code compliance.

(2) Exterior:

(a) Caulking, weatherstripping, reglazing;

(b) Sidewalk and curbing replacement;

(c) Gutters and downspout replacement;

(d) Roof repair or replacement which uses in-kind materials and does not alter the pitch of the original roof;

(e) Storm windows, provided they conform to the original shape and size of the historic windows and that the meeting rail coincides with that of the existing sash. Color should match existing windows and trim;

(f) Clean and seal treatments which do not include sand blasting or the use of chemicals which have not been approved for use by the SHPO; and

(g) In-kind replacement is understood to mean that the new features or replacement items will duplicate the material, dimensions and detailing of the original. No removal of existing exterior doors, enlarging or filling in of door and window openings, or removal of permanent exterior walls, original to the period of significance, will be permitted. In-kind replacements apply to but are not limited to:

(1) Porches and loading platforms such as stairs, railings, posts and columns, brackets, cornices, and flooring;

(2) Roofs;

(3) Siding;

(4) Exterior architectural details and feature, including but not limited to brickwork, lintels, and trim;

(5) Windows, includes both trim and the sash; and

(6) Doors.

D. Within thirty (30) calendar days following receipt of notification provided by the Grantee pursuant to Paragraph 9(B) of this Deed, the SHPO will respond to the Grantee in writing as follows:

(1) Notify the Grantee that the proposed project meets the Standards or approved design guidelines and may proceed; or

(2) Notify the Grantee that the proposed project does not meet the Standards or approved design guidelines or would otherwise adversely affect the District and will require further consultation with the SHPO to explore alternatives before the Grantee can proceed with the proposed undertaking.

If the SHPO fails to respond to the Grantee's written notice as described in Paragraph 9(B) of this Deed within thirty (30) calendar days of the SHPO's receipt of the same, then the Grantee may proceed with the proposed undertaking without further consultation with the SHPO.

E. If the response provided to the Grantee by the SHPO pursuant to Paragraph 9(D) of this Deed requires consultation with the SHPO, both parties will consult in good faith to explore alternatives that will minimize, mitigate or avoid adverse effects to the District by adhering to a mutually agreeable treatment/mitigation plan that the Grantee will implement. If the parties are unable to arrive at such mutually agreeable treatment/mitigation plans, the Grantee shall request the recommendations of the Council. Within thirty (30) calendar days following receipt of pertinent documentation, the Council will provide the Grantee with recommendations to mitigate, minimize or avoid adverse effects to the District. The Grantee shall advise the SHPO and Council how it intends to respond to the Council's recommendations prior to initiating project activities.

Pursuant to this covenant, any treatment/mitigation plans to which the Grantee and the SHPO or Council, as appropriate, agree shall be carried out solely at the expense of the Grantee.

F. The SHPO shall be permitted at all reasonable times, upon reasonable advance notice to Grantee or the then record owner(s) of the Property, to inspect the Property to ascertain its condition and to fulfill its responsibilities hereunder.

G. In the event of a violation of this covenant, and in addition to any remedy now or hereafter provided by law, the SHPO may, following reasonable notice to the Grantee or the then record owner(s) of the Property, institute suit to enjoin said violation or to require the rehabilitation or maintenance of contributing buildings within the District. The successful party shall be entitled to recover all costs or expenses incurred in connection with such a suit, including all court costs and attorneys fees.

H. In the event the Property is substantially destroyed by fire or other casualty, or if not totally destroyed, the damage thereto is so serious that preservation and rehabilitation would be economically prohibitive in the reasonable judgment of the Grantee, as concurred in by the SHPO, this covenant shall be terminated for the Property on the date the Grantee obtains the SHPO's concurrence. Upon such termination, the Grantee shall deliver a duly executed and acknowledged notice of such termination to the SHPO, and record a duplicate original of said notice in the Office of the Recorder of Deeds of Philadelphia County. Such notice shall be conclusive

evidence in favor of every person dealing with the Property as to the facts set forth therein.

I. The Grantee agrees that the SHPO may at its discretion, without prior notice to the Grantee, convey and assign all or part of its rights and responsibilities contained herein to a third party.

J. Subject to the provisions of Paragraph 9(H) of this Deed, this covenant is binding on the Grantee, its successors and assigns, in perpetuity, unless explicitly waived by the SHPO. Restrictions, stipulations, and covenants contained herein shall be inserted by the Grantee verbatim or by express reference in any deed or other legal instrument by which it divests itself of either the fee simple title or any other lesser estate in the Property, or any part thereof.

K. The failure of the SHPO to exercise any right or remedy granted under this Deed shall not have the effect of waiving or limiting the exercise of any other right or remedy or the use of such right or remedy at any other time.

L. This covenant shall be a binding servitude upon the Property, and shall be deemed to run with the land. Execution of this covenant shall constitute conclusive evidence that the Grantee agrees to be bound by the foregoing conditions and restrictions and to perform the obligations herein set forth.

M. The Grantor or DLA reserves the right to access (interior and exterior of the building), to remove and restore, at its sole cost and expense, the stone Quartermaster Emblem located on Building 12 located on the Property, provided that the Grantor or DLA repairs any damage caused by such removal and restores the facade of Building 12 to a condition and appearance in accordance with the SHPO Programmatic Agreement, the approval of the SHPO and the reasonable approval of the Grantee, which restoration, at a minimum, shall be architecturally consistent and compatible with and conform to the remaining portions of Building 12.

N. The Grantor or DLA reserves the right of access to install the Interpretive Exhibit (as defined and described in the SHPO Programmatic Agreement) in accordance with the terms of the SHPO Programmatic Agreement.

10. Notice of Non-Discrimination.

With respect to activities related to the Property, the Grantee shall not discriminate against any person or persons or exclude them from participation in the Grantee's operations, programs or activities conducted on the Property, because of race, color, religion, sex, age, handicap, or national origin.

11. Statutory Indemnification of Grantee.

A. The Grantor recognizes and agrees, as set forth in Section 330 of Public Law 102-484, as amended, to hold harmless, defend, and indemnify in full Grantee and its employees, agents, contractors, subcontractors, lessees, sublessees, transferees, successors and assigns from and against any suit, claim, demand or administrative or judicial action, liability, judgment, cost or other fee arising out of any claim for personal injury or property damage (including death, illness, or loss of or damage to property or economic loss) that results from, or is in any manner predicated upon, the release or threatened release of any hazardous substance, pollutant or contaminant, or petroleum or petroleum derivative (including but not limited to the NAPL Plume) as a result of the Grantor's activities or operations on the Property.

B. The indemnification set forth in Paragraph 11(A) is reduced only to the extent there is a release or threatened release which Grantee, its employees, agents, contractors, subcontractors, lessees, sublessees, transferees, successors and assigns caused or contributed to (as such phrase is defined in this Deed).

12. No Reverter.

Notwithstanding any other provision of this Deed, Grantor acknowledges that none of the conditions, restrictions, covenants, easements, reservations, or other provisions in this Deed that impose obligations upon Grantee, its transferees, successors and assigns, shall create any possibility of "reverter" of or other divestiture or forfeiture of title, interest or estate in or to the Property in the event Grantee or any employee, agent, contractor, subcontractor, lessee, sublessee, transferee, successor or assign of Grantee or its or their successors and assigns fails to comply with such obligations, but shall give rise only to such causes of action that exist at law or in equity without affecting the title, interest and estate granted herein from Grantor to Grantee and Grantee's transferees, successors and assigns (and to the heirs, successors and assigns of such transferees, successors and assigns, in perpetuity).

13. Anti-Deficiency Act.

The Grantor's obligation to pay or reimburse any money under this Deed is subject to the availability of appropriated funds, and nothing in this Deed shall be interpreted to require obligations or payments by the United States in violation of the Anti-Deficiency Act, 31 USC 1341; provided that the Grantor shall otherwise comply with all applicable statutory requirements and its obligations under the terms of this Deed.

14. Continuing Obligation.

To the extent required by and pursuant to the terms of this Deed, Grantee agrees to include the terms, covenants, promises, obligations, undertakings, limitations

and restrictions contained in this Deed in all subsequent documents or instruments by which Grantee conveys or transfers ownership or control of all or any portion of the Property. The Grantor acknowledges that PAID, as Grantee hereunder, intends to be, and such subsequent documents and instruments shall provide that PAID, as the Grantee, shall be, released, relieved and discharged of all liability, responsibility and obligation of any kind with respect to the covenants, obligations, promises, undertakings, limitations and restrictions in this Deed except and then only to the extent caused by PAID or its employees, agents, contractors, subcontractors, lessees or sublessees during PAID's ownership of the Property (or portion thereof) so conveyed or transferred. However, PAID's obligation to comply with and observe such terms, covenants, promises, obligations, undertakings, limitations and restrictions during PAID's period of ownership of the Property (or portion thereof) shall not be conditioned upon PAID's obtaining such a release in subsequent documents and instruments conveying or transferring ownership or control of all or any portion of the Property.

END OF TEXT

IN WITNESS WHEREOF, the Grantor has caused this Deed to be executed in its name by the Acting Deputy Assistant Secretary of the Army (I&H), and the seal of the Department of the Army to be hereunto affixed as of the 3rd day of October 2001.

UNITED STATES OF AMERICA

By: [redacted]

Acting Deputy Assistant Secretary of the Army
(Installations and Housing)
OASA(I&E)

Signed and sealed and delivered
in the presence of:

Witness: [redacted]

Witness [redacted]

COMMONWEALTH OF VIRGINIA)
COUNTY OF ARLINGTON) ss:

I, the undersigned, a Notary Public in and for the Commonwealth of Virginia; County of Arlington, whose commission as such expires on the 30th day of November 2001 do hereby certify that this day personally appeared before me in the Commonwealth of Virginia, County of Arlington, Joseph W. Whitaker, Acting Deputy Assistant Secretary of the Army (I&H), whose name is signed to the foregoing instrument and who acknowledged the foregoing instrument to be his free act and deed, dated this 3rd day of October 2001, and acknowledged the same for and on behalf of the UNITED STATES OF AMERICA.

[redacted]

Notary Public

ACCEPTANCE: The Philadelphia Authority For Industrial Development, does hereby accept and approve this Quitclaim Deed and agrees to all of the terms and conditions thereof as of the 9th day of October 2001.

THE PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT

BY: [redacted]
[redacted] Chairman

COMMONWEALTH OF PENNSYLVANIA)
COUNTY OF PHILADELPHIA) ss

I, the undersigned, a Notary Public in and for the Commonwealth of Pennsylvania, County of Philadelphia, whose commission as such expires on the 2nd day of April 2005, do hereby certify that this day personally appeared before me in the Commonwealth of Pennsylvania, County of Philadelphia, James McManus, whose name is signed to the foregoing instrument and acknowledged the foregoing instrument to be his free act and deed, dated this ___ day of _____ 2001, and acknowledged the same for and on behalf of the Philadelphia Authority For Industrial Development

[redacted]
Notary Public

NOTARIAL SEAL
[redacted] Notary Public
City of Philadelphia, Phila. County
My Commission Expires April 2, 2005

EXHIBIT A

DESCRIPTION OF EAST PARCEL OF DEFENSE SUPPLY CENTER
DESCRIPTION OF AERIAL RIGHTS

Parcel "A"

All that certain lot or piece of ground, lying above a horizontal plane 17 feet above City of Philadelphia Datum, situate in the 26th Ward of the City of Philadelphia and described according to a Survey and Plan of Property made by James P. Vesey, Surveyor and Regulator of the Second Survey District, on June 5, 2000, as follows:

Beginning at a point, lying above a horizontal plane 17 feet above City Of Philadelphia Datum, on the Northwesterly side of 20th Street (70' wide), at the distance of 346.000' Southwestwardly from the Southwesterly side of Oregon Avenue (120' wide); Thence extending along the Northwesterly side of said 20th Street, S. 15° 00' 00" W., the distance of 423.090' to a point; Thence extending N. 75° 00' 00" W., the distance of 31.740' to a point; Thence extending N. 15° 00' 00" E., the distance of 5.430' to a point; Thence extending N. 75° 00' 00" W., the distance of 287.600' to a point; Thence extending, partly along the Northwesterly Terminus of a proposed 25' wide easement for sanitary and stormwater purposes which extends Southeastwardly to the Northwesterly side of said 20th Street, S. 15° 00' 00" W., the distance of 478.000' to a point; Thence extending, partly along the Northeasterly Terminus of a proposed 25' wide easement for sanitary and stormwater purposes which extends Southwestwardly to a proposed 25' wide easement for sanitary and stormwater purposes which extends Southeastwardly to a dead end and Southwestwardly to a proposed variable width easement which extends Northeastwardly and Northwestwardly to a property line, N. 75° 00' 00" W., the distance of 688.076' to a point; Thence extending N. 15° 00' 00 ' E. the distance of 1241.660' to a point on the Southwesterly side of said Oregon Avenue; Thence extending along the Southwesterly side of said Oregon Avenue, S. 75° 00'00" E., the distance of 680.093' to a point; Thence extending S. 15° 00' 00" W., the distance of 346.000' to a point; Thence extending S. 75° 00'00" E., the distance of 327.318' to a point on the said Northwesterly side of said 20th Street, being the first mentioned point and place of beginning.

Containing in Area 985,143 Sq. Ft. or 22.61577 Acres.

[redacted]
Surveyor and Regulator
Second Survey District

August 29, 2001

DESCRIPTION OF A CUBE OF SPACE IN THE EAST PARCEL OF THE DEFENSE SUPPLY CENTER

Parcel "B"

ALL THAT CERTAIN interior lot or piece of ground limited in vertical dimension, the upper limit thereof being a horizontal plane at elevation 44.47 feet above City Of Philadelphia Datum and the lower limit thereof being a horizontal plane at elevation 30.02 feet above City Of Philadelphia Datum Situate, in the 26th Ward of the City Of Philadelphia and described according to a Survey and Plan of Property made by James P. Vesey, Surveyor and Regulator of the Second Survey District on June 5, 2000, as follows:

Beginning at an interior point said point being the six following courses and distances from the point of intersection of the Northwesterly side of 20th Street (70' wide) and the Southwesterly side of Oregon Avenue (120' wide):

1. Along the Northwesterly side of said 20th Street S. 15° 00' 00" W., the distance of 769.09'
2. N. 75° 00' 00" W. the distance of 31.74'
3. N. 15° 00' 00" E. the distance of 5.43'
4. N. 75° 00' 00" W. the distance of 287.60'
5. S. 15° 00' 00" W. the distance of 478.00'
6. N. 75° 00' 00" W. the distance of 402.96' to the interior point of beginning;

Thence extending S. 15° 00' 00" W., the distance of 20.07' to a point; Thence extending N. 75° 00' 00" W., the distance of 19.95' to a point; Thence extending N. 15° 00' 00" E., the distance of 20.07' to a point; Thence extending S. 75° 00' 00" E., the distance of 19.95' to the first mentioned interior point and place of beginning

Containing in Area 400.3 Sq. Ft. or 0.00919 Acre

[redacted]
Surveyor and Regulator
Second Survey District

50p2000b
block #18

DESCRIPTION OF BUILDING #30 OF DEFENSE SUPPLY CENTER
DESCRIPTION OF AERIAL RIGHTS

Parcel "C"

All that certain lot or piece of ground with buildings and improvements thereon erected, lying above a horizontal plane 15 feet above City of Philadelphia Datum, situate in the 26th Ward of The City of Philadelphia and described according to a Survey and Plan of Property made by James P. Vesey, Surveyor and Regulator of the Second Survey District on August 29, 2000, as follows:

Beginning at an interior point, lying above a horizontal plane 15 feet above City Of Philadelphia Datum, the following two courses and distances from the point of intersection of the Northwesterly side of 20th Street (70' wide) and the Southwesterly side of Oregon Avenue (120' wide):

1. S. 15° 00' 00" W., along the Northwesterly side of said 20th St. the distance of 1590.00' to a point on the Northeasterly right-of-way Line of the Delaware River Port Authority.
2. N. 75° 00' 00" W, along the Northeasterly right-of-way Line of The Delaware River Port Authority, the distance of 1170.65' to the interior point of beginning.

Thence extending along the said Northeasterly right-of-way Line of The Delaware River Port Authority the following two (2) courses and distances; (1) N. 75° 00' 00" W., the distance of 437.34' to a point; (2) N. 72° 30' 00" W. the distance of 11.16' to a point; **Thence extending** N. 15° 00' 00" E., the distance of 347.85' to a point; **Thence extending** S. 75° 00' 00" E., the distance of 448.49' to a point; **Thence extending**, S. 15° 00' 00" W., partly passing through a wall and partly crossing a proposed variable width easement for sanitary and stormwater purposes (which extends Westwardly to a dead end and Eastwardly and Southeastwardly to the Southwesterly terminus of a proposed 25' wide easement for sanitary and stormwater purposes which extends Northeastwardly and Southeastwardly), the distance of 348.34' to the first mentioned interior point and place of beginning.

Containing in Area 156,221 Sq. Ft. or 3.5863 Acres

[redacted]
Surveyor and Regulator
Second Survey District

Certificate of Address:

I certify that the precise street address of the grantee in the foregoing is as follows:

Philadelphia Authority for Industrial Development
2600 Centre Square West
1500 Market Street
Philadelphia, Pennsylvania 19102

Signed on behalf of the Grantee:

[redacted]

Print Name: [redacted]

Quitclaim Deed, Building 9 Air Rights (see p. 7, ¶ 5. B.)

QUITCLAIM DEED (4)

WHEREAS, pursuant to the Defense Base Closure and Realignment Act of 1990, Public Law 101-510, as amended ("BRAC law"), the military installation at Defense Supply Center Philadelphia, ("DSCP") County of Philadelphia, Commonwealth of Pennsylvania, formerly called Defense Personnel Support Center until January 13, 1998, was determined surplus by the Army on March 30,1995; and

WHEREAS, the City of Philadelphia, acting by and through the Philadelphia Authority For Industrial Development ("PAID") was granted the authority to oversee and implement the civilian reuse of DSCP in accordance with a local-approved reuse plan; and

WHEREAS, PAID, a Local Reuse Authority, made application for an Economic Development Conveyance ("EDC") for the purchase of a portion of DSCP including two buildings, Buildings 9 and 13; the 12.86 acre, more or less, parcel of land underlying said buildings; and a 4-acre parking lot parcel (collectively the "First EDC Property"); and

WHEREAS, the Army, as authorized by the BRAC law and implementing regulations, has determined that the application meets the criteria for conveyance to assist economic redevelopment and job creation and has accepted PAID's application and made a final disposal decision with regard to the First EDC Property; and

WHEREAS, the Army and PAID have entered into a Memorandum of Agreement ("MOA"), dated May 22, 1997, establishing the terms and conditions for an EDC conveyance of the First EDC Property to PAID and the lease of a portion of the First EDC Property to PAID pending and in furtherance of the conveyance of the First EDC Property; and

WHEREAS, the MOA provides for the conveyance of the First EDC Property in phases as Army mission requirements cease and environmental remediation is completed, with Building 9, Building 13, the 12.86 acre parcel underlying said buildings, and a 4 acre parking lot parcel conveyed separately; and

WHEREAS, in accordance with the MOA, dated on May 22, 1997 the Army leased to PAID the First EDC Property, with the exception of the parking lot parcel and certain portions of Building 9, (the "Lease"), giving PAID possession and control of said portion of the First EDC Property as of the date of the Lease; and

WHEREAS, pursuant to Public Law 101-510, as amended, the Army has the authority to convey and with this Deed conveys to PAID, pursuant to the terms and conditions of the MOA, the air rights as described in Exhibit A and all of the improvements contained therein; located in the County of Philadelphia, Commonwealth of Pennsylvania, at DSCP.

NOW THEREFORE,

KNOW ALL MEN BY THESE PRESENTS that the UNITED STATES OF AMERICA (the "Grantor"), acting by and through the Deputy Assistant Secretary of the Army (I&H) pursuant to a delegation of authority from the SECRETARY OF THE ARMY (the "Army"), under and pursuant to the BRAC law, in consideration of ONE DOLLAR ($1.00) cash in hand paid, the receipt of which is hereby acknowledged, and other good and valuable consideration as provided for in the MOA between the parties, does hereby convey, grant, remise, release, and forever quitclaim unto the PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT (the "Grantee"), a body corporate, and politic, and existing under the laws of the Commonwealth of Pennsylvania ("Commonwealth") having its principal place of business at 2600 Centre Square West, 1500 Market Street, Philadelphia, PA 19102 and its successors and assigns, all its right, title, and interest in and to a portion of the First EDC Property, located in the County of Philadelphia, Commonwealth of Pennsylvania, at DSCP, more particularly described in Exhibit A, attached hereto and made a part hereof (hereinafter called the "Property").

The words "Grantor" and "Grantee" used herein shall be construed as if they read "Grantors" and "Grantees" respectively, whenever the sense of this Deed so requires and, whether singular or plural, such words shall be deemed to include in all cases the successors and assigns of the respective parties.

1. Property Conveyed

The Property includes the air rights as described in Exhibit A and all of the improvements contained therein (including Building No. 9) together with all hereditaments and tenements therein and all easements, reversions, remainders, issues, profits, and other rights belonging or related thereto; except that the existing free-phase hydrocarbon recovery system on the Property for the NAPL Plume (as hereinafter defined) is not conveyed herewith.

The legal description of the Property has been provided by PAID and PAID shall be responsible for the accuracy of the description of the Property conveyed herein.

All of the related personal property ("Personal Property") listed in Exhibit B, will be transferred to Grantee pursuant to that certain Bill of Sale dated as of even date herewith.

2. Support Easements and Mutual Covenants

Without in any way limiting, and subject to, the terms and provisions of that certain Declaration of Easements dated the same date as this Deed (which is to be recorded in the Office of the Recorder of Deeds prior to the recordation of this Deed) (the "Declaration of Easements"), Grantor does hereby grant to Grantee the following described rights and easements, including but not limited to ingress and egress and for

support, maintenance, and operation of any structures, buildings or other improvements of any kind whatsoever, now or at any time and from time to time hereinafter existing in, or about the Property hereby conveyed:

A. An easement appurtenant to the Property herein conveyed within the subjacent air space and the surface of the ground underlying the Property for ingress and egress from the building.

B. Subject to the conditions set forth in Paragraphs 5.C(1) and 9 of this Deed, all necessary or appropriate easements appurtenant to the Property herein conveyed and across, over, through, in, upon, under and within the air space and soil of the ground underlying the Property down to and including the Permitted Depth, to construct, develop, service, operate, maintain, alter, install, modify, repair and replace the structural support system of the buildings, structures or other improvements now or hereafter located on or in the Property and any part thereof in the ground underlying the Property to the extent of the Permitted Depth, which structural support system shall include, but not be limited to, all load-bearing members such as columns, footings, foundations, cross bracings and connections which support the building laterally, subjacent to the building grade, and/or otherwise, including the unlimited right to relocate, modify, repair, replace, shore-up or otherwise reinforce or in any other manner to deal with such structural support system. For the purposes of this Deed the term "Permitted Depth" shall mean the depth beneath the surface of the land surrounding the Property down to and including a depth of ten (10) feet or such greater depth, as determined by the Grantor in consultation with the appropriate environmental agencies having jurisdiction (including, but not limited to, the U.S. Environmental Protection Agency ("EPA") and/or Pennsylvania Department of Environmental Protection ("PADEP"), as such terms are hereinafter defined), as is reasonably necessary for the re-use of the Property in accordance with the uses set forth and described in Paragraph 5(B) of this Deed;

C. An easement appurtenant to the Property herein conveyed for the service, operation, maintenance, alteration, installation, modification, repair or replacement of, in whole or in part, or additions to, all those areas in any part of the ground underlying the Property set aside for the function of mechanical facilities, communication lines, heating, ventilation, air conditioning systems, electrical power systems, plumbing and sewer systems and utility systems, including, but not limited to, all taps, laterals, lines, mains, conduits, facilities, pipes, systems, appurtenances, components, parts and equipment, fire protection systems, fuel systems including gas lines, sanitary sewer and storm sewer, fire suppression, and all other items, equipment and components relating to all or any part of the foregoing found in any part of the ground underlying the Property.

D. Grantor and Grantee agree that, to the extent rights substantially similar to those described in Paragraphs 2(A) through (C) above, inclusive, have been granted to, and then only for so long as such substantially similar rights exist in favor of, Grantee pursuant to a lease or other occupancy or use agreement with respect to the Property,

the terms of such lease or other occupancy or use agreement with respect to such rights shall govern.

E. Grantor and Grantee do further mutually covenant and agree to assure Grantee's quiet enjoyment and full use and occupancy of the Property hereby conveyed, as follows:

(1) Grantor and Grantee each acknowledges and agrees that certain portions of the building herein conveyed share a party wall with other improvements that are not part of this conveyance and that certain portions of the building herein conveyed encroach into the air space of land adjacent to the Property herein conveyed and that certain portions of buildings adjacent to the Property herein conveyed encroach into the air space of the Property herein conveyed and Grantor and Grantee do hereby each covenant and agree that to the extent that any such buildings, structures or improvements extend over any boundary line herein described and constitute encroachments into the respective areas and estates owned by Grantor and Grantee, that the other shall suffer the same to continue and exist.

(2) Any buildings, structures or improvements as actually constructed now or from time to time may vary somewhat from the elevations and dimensions above set forth and it is hereby understood and agreed by and between Grantor and Grantee that said elevations and dimensions shall be subject to such variations therein as may exist in connection with any such buildings, structures or improvements as the same shall actually be constructed.

(3) By execution of this Deed the Grantee acknowledges receipt and acceptance of this Deed and affirms its agreement to observe the covenants and perform its obligations as set forth herein, which agreement shall be deemed to be a real covenant and shall run with the Property and burden the subjacent air space and land hereinabove described.

3. Reserved Easements

A. The Property is conveyed subject to the easements for the benefit of the owners and collective redevelopment of the entire property that formerly comprised DSCP, as set forth in the Declaration of Easements.

B. Access Easement for Environmental Activities: The Grantor and its agents, employees, and contractors shall have access to and over the Property, from time to time, and only so long as may be necessary, to fulfill the Grantor's environmental responsibilities under this Deed or as necessary for any investigation, response, corrective action or ground water monitoring pursuant to CERCLA, a Record of Decision ("ROD") or amendment thereto, the National Contingency Plan ("NCP"), Resource Conservation and Recovery Act ("RCRA"), any order between the Grantor, and the PADEP and/or the EPA, or any Federal Facility Compliance Agreement ("FFCA") as well as the legal requirements of the Commonwealth such as Clean

Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S.§§ 691.1-691.1001 ("Clean Streams Law"); The Land Recycling and Environmental Remediation Standards Act, Act of May 19, 1996, 35 P.S. 6026.101 et seq. ("Land Recycling Act"); The Storage Tank and Spill Prevention Act, Act of August 7, 1989, P.L. 1989 No. 32, as amended, 35 P.S. 6021.101 et seq. ("Tank Act"); Section 1917-A of the Administrative Code of 1979, Act of April 9, 1929, P.L. 177, as amended, 71 P.S. § 510-17 ("Administrative Code") and the rules and regulations promulgated pursuant to these Acts (collectively called "Legal Requirements") with respect to the remediation of the Property and the NAPL Plume (as hereinafter defined) underneath the Property found to be necessary before or after the date of this Deed (hereinafter collectively referred to as "remediation of DSCP") and the Grantor shall notify the Grantee when it becomes necessary to exercise the easement rights herein reserved to fulfill the Grantor's environmental responsibilities. The Grantor, PADEP, and their authorized permittees and representatives shall have access to the Property to fulfill the Legal Requirements. The Grantee shall allow ingress and egress of all equipment necessary to accomplish the same. The Grantor shall provide the Grantee copies of any ROD, Order, or FFCA, or any amendments to said documents. This reservation includes the right of access to and use of, to the extent permitted by law, any available utilities at actual cost. In exercising the rights hereunder, except in case of imminent endangerment to human health or the environment, the Grantor shall give the Grantee, or the then record owner at least thirty (30) days prior written notice of actions to be taken in remediation of the DSCP and shall use reasonable means without significant additional cost to the Government to avoid and/or minimize interference with the use of the Property. Grantee agrees that notwithstanding any other provisions of this Deed, the United States assumes no liability to the Grantee, the then record owner or any other person, should remediation of the DSCP interfere with the Grantee's use of the Property, provided however that (1) the Grantor shall use its best efforts, without significant additional cost to the United States, to avoid significantly interfering with the use of the Property; and (2) if feasible, in the event of an imminent endangerment to human health or the environment, the Grantor shall provide seventy-two (72) hours advance notice of any remedial actions it intends to take on the Property. Subject to the provisions of this Section 3B, the Grantee, the then record owner, and any other person shall have no claim solely on account of any such interference resulting from actions taken under this Section 3B against the United States or any officer, agent, employee or contractors thereof. As of the date of this conveyance, the Grantor has provided the Grantee with an Environmental Baseline Survey ("EBS") and Finding of Suitability to Transfer ("FOST"), which, to the Grantor's knowledge and belief, accurately reflects the environmental condition of the Property, as presently known.

C. Notwithstanding any other provision of this Deed, the Grantee shall allow third parties under an Order with the United States and regulatory authorities to have access to, over, and through the Property, solely related to the remediation of the NAPL Plume, to implement the Legal Requirements in accordance with the Order, provided that such third parties shall be required to enter into a separate access agreement satisfactory to the Grantee, which access agreement will not impose any costs upon the United States.

D. Agents of Grantor. Solely for purposes of this Paragraph 3, the Defense Logistics Agency ("DLA") and DSCP shall be deemed to be "agents" of the Grantor.

4. CERCLA Covenants and Notice

Pursuant to Sections 120(h)(3) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. § 9601 et seq. ("CERCLA"):

A. The Grantor hereby notifies the Grantee that there was no storage, release, and disposal of hazardous substances on the Property in excess of reportable quantities. For the purpose of this Deed, "hazardous substances" shall have the same meaning as section 101(14) of CERCLA. Based upon the FOST, the information regarding this storage, release, and disposal indicates that there is no unacceptable risk to human health or the environment.

B. The Grantor hereby covenants that:

(1) all remedial action necessary to protect human health and the environment with respect to any such hazardous substances remaining on the Property has been taken before the date of conveyance hereunder; and

(2) any additional remedial action found to be necessary after the date of the conveyance in connection with any such hazardous substances remaining on the Property, except to the extent caused by the activities of the Grantee, its contractors, agents, sublessees, permittees, invitees, and licensees under the Lease, shall be conducted by the Grantor. This covenant in this Subsection B. shall not apply in any case in which the person or entity to whom the Property is transferred is a potentially responsible party under CERCLA with respect to the Property. For purposes of this Subsection B. the Grantor hereby covenants that previous tenancy, occupation or use by the Grantee or its lessee or sublessees of the portion of the Property so leased, occupied, or used by the Grantee or its lessee or sublessees will not cause the Grantee or its lessee or sublessees to be a potentially responsible party under this covenant or under CERCLA solely because or as a result of such tenancy, occupancy or use.

C. Prior to the determination by the United States that remediation of DSCP is complete, (i) the Grantee, its successors and assigns, shall not undertake activities on the Property that would significantly interfere with or impede the completion of the remediation of DSCP and shall give prior written notice to the Grantor, the EPA, and PADEP of any construction, alterations, or similar work on the Property that may significantly interfere with or impede said clean-up, and (ii) the Grantee shall comply with any institutional controls established or put in place by the Grantor relating to the Property as provided for in the Legal Requirements, and of which the Grantee or then subsequent owner has been provided notice. In imposing any such institutional controls, before or after the date of this Deed for the Property, the Grantor shall use reasonable means, without significant, additional cost to the Army, to avoid and/or

minimize interference with the Grantee's use of the Property. Additionally, the Grantee shall ensure that any leasehold it grants in the Property or any fee interest conveyance of any portion of the Property provides for compliance with the institutional controls provided for by the Legal Requirements, and said Legal Requirements are binding upon subsequent transferees.

D. For any portion of the Property subject to a response action in accordance with the Legal Requirements, prior to the conveyance of an interest therein by the Grantee, the Grantee shall include in all conveyances provisions allowing for the continued operation of any monitoring wells, treatment facilities, or other response activities on the Property undertaken by the Grantor pursuant to the Legal Requirements and shall notify the Grantor, EPA, and PADEP by certified mail, at least fifteen (15) days prior to any such conveyance of an interest in said Property, which notice shall include a description of said provisions allowing for the continued operation of any monitoring wells, treatment facilities, or other response activities undertaken pursuant to the Legal Requirements.

E. The Grantee and all subsequent transferees of an interest in any portion of the Property, who have not received notice of a prior determination by the United States that remediation of DSCP is complete, will provide copies of the instrument evidencing a conveyance of any portion of the Property to the Grantor by certified mail, within fourteen (14) days after the effective date of such transaction.

F. The provisions of this Section 4 shall be deemed to run with the land and shall be binding on all subsequent transferees. The Grantee and all subsequent transferees shall include the provisions of this Section 4 in all subsequent lease, transfer, or conveyance documents relating to the Property, or any portion thereof, that are entered into prior to a determination by the United States that remediation of DSCP is complete.

5. Environmental Restrictions and Covenants

A. The person or entity to whom the Property is transferred shall neither transfer the Property, lease the Property, nor grant any interest, privilege, or license whatsoever in connection with the Property without the inclusion of the environmental protection provisions contained herein, and shall require the inclusion of such environmental protection provisions in all further deeds, transfers, leases, or grant of any interest, privilege, or license.

B. Commercial/Industrial Use:

(1) Purposes: The United States has undertaken careful environmental study of the Property and concluded that the best and highest use of the Property is currently limited to commercial and industrial uses, excluding child care. In order to protect human health and the environment and further the common environmental and use plans of the United States, the Commonwealth, and the Grantee, the covenants

and restrictions set forth herein shall be included to assure the use of the Property is consistent with the environmental condition of the Property. These restrictions and covenants benefit the public generally and are consistent with state and federal environmental statutes.

(2) Restrictions and Covenants: The Grantee covenants for itself, its successors, and assigns to use in perpetuity the Property solely for commercial and industrial uses, excluding child care, and subject to Subsection (4), never to undertake or allow the construction on or usage of the Property for residential or any other purpose than the maintenance and use of commercial and industrial activities, excluding child care. The Grantee, its successors or assigns will never undertake nor allow any activity on or use of the Property that may adversely affect or detract from the restrictions contained herein. These restrictions bind and run with the Property and are forever hereinafter enforceable.

(3) Enforcement: The restrictions and covenants benefit, the United States, the common redevelopment of the DSCP property, and the buildings and area surrounding the Property and are enforceable by the United States Government and other appropriate governmental authorities as provided for by law. The Grantee covenants for itself, its successor, and assigns that it shall include and otherwise make legally binding these restrictions in all subsequent leases, and transfer or conveyance documents relating to the Property.

(4) Upon consent of PADEP or any successor thereto, other governmental agencies as appropriate, and the Grantor, additional uses may be made of the Property upon the Grantor's execution of and recording in the County and City of Philadelphia land records a restrictive covenant revising and amending this Section 5. Upon approval as provided for in this Subsection (4), the Grantor agrees to execute such revised restrictive covenant in recordable form within a reasonable time, provided that the Grantor shall not be required to expend any funds as a result thereof.

C. Groundwater And Soil Restriction.

The ground or soil below the transferred Property (including Building 9) is underlain by a subsurface plume of non-aqueous phase hydrocarbon products (the "NAPL Plume") which is located at a depth of approximately 18 to 20 feet below grade. The Grantor acknowledges and agrees that the Grantee is not responsible for the existing subsurface NAPL Plume, and the Grantee is not responsible for any investigation, removal, or remediation, unless and only to the extent that their activities cause additional contamination. Due to the existence of the subsurface NAPL Plume the following encumbrances apply:

(1) Restrictions and Conditions:

The Grantee covenants for itself, its successors and assigns not to:

(a) Access or use ground water underlying the Property for any purpose, other than water sampling and monitoring, until such time as PADEP agrees and certifies in writing ("Certification") that the ground water underlying the Property is suitable for the requested use and such Certification is placed of record in the County and City of Philadelphia land records. For the purpose of this restriction, "ground water" shall have the same meaning as in section 101(12) of CERCLA.

(b) Conduct any subsurface excavation, digging, drilling or other disturbance of the surface or subsurface underlying the Property below the Permitted Depth, without the prior written consent of the Army Material Command, with an address of Commander, U.S. Army Material Command, Attn: AMCEN, 5001 Eisenhower Avenue, Alexandria, Virginia 22333-0001, except as necessary to respond to an emergency situation where obtaining the Army's prior written consent is not feasible in which case the Grantor shall be notified as soon as practicable.

(c) Undertake nor allow any activity on or use of the Property that would violate the restrictions contained herein.

(2) Enforcement: The restrictions and covenants benefit the United States, the common redevelopment of the DSCP property, and the buildings and area surrounding the Property and are enforceable by the United States government and other appropriate governmental authorities, as provided for by law. The Grantee covenants for itself, its successors, and assigns that it shall include and otherwise make legally binding these restrictions in all subsequent leases, and transfer or conveyance documents relating to the Property.

D. Restriction Pertaining To Possible Elevated Volatile Organic Compound ("VOC") Levels:

Due to the present subsurface NAPL Plume below the Property, the basement of Building 9 on the Property may be subject to elevated levels of VOCs. The Grantee agrees not to use the basement of Building 9 on the Property unless adequate ventilation is provided to reduce any harmful levels of VOCs at or below occupational health and safety or applicable laws or regulations. PADEP has determined that the operation of the existing ventilation system is necessary to reduce potential threats to human health. The Grantee agrees to maintain and continually operate, except during necessary repair and maintenance, the existing ventilation system until such time as PADEP gives their approval in writing, that operation of the ventilation system is no longer necessary. The Grantor acknowledges and agrees that Grantee's operation of the existing ventilation system shall not be deemed a component of the remedial or removal actions. The Grantee also agrees to maintain seals around pipes, seams and other openings in the subsurface wall of the Property.

E. Hazardous Waste Safety Plan:

While the fee interest to the ground underlying the Property is owned by the Grantor, prior to the storage of any hazardous waste, material, or substance, or petroleum products on the Property, if authorized under this document, the Grantee shall prepare and maintain a plan, certified by a Professional Engineer, for responding to hazardous waste, petroleum or petroleum products, and other chemical spills. The plan shall be submitted, to the Grantor for its review and approval. Such plan shall be independent of the DSCP and shall not rely on Grantor personnel or equipment. Should the Grantor provide any personnel or equipment, because the Grantee, was not, in the opinion of the Base Realignment and Closure Environmental Coordinator, conducting timely response actions, the Grantee agrees to reimburse the Grantor for its actual costs. A copy of the Grantee's plan shall be provided to the Grantor for approval, which shall not be unreasonably withheld or delayed. The Grantee shall also, provide the Grantor with copies of all RCRA manifests for hazardous wastes generated by the Property. Upon conveyance of the fee interest to the ground underlying the Property this requirement shall become void.

6. No Warranties

Except as otherwise expressly provided for in this Deed or under federal law or any provision of the Lease and MOA, the Property is being conveyed "As Is" and "Where Is" without any representations, warranties, or guaranties as to quantity, quality, title, character, condition, size or kind, or that the Property is in a condition or fit to be used for the purpose for which it is intended, and the conveyance will be without any obligation on the part of the Grantor to make any alterations, repairs, or additions to the Property.

7. Notice Of The Presence Of Asbestos And Covenant

A. The Grantee is hereby informed and does acknowledge that friable and non-friable asbestos or asbestos-containing materials ("ACM") have been found on the Property as described in the final base-wide EBS. ACM found on the Property has been marked with appropriate signs. As of the date of the Lease the Grantor determined that ACM on the Property did not pose a threat to human health or the environment for the intended use of the Property. All friable asbestos that posed a risk to human health has either been removed or encapsulated by the Grantor prior to the date of the Lease.

B. The Grantee covenants and agrees that its use and occupancy of the Property will be in compliance with all applicable laws relating to asbestos, and that as of the date of the Lease, the Grantor assumes no liability for future remediation of asbestos or damages for personal injury, illness, disability, or death, to the Grantee, or to any other person, including members of the general public, arising from or incident to the purchase, transportation, removal, handling, use, disposition, or other activity under this Deed causing or leading to contact of any kind whatsoever with asbestos on the

Property, whether the Grantee has properly warned or failed to properly warn the individual(s) injured. The Grantee agrees to be responsible for any future remediation of asbestos found to be necessary on the Property. The Grantor agrees that the Grantee has no responsibility for damages for personal injury, illness, disability, or death to any person arising prior to the date of the Lease.

C. The Grantee assumes no liability for damages for personal injury, illness, disability, death or property damage arising from (i) any exposure or failure to comply with any legal requirements applicable to asbestos on any portion of the Property arising prior to the Grantor's conveyance or lease of such portion of the Property to the Grantee, or (ii) any asbestos or asbestos containing materials which were located on the Property at any time prior to the date of the Grantor's lease or transfer of the applicable portion of the Property to the Grantee but are no longer located thereon at the time of such lease or transfer, or (iii) any disposal, prior to the Grantor's transfer or lease of the applicable portion of the Property to the Grantee, of any asbestos or asbestos containing materials.

8. Lead-Based Paint Warning And Covenant

A. The Property does not contain residential dwellings and is not being used for residential purposes. The Grantee is notified that the Property contains a building built prior to 1978 that contains lead-based paint. Such Property may present exposure, to lead from lead-based paint that may place young children at risk of developing lead poisoning. Lead poisoning in young children may produce permanent neurological damage, including learning disabilities, reduced intelligence quotient, behavioral problems and impaired memory.

B. The Grantor's conclusions and determinations concerning known lead-based paint and/or lead-based paint hazards, the location of lead-based paint and/or lead-based paint hazards, and the condition of painted surfaces on the Property is contained in the Environmental Baseline Survey, a copy of which has been provided to the Grantee. Additionally, the Grantee has been provided with a copy of the federally approved pamphlet on lead poisoning prevention. The Grantee hereby acknowledges receipt of all of the information described in this subparagraph.

C. The Grantee shall not permit use of any buildings or structures on the Property for residential habitation without first obtaining the written consent of the Grantor. As a condition of its consent, the Grantor may require the Grantee to: (i) inspect for the presence of lead-based paint and/or lead-based paint hazards; (ii) abate and eliminate lead-based paint hazards by treating any defective lead-based paint surface in accordance with all applicable laws and regulations; and (iii) comply with the notice and disclosure requirements under applicable Federal and state law. The Grantee agrees to be responsible for any future remediation of lead-based paint found to be necessary on the Property.

D. The Grantee assumes no liability for damages for personal injury, illness, disability, death or property damage arising from (i) any exposure or failure to comply with

any legal requirements applicable to lead based paint on any portion of the Property arising prior to the Grantor's conveyance or lease of such portion of the Property to the Grantee, or (ii) any lead based paint or lead based paint containing materials which were located on the Property at any time prior to the date of the Grantor's lease or transfer of the applicable portion of the Property to the Grantee but are no longer located thereon at the time of such lease or transfer, or (iii) any disposal, prior to the Grantor's transfer or lease of the applicable portion of the Property to the Grantee, of any lead based paint or lead based paint containing materials.

9. Notice Of The Presence Soil Gas Vapors

A. Based on information obtained from a soil gas survey, the Grantor has documented the presence and determined the general location, extent, nature and source of soil gas vapors [primarily methane gas but also including VOC's] ("Soil Gas Vapors") which may accumulate in the sub-surface soils on the Property, including within the Permitted Depth. The Grantor has determined that the source of the Soil Gas Vapors is the biodegradation of the NAPL Plume underlying the Property. While the Grantor has determined that the Property is suitable for its intended purpose for non-residential uses, the Soil Gas Vapors could present a hazardous condition during ground construction activities or within confined subterranean building areas or underground utilities, unless properly managed. The Grantee is advised that certain federal, state and local laws or regulations (including, but not limited to occupational safety and health regulations regarding monitoring, control and preventive measures) may be applicable during construction and maintenance activity, and, with respect to construction activity, there may be a need to implement certain design features for buildings on the Property. Accordingly, the Grantee as its sole obligation with respect to such Soil Gas Vapors, shall ensure that appropriate measures, as required by applicable laws or regulations or common practice, are taken during any construction or maintenance activity on the Property to detect and mitigate, using common and precautionary engineering, construction, or, with respect to construction activity, design measures, any unacceptable levels of Soil Gas Vapors. If any unacceptable levels of Soil Gas Vapors are detected that cannot be controlled using common and precautionary engineering, construction or, with respect to construction activity, design measures, the Grantee shall ensure the cessation of such activities and ensure that the Grantor is promptly notified of these conditions. Upon notification, the Grantor shall promptly notify PADEP, and, in consultation with PADEP and Grantee (or the then current owner(s) of the Property) and any then current tenants or subtenant(s) of the Property who are or could be affected by such unacceptable levels of Soil Gas Vapors, the Grantor shall, in its sole discretion, and at its sole cost and expense, promptly either (i) take any necessary remedial action to reduce the level of Soil Gas Vapors to a level that can be controlled with common and precautionary engineering, construction or, with respect to construction activity, design measures, or (ii) provide for precautionary mitigation measures to protect human health and safety. Any such remedial action or precautionary mitigation measures taken by the Grantor shall be coordinated with any affected Grantee (or the then current owner(s) of the Property) and any then current affected tenants or subtenants of the Property and approved in writing by PADEP, and

shall not cause a significant increase in the cost of redeveloping the Property or cause a material adverse affect on the physical re-use of the Property.

B. Neither the Grantee nor any successor, successor-in-title, assignee, grantee or transferee of Grantee, or any other person or entity that acquires or possesses ownership or control of all or any part of the Property, shall transfer or convey the Property, lease or sublease the Property, or grant any interest, right, privilege or license whatsoever to or in connection with the Property without including the provisions contained in this Paragraph 9 verbatim or by express reference. The provisions of this Paragraph 9 shall be deemed to run with the land and shall be legally binding on the Grantee, its successors and assigns, and all subsequent grantees or transferees and all persons or entities that at any time hereafter acquire ownership or control, of all or any portion of the Property.

10. Preservation Covenant For The Property

A. In consideration of the conveyance of the Property the Grantee hereby covenants on behalf of itself, its heirs, successors, and assigns at all times to the Pennsylvania State Historic Preservation Officer ("SHPO") to preserve and maintain the Property in accordance with the recommended approaches in the Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings (U. S. Department of the Interior, National Park Service 1992) (Standards) or design guidelines approved by the SHPO in order to preserve and maintain those qualities that make the Property eligible for inclusion in the National Register of Historic Places. If the Grantee desires to deviate from the Standards or SHPO approved design guidelines, the Grantee will notify and consult with the SHPO in accordance with paragraphs B, C, and D of this covenant.

B. The Grantee will notify the SHPO in writing prior to undertaking any construction, alteration, remodeling, demolition, or other modifications to the Property that would affect the integrity or appearance of the DSCP Historic District, Philadelphia, Pennsylvania ("District"), with the exception of those activities listed in paragraph C of this covenant. Such notice shall describe in reasonable detail the proposed undertaking and its effect on the integrity of the District.

C. The following activities have limited potential to affect the Property within the District and may be implemented without further review by the SHPO or the Advisory Council on Historic Preservation ("Council") when they are limited solely to the following:

(1) Interior:

(a) Plumbing rehabilitation and replacement, including pipes and fixtures;

(b) Heating system rehabilitation and replacement, including furnaces, pipes, radiators or other heating units;

(c) Electrical wiring, including wiring and receptacles;

(d) Restroom improvements for handicapped access, provided that the work is contained within an existing restroom;

(e) Interior treatments (floors, walls, ceilings, woodwork), provided the work is limited to painting, refinishing, repapering or laying carpet or other suitable flooring material. Construction of temporary walls (timber or steel framed with drywall finish) is permitted. No removal of existing interior doors, permanent interior walls, floors, or support columns, original to the period of significance, will be permitted;

(f) Insulation, provided it is restricted to ceilings and attic spaces; and

(g) Building code compliance.

(2) Exterior:

(a) Caulking, weatherstripping, reglazing;

(b) Sidewalk and curbing replacement;

(c) Gutters and downspout replacement;

(d) Roof repair or replacement which uses in-kind materials and does not alter the pitch of the original roof;

(e) Storm windows, provided they conform to the original shape and size of the historic windows and that the meeting rail coincides with that of the existing sash. Color should match existing windows and trim;

(f) Clean and seal treatments which do not include sand blasting or the use of chemicals which have not been approved for use by the Pennsylvania State Historic Preservation Officer; and

(g) In-kind replacement is understood to mean that the new features or replacement items will duplicate the material, dimensions and detailing of the original. No removal of existing exterior doors, enlarging or filling in of door and window openings, or removal of permanent exterior walls, original to the period of significance, will be permitted. In-kind replacements apply to but are not limited to:

(1) Porches and loading platforms such as stairs, railings, posts and columns, brackets, cornices, and flooring;
(2) Roofs;
(3) Siding;
(4) Exterior architectural details and feature, including but not limited to brickwork, lintels, and trim;
(5) Windows, includes both trim and the sash; and
(6) Doors.

D. Within thirty (30) calendar days following receipt of notification provided by the Grantee pursuant to paragraph B of this covenant, the SHPO will respond to the Grantee in writing as follows:

(1) Notify the Grantee that the proposed project meets the Standards or approved design guidelines and may proceed; or

(2) Notify the Grantee that the proposed project does not meet the Standards or approved design guidelines or would otherwise adversely affect the

District and will require further consultation with the SHPO to explore alternatives before the Grantee can proceed with the proposed undertaking.

If the SHPO fails to respond to the Grantee's written notice as described in paragraph B, within thirty (30) calendar days of the SHPO's receipt of the same, then the Grantee may proceed with the Proposed undertaking without further consultation with the SHPO.

E. If the response provided to the Grantee by the SHPO pursuant to paragraph D of this covenant requires consultation with the SHPO, both parties will consult in good faith to explore alternatives that will minimize, mitigate or avoid adverse effects to the District by adhering to a mutually agreeable treatment/mitigation plan that the Grantee will implement. If the parties are unable to arrive at such mutually agreeable treatment/mitigation plans, the Grantee shall request the recommendations of the Council. Within thirty (30) calendar days following receipt of pertinent documentation, the Council will provide the Grantee with recommendations to mitigate, minimize or avoid adverse effects to the District. The Grantee shall advise the SHPO and Council how it intends to respond to the Council's recommendations prior to initiating project activities.

Pursuant to this covenant, any treatment/ mitigation plans to which the Grantee and the SHPO or Council, as appropriate, agree shall be carried out solely at the expense of the Grantee.

F. The SHPO shall be permitted at all reasonable times to inspect the Property to ascertain its condition and to fulfill its responsibilities hereunder.

G. In the event of a violation of this covenant, and in addition to any remedy now or hereafter provided by law, the SHPO may, following reasonable notice to the Grantee, institute suit to enjoin said violation or to require the rehabilitation or maintenance of contributing buildings within the District. The successful party shall be entitled to recover all costs or expenses incurred in connection with such a suit, including all court costs and attorneys fees.

H. In the event the Property is substantially destroyed by fire or other casualty, or if not totally destroyed, the damage thereto is so serious that preservation and rehabilitation would be economically prohibitive in the reasonable judgment of the Grantee, as concurred in by the SHPO, this covenant shall be terminated for the Property on the date the Grantee obtains the SHPO's concurrence. Upon such termination, the Grantee shall deliver a duly executed and acknowledged notice of such termination to the SHPO, and record a duplicate original of said notice in the Office of the Recorder of Deeds of Philadelphia County. Such notice shall be conclusive evidence in favor of every person dealing with the Property as to the facts set forth therein.

I. The Grantee agrees that the SHPO may at its discretion, without prior notice to the Grantee, convey and assign all or part of its rights and responsibilities contained herein to a third party.

J. This covenant is binding on the Grantee, its heirs, successors, and assigns in perpetuity, unless explicitly waived by the SHPO. Restrictions, stipulations, and covenants contained herein shall be inserted by the Grantee verbatim or by express reference in any deed or other legal instrument by which it divests itself of either the fee simple title or any other lesser estate in the Property, or any part thereof.

K. The failure of the SHPO to exercise any right or remedy granted under this Deed shall not have the effect of waiving or limiting the exercise of any other right or remedy or the use of such right or remedy at any other time.

L. This covenant shall be a binding servitude upon the Property, and shall be deemed to run with the land. Execution of this covenant shall constitute conclusive evidence that the Grantee agrees to be bound by the foregoing conditions and restrictions and to perform the obligations herein set forth.

11. Notice of Non-Discrimination

With respect to activities related to the Property, the Grantee shall not discriminate against any person or persons or exclude them from participation in the Grantee's operations, programs or activities conducted on the Property, because of race, color, religion, sex, age, handicap, or national origin.

12. Statutory Indemnification of Grantee

The Grantor recognizes and agrees to fulfill its obligation to hold harmless, defend, and indemnify the Grantee and any successor, assignee, transferee, lender, or lessee of the Grantee or its successors and assigns, as required by Section 330 of the Department of Defense Authorization Act of 1993, as amended, a copy of which is attached as Exhibit C and to otherwise meet its obligations under law.

13. Anti-Deficiency Act

The GRANTOR'S obligation to pay or reimburse any money under this Deed is subject to the availability of appropriated funds to the Department of the Army, and nothing in this Deed shall be interpreted to require obligations or payments by the United States in violation of the Anti-Deficiency Act provided that the Grantor shall otherwise comply with all applicable statutory requirements and its obligations under the terms of this Deed.

14. Continuing Obligation

To the extent required by the terms of this Quitclaim Deed, Grantee agrees to include the terms, covenants, promises, obligations, undertakings, limitations and restrictions contained in this Quitclaim Deed in all subsequent documents or instruments by which Grantee conveys or transfers ownership or control of all property or any portion of the Property. The Grantor acknowledges that PAID, as Grantee hereunder, intends to be, and such subsequent documents and instruments shall provide that PAID, as the Grantee, shall be, released, relieved and discharged of all liability, responsibility and obligation of any kind with respect to the covenants, obligations, promises, undertakings, limitations and restrictions in this Quitclaim Deed not accruing during PAID's ownership of the Property (or portion thereof) so conveyed or transferred. However, PAID's obligation to comply with and observe such terms, covenants, promises, obligations, undertakings, limitations and restrictions during PAID's period of ownership of the Property shall not be conditioned upon PAID's obtaining such a release in subsequent documents and instruments conveying or transferring ownership or control of all or any portion of the Property.

End of Text

IN WITNESS WHEREOF, the Grantor has caused this Deed to be executed in its name by the Acting Deputy Assistant Secretary of the Army (I&H), and the seal of the Department of the Army to be hereunto affixed as of the 3rd day of October 2001.

UNITED STATES OF AMERICA

By: [redacted]

Acting Deputy Assistant Secretary of the Army
(Installations and Housing)
OASA(I&E)

Signed and sealed and delivered
in the presence of:

Witness [redacted]

Witness [redacted]

COMMONWEALTH OF VIRGINIA)
COUNTY OF ARLINGTON) ss:

I, the undersigned, a Notary Public in and for the Commonwealth of Virginia; County of Arlington, whose commission as such expires on the 30th day of November 2002 do hereby certify that this day personally appeared before me in the Commonwealth of Virginia, County of Arlington, Joseph W. Whitaker, Acting Deputy Assistant Secretary of the Army (I&H), whose name is signed to the foregoing instrument and who acknowledged the foregoing instrument to be his free act and deed, dated this 3rd day of October 2001, and acknowledged the same for and on behalf of the UNITED STATES OF AMERICA.

[redacted]
Notary Public

ACCEPTANCE: The Philadelphia Authority For Industrial Development, does hereby accept and approve this Quitclaim Deed and agrees to all of the terms and conditions thereof as of the 9th day of October 2001.

THE PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT

BY [redacted]
Chairman

COMMONWEALTH OF PENNSYLVANIA))
) SS:
COUNTY OF PHILADELPHIA)

I, the undersigned, a Notary Public in and for the Commonwealth of Pennsylvania, County of Philadelphia, whose commission as such expires on the 2nd day of April, 20 05 do hereby certify that this day personally appeared before me in the Commonwealth of Pennsylvania, County of Philadelphia, [redacted], whose name is signed to the foregoing instrument and acknowledged the foregoing instrument to be his free act and deed, dated this 9th day of October 2001, and acknowledged the same for and on behalf of the Philadelphia Authority For Industrial Development

[redacted]
Notary Public

NOTARIAL SEAL
[redacted] Notary Public
City of Philadelphia, Phila. County
My Commission Expires April 2, 2005

DESCRIPTION OF PREMISES "B"
BUILDING # 9
DESCRIPTION OF AERIAL RIGHTS

All that certain lot or piece of ground with buildings and improvements thereon erected, situate in the 26th Ward of The City of Philadelphia and described according to a Survey and Plan of Property made by James P. Vesey, Surveyor and Regulator of the Second Survey District on May 16, 1997, as follows:

Beginning at an interior point, lying above a horizontal plane 17 feet above City Of Philadelphia Datum, the following two courses and distances from the point of intersection of the Northwesterly side of 20th Street (70' wide) and the Southwesterly side of Oregon Avenue (120' wide):

1. S. 15° 00' 00" W., along the Northwesterly side of said 20th St. the distance of 1590.00' to a point on the Northeasterly right-of-way Line of the Delaware River Port Authority.
2. N. 75° 00' 00" W, along the Northeasterly right-of-way Line of The Delaware River Port Authority, the distance of 195.01' to the interior point of beginning.

Thence extending along the said Northeasterly right-of-way Line of The Delaware River Port Authority, N. 75° 00' 00" W., the distance of 249.50' to a point; Thence ascending in a vertical direction 2 feet to a point on a horizontal plane 19 feet above City Of Philadelphia Datum; Thence extending partly along the Southwesterly terminus of a proposed 25' wide easement for sanitary and stormwater purposes which extends Northeastwardly and Southeastwardly and the Southeasterly terminus of a proposed variable width easement for stormwater and sanitary purposes which extends Northeastwardly and Northwestwardly, and along the Northeasterly Right-Of-Way Line of The Delaware River Port Authority, N. 75° 00' 00" W., the distance of 726.15' to a point; Thence extending , partly along the Northwesterly terminus of the proposed said variable width easement for stormwater and sanitary purposes, and partly through a wall, N. 15° 00' 00" E., the distance of 348.34' to a point; Thence extending, partly along the Northeasterly terminus of a proposed 25' wide easement for stormwater and sanitary purposes which extends Southwestwardly and communicates with the said proposed 25' wide easement for stormwater and sanitary purposes, and along a property line S. 75° 00' 00" E., the distance of 726.15' to a point; Thence descending in a vertical direction 2 feet to a horizontal plane 17 feet above City Of Philadelphia Datum; Thence extending S. 75° 00' 00" E., the distance of 99.18' to a point; Thence extending S. 15° 00' 00" W., the distance of 20.77' to a point in a wall; Thence extending through a wall S. 75° 00' 00" E., the distance of 150.32' to a point in a wall; Thence extending, partly crossing the said 25' wide easement for stormwater and sanitary purposes and partly along the Southwesterly terminus of a proposed easement for ingress and egress which extends Northeastwardly to said 20th Street, and partly through a wall, S. 15° 00' 00" W., the distance of 327.57' to the first mentioned interior point and place of beginning.

- **Containing in Area 336,731.4 Sq. Ft. or 7.73028 Acres**

EXHIBIT A

EXCEPTING THEREOUT AND THEREFROM THE FOLLOWING CUBE OF SPACE

ALL THAT CERTAIN lot or piece of ground limited in vertical dimension, the upper limit thereof being a horizontal plane at elevation 44.47 feet above City Of Philadelphia Datum and the lower limit thereof being a horizontal plane at elevation 30.02 feet above City Of Philadelphia Datum Situate, in the 26th Ward of the City Of Philadelphia and described according to a Survey and Plan of Property made by James P. Vesey, Surveyor and Regulator of the Second Survey District on May 16, 1997, as follows:

Beginning at an interior point said point being the six following courses and distances from the point of intersection of the Northwesterly side of 20th Street (70' wide) and the Southwesterly side of Oregon Avenue (120' wide):

1. Along the Northwesterly side of said 20th Street S. 15° 00' 00" W., the distance of 769.09'
2. N. 75° 00' 00" W. the distance of 31.74'
3. N. 15° 00' 00" E. the distance of 5.43'
4. N. 75° 00' 00" W. the distance of 287.60'
5. S. 15° 00' 00" W. the distance of 478.00'
6. N. 75° 00' 00" W. the distance of 402.96' to the interior point of beginning;

Thence extending S. 15° 00' 00" W., the distance of 20.07' to a point; Thence extending N. 75° 00' 00" W., the distance of 19.95' to a point; Thence extending N. 15° 00' 00" E., the distance of 20.07' to a point; Thence extending S. 75° 00' 00" E., the distance of 19.95' to the first mentioned interior point and place of beginning

Containing in Area 400.3 Sq. Ft. or 0.00919 Acre

[redacted]

Surveyor and Regulator
Second Survey District

EXHIBIT A

PERSONAL PROPERTY LIST

[INTENTIONALLY OMITTED]

Exhibit B

SEC. 330. INDEMNIFICATION OF TRANSFEREES OF CLOSING DEFENSE PROPERTY. 10 U.S.C. 2687 note.

(a) In GENERAL. - (1) Except as provided in paragraph (3) and subject to subsection (b), the Secretary of Defense shall hold harmless, defend, and indemnify in full the persons and entities described in paragraph (2) from and against any suit, claim, demand or action, liability, judgment, cost or other fee arising out of any claim for personal injury or property damage (including death, illness, or loss of or damage to property or economic loss) that results from, or is in any manner predicated upon, the release or threatened release of any hazardous substance or pollutant or contaminant as a result of Department of Defense activities at any military installation (or portion thereof) that is closed pursuant to a base closure law.

(2) The persons and entities described in this paragraph are the following:

(A) Any State (including any officer, agent; or. Employee of the State) that acquires ownership or control of any facility at a military installation (or any portion thereof) described in paragraph (1).

(B) Any political subdivision of a State (including any officer, agent, or employee of the State) that acquires such ownership or control.

(C) Any other person or entity that acquires such ownership or control.

(D) Any successor, assignee, transferee, lender, or lessee of a person or entity described in subparagraphs (A) through (C)

(3) To the extent the persons and entities described in paragraph (2) contributed to any such release or threatened release, paragraph (1) shall not apply.

(b) CONDITIONS.-No indemnification may be afforded under this section unless the person or entity making a claim for indemnification-

(1) notifies the Department of Defense in writing within two years after such claim accrues or begins action within six months after the date of mailing, by certified or registered mail, of notice of final denial of the claim by the Department of Defense;

(2) furnishes to the Department of Defense copies of pertinent papers the entity receives;

(3) furnishes evidence or proof of any claim, loss, or damage covered by this section; and

(4) provides, upon request by the Department of Defense, access to the records and personnel of the entity for purposes of defending or settling the claim or action.

EXHIBIT C

(c) AUTHORITY OF SECRETARY OF DEFENSE.-(1) In any case in which the Secretary of Defense determines that the Department of Defense may be required to make indemnification payments to a person under this section for any suit, claim, demand or action, liability, judgment, cost or other fee arising out of any claim for personal injury or property damage referred to in subsection (a)(1), the Secretary may settle or defend, on behalf of that person, the claim for personal injury or property damage.

(2) In any case described in paragraph (1), if the person to whom the Department of Defense may be required to make indemnification payments does not allow the Secretary to settle or defend the claim, the person may not be afforded indemnification with respect to that claim under this section.

(d) ACCRUAL OF ACTION.-For purposes of subsection (b)(1) the date on which a claim accrues is the date on which the plaintiff knew (or reasonably should have known) that the personal injury or property damage referred to in subsection (a) was caused or contributed to by the release or threatened release of a hazardous substance or pollutant or contaminant as a result of Department of Defense activities at any military installation (or portion thereof) described in subsection (a)(1).

(e) RELATIONSHIP TO OTHER LAW.-Nothing in this section shall be construed as affecting or modifying in any way section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9620(h)).

(f) DEFINITIONS.-In this section:

(1) The terms "facility", "hazardous substance", "release" and "pollutant or contaminant" have the meanings given such terms under paragraphs (9), (14), (22), and (33) of section 101 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, respectively (42 U.S.C. 9601 (9), (14), (22), and (33)).

(2) The term "military installation" has the meaning given such term under section 2687(e)(1) of title 10, United States Code.

(3) The term "base closure law" means the following:

(A) The Defense Base Closure and Realignment Act of 1990 (10 U.S.C. 2687 note).

(B) Title II of the Defense Authorization Amendments and Base Closure and Realignment Act (10 U.S.C. 2687

(C) Section 2687 of title 10, United States Code.

(D) Any provision of law authorizing the closure or realignment of a military installation enacted on or after the date of the enactment of this Act.

EXHIBIT C

Certificate of Address:

I certify that the precise street address of the grantee in the foregoing is as follows:

Philadelphia Authority for Industrial Development
2600 Centre Square West
1500 Market Street
Philadelphia, Pennsylvania 19102

Signed on behalf of the Grantee:

[redacted]

Print Name: [redacted]

Quitclaim Deed, Building 13 Air Rights (see p. 8, ¶ 5. B.)

QUITCLAIM DEED

WHEREAS, pursuant to the Defense Base Closure and Realignment Act of 1990, Public Law 101-510, as amended ("BRAC law"), the military installation at Defense Supply Center Philadelphia, ("DSCP") County of Philadelphia, Commonwealth of Pennsylvania, formerly called Defense Personnel Support Center until January 13, 1998, was determined surplus by the Army on March 30,1995; and

WHEREAS, the City of Philadelphia, acting by and through the Philadelphia Authority For Industrial Development ("PAID") was granted the authority to oversee and implement the civilian reuse of DSCP in accordance with a local-approved reuse plan; and

WHEREAS, PAID, a Local Reuse Authority, made application for an Economic Development Conveyance ("EDC") for the purchase of a portion of DSCP including two buildings, Buildings 9 and 13; the 12.86 acre, more or less, parcel of land underlying said buildings; and a 4-acre parking lot parcel (collectively the "First EDC Property"); and

WHEREAS, the Army, as authorized by the BRAC law and implementing regulations, has determined that the application meets the criteria for conveyance to assist economic redevelopment and job creation and has accepted PAID's application and made a final disposal decision with regard to the First EDC Property; and

WHEREAS, the Army and PAID have entered into a Memorandum of Agreement ("MOA"), dated May 22, 1997 establishing the terms and conditions for an EDC conveyance of the First EDC Property to PAID and the lease of a portion of the First EDC Property to PAID pending and in furtherance of the conveyance of the First EDC Property; and

WHEREAS, the MOA provides for the conveyance of the First EDC Property in phases as Army mission requirements cease and environmental remediation is completed, with Building 9, Building 13, the 12.86 acre parcel underlying said buildings, and a 4 acre parking lot parcel conveyed separately; and

WHEREAS, in accordance with the MOA, dated on May 22, 1997 the Army leased to PAID the First EDC Property, with the exception of the parking lot parcel and certain portions of Building 9, (the "Lease"), giving PAID possession and control of said portion of the First EDC Property as of the date of the Lease; and

WHEREAS, pursuant to Public Law 101-510, as amended, the Army has the authority to convey and with this Deed conveys to PAID, pursuant to the terms and conditions of the MOA, the air rights as described in Exhibit A and all of the improvements contained therein; located in the County of Philadelphia, Commonwealth of Pennsylvania, at DSCP.

NOW THEREFORE,

KNOW ALL MEN BY THESE PRESENTS that the UNITED STATES OF AMERICA (the "Grantor"), acting by and through the Acting Deputy Assistant Secretary of the Army (I&H) pursuant to a delegation of authority from the SECRETARY OF THE ARMY (the "Army"), under and pursuant to the BRAC law, in consideration of ONE DOLLAR ($1.00) cash in hand paid, the receipt of which is hereby acknowledged, and other good and valuable consideration as provided for in the MOA between the parties, does hereby convey, grant, remise, release, and forever quitclaim unto the PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT (the "Grantee"), a body corporate, and politic, and existing under the laws of the Commonwealth of Pennsylvania ("Commonwealth") having its principal place of business at 2600 Centre Square West, 1500 Market Street, Philadelphia, PA 19102 and its successors and assigns, all its right, title, and interest in and to a portion of the First EDC Property, located in the County of Philadelphia, Commonwealth of Pennsylvania, at DSCP, more particularly described in Exhibit A, attached hereto and made a part hereof (hereinafter called the "Property").

The words "Grantor" and "Grantee" used herein shall be construed as if they read "Grantors" and "Grantees" respectively, whenever the sense of this Deed so requires and, whether singular or plural, such words shall be deemed to include in all cases the successors and assigns of the respective parties.

1. Property Conveyed.

The Property includes the air rights as described in Exhibit A and all of the improvements contained therein (including Building No. 13) together with all hereditaments and tenements therein and all easements, reversions, remainders, issues, profits, and other rights belonging or related thereto; except that the existing free-phase hydrocarbon recovery system on the Property for the NAPL Plume (as hereinafter defined) is not conveyed herewith.

The legal description of the Property has been provided by PAID and PAID shall be responsible for the accuracy of the description of the Property conveyed herein.

All of the related personal property ("Personal Property") listed in Exhibit B, will be transferred to Grantee pursuant to that certain Bill of Sale dated as of even date herewith.

2. Support Easements and Mutual Covenants.

Without in any way limiting, and subject to, the terms and provisions of that certain Declaration of Easements dated the same date as this Deed (which is to be

recorded in the Office of the Recorder of Deeds prior to the recordation of this Deed) (the "Declaration of Easements"), Grantor does hereby grant to Grantee the following described rights and easements, including but not limited to ingress and egress and for support, maintenance, and operation of any structures, buildings or other improvements of any kind whatsoever, now or at any time and from time to time hereinafter existing in, or about the Property hereby conveyed:

A. An easement appurtenant to the Property herein conveyed within the subjacent air space and the surface of the ground underlying the Property for ingress and egress from the building.

B. Subject to the conditions set forth in Paragraphs 5.C(1) and 9 of this Deed, all necessary or appropriate easements appurtenant to the Property herein conveyed and across, over, through, in, upon, under and within the air space and soil of the ground underlying the Property down to and including the Permitted Depth, to construct, develop, service, operate, maintain, alter, install, modify, repair and replace the structural support system of the buildings, structures or other improvements now or hereafter located on or in the Property and any part thereof in the ground underlying the Property to the extent of the Permitted Depth, which structural support system shall include, but not be limited to, all load-bearing members such as columns, footings, foundations, cross bracings and connections which support the building laterally, subjacent to the building grade, and/or otherwise, including the unlimited right to relocate, modify, repair, replace, shore-up or otherwise reinforce or in any other manner to deal with such structural support system. For the purposes of this Deed the term "Permitted Depth" shall mean the depth beneath the surface of the land surrounding the Property down to and including a depth of ten (10) feet or such greater depth, as determined by the Grantor in consultation with the appropriate environmental agencies having jurisdiction (including, but not limited to, U.S. Environmental Protection Agency ("EPA") and/or Pennsylvania Department of Environmental Protection ("PADEP"), as such terms are hereinafter defined), as is reasonably necessary for the re-use of the Property in accordance with the uses set forth and described in Paragraph 5(B) of this Deed;

C. An easement appurtenant to the Property herein conveyed for the service, operation, maintenance, alteration, installation, modification, repair or replacement of, in whole or in part, or additions to, all those areas in any part of the ground underlying the Property set aside for the function of mechanical facilities, communication lines, heating, ventilation, air conditioning systems, electrical power systems, plumbing and sewer systems and utility systems, including, but not limited to, all taps, laterals, lines, mains, conduits, facilities, pipes, systems, appurtenances, components, parts and equipment, fire protection systems, fuel systems including gas lines, sanitary sewer and storm sewer, fire suppression, and all other items, equipment and components relating to all or any part of the foregoing found in any part of the ground underlying the Property.

D. Grantor and Grantee agree that, to the extent rights substantially similar to those described in Paragraphs 2(A) through (C) above, inclusive, have been granted to, and then only for so long as such substantially similar rights exist in favor of, Grantee pursuant to a lease or other occupancy or use agreement with respect to the Property, the terms of such lease or other occupancy or use agreement with respect to such rights shall govern.

E. Grantor and Grantee do further mutually covenant and agree to assure Grantee's quiet enjoyment and full use and occupancy of the Property hereby conveyed, as follows:

(1) Grantor and Grantee each acknowledges and agrees that certain portions of the building herein conveyed share a party wall with other improvements that are not part of this conveyance and that certain portions of the building herein conveyed encroach into the air space of land adjacent to the Property herein conveyed and that certain portions of buildings adjacent to the Property herein conveyed encroach into the air space of the Property herein conveyed and Grantor and Grantee do hereby each covenant and agree that to the extent that any such buildings, structures or improvements extend over any boundary line herein described and constitute encroachments into the respective areas and estates owned by Grantor and Grantee, that the other shall suffer the same to continue and exist.

(2) Any buildings, structures or improvements as actually constructed now or from time to time may vary somewhat from the elevations and dimensions above set forth and it is hereby understood and agreed by and between Grantor and Grantee that said elevations and dimensions shall be subject to such variations therein as may exist in connection with any such buildings, structures or improvements as the same shall actually be constructed.

(3) By execution of this Deed the Grantee acknowledges receipt and acceptance of this Deed and affirms its agreement to observe the covenants and perform its obligations as set forth herein, which agreement shall be deemed to be a real covenant and shall run with the Property and burden the subjacent air space and land hereinabove described.

3. Reserved Easements.

A. The Property is conveyed subject to the easements for the benefit of the owners and collective redevelopment of the entire property that formerly comprised DSCP, as set forth in the Declaration of Easements.

B. Access Easement for Environmental Activities: The Grantor and its agents, employees, and contractors shall have access to and over the Property, from time to time, and only so long as may be necessary, to fulfill the Grantor's environmental responsibilities under this Deed or as necessary for any investigation, response, corrective action or ground water monitoring pursuant to CERCLA, a Record of Decision ("ROD") or amendment thereto, the National Contingency Plan ("NCP"), Resource Conservation and Recovery Act ("RCRA"), any order between the Grantor, and the PADEP and/or the EPA, or any Federal Facility Compliance Agreement ("FFCA") as well as the legal requirements of the Commonwealth such as Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S.§§ 691.1-691.1001 ("Clean Streams Law"); The Land Recycling and Environmental Remediation Standards Act, Act of May 19, 1996, 35 P.S. 6026.101 et seq. ("Land Recycling Act"); The Storage Tank and Spill Prevention Act, Act of August 7, 1989, P.L. 1989 No. 32, as amended, 35 P.S. 6021.101 et seq. ("Tank Act"); Section 1917-A of the Administrative Code of 1979, Act of April 9, 1929, P.L. 177, as amended, 71 P.S. § 510-17 ("Administrative Code") and the rules and regulations promulgated pursuant to these Acts (collectively called "Legal Requirements") with respect to the remediation of the Property and the NAPL Plume (as hereinafter defined) under the Property found to be necessary before or after the date of this Deed (hereinafter collectively referred to as "remediation of DSCP") and the Grantor shall notify the Grantee when it becomes necessary to exercise the easement rights herein reserved to fulfill the Grantor's environmental responsibilities. The Grantor, PADEP, and their authorized permittees and representatives shall have access to the Property to fulfill the Legal Requirements. The Grantee shall allow ingress and egress of all equipment necessary to accomplish the same. The Grantor shall provide the Grantee copies of any ROD, Order, or FFCA, or any amendments to said documents. This reservation includes the right of access to and use of, to the extent permitted by law, any available utilities at actual cost. In exercising the rights hereunder, except in case of imminent endangerment to human health or the environment, the Grantor shall give the Grantee, or the then record owner at least thirty (30) days prior written notice of actions to be taken in remediation of the DSCP and shall use reasonable means without significant additional cost to the Government to avoid and/or minimize interference with the use of the Property. Grantee agrees that notwithstanding any other provisions of this Deed, the United States assumes no liability to the Grantee, the then record owner or any other person, should remediation of the DSCP interfere with the Grantee's use of the Property, provided however that (1) the Grantor shall use its best efforts, without significant additional cost to the United States, to avoid significantly interfering with the use of the Property; and (2) if feasible, in the event of an imminent endangerment to human health or the environment, the Grantor shall provide seventy-two (72) hours advance notice of any remedial actions it intends to take on the Property. Subject to the provisions of this Section 3B, the Grantee, the then record owner, and any other person shall have no claim solely on account of any such interference resulting from actions taken under this Section 3B against the United States or any officer, agent, employee or contractors thereof. As of the date of this conveyance, the Grantor has provided the Grantee with an Environmental Baseline Survey ("EBS") and Finding of Suitability to Transfer

("FOST"), which, to the Grantor's knowledge and belief, accurately reflects the environmental condition of the Property, as presently known.

C. Notwithstanding any other provision of this Deed, the Grantee shall allow third parties under an Order with the United States and regulatory authorities to have access to, over, and through the Property, solely related to the remediation of the NAPL Plume, to implement the Legal Requirements in accordance with the Order, provided that such third parties shall be required to enter into a separate access agreement satisfactory to the Grantee, which access agreement will not impose any costs upon the United States.

D. Agents of Grantor. Solely for purposes of this Paragraph 3, the Defense Logistics Agency ("DLA") and DSCP shall be deemed to be "agents" of the Grantor.

4. CERCLA Covenants and Notice.

Pursuant to Sections 120(h)(3) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. § 9601 et seq. ("CERCLA"):

A. The Grantor hereby notifies the Grantee that there was no storage, release, and disposal of hazardous substances on the Property in excess of reportable quantities. For the purpose of this Deed, "hazardous substances" shall have the same meaning as section 101(14) of CERCLA. Based upon the FOST, the information regarding this storage, release, and disposal indicates that there is no unacceptable risk to human health or the environment.

B. The Grantor hereby covenants that:

(1) all remedial action necessary to protect human health and the environment with respect to any such hazardous substances remaining on the Property has been taken before the date of conveyance hereunder; and

(2) any additional remedial action found to be necessary after the date of the conveyance in connection with any such hazardous substances remaining on the Property, except to the extent caused by the activities of the Grantee, its contractors, agents, sublessees, permittees, invitees, and licensees under the Lease, shall be conducted by the Grantor. This covenant in this Subsection B. shall not apply in any case in which the person or entity to whom the Property is transferred is a potentially responsible party under CERCLA with respect to the Property. For purposes of this Subsection B. the Grantor hereby covenants that previous tenancy, occupation or use by the Grantee or its lessee or sublessees of the portion of the Property so leased, occupied, or used by the Grantee or its lessee or sublessees will not cause the Grantee or its lessee or sublessees to be a potentially responsible party under this covenant or under CERCLA solely because or as a result of such tenancy, occupancy or use.

C. Prior to the determination by the United States that remediation of DSCP is complete, (i) the Grantee, its successors and assigns, shall not undertake activities on the Property that would significantly interfere with or impede the completion of the remediation of DSCP and shall give prior written notice to the Grantor, the EPA, and PADEP of any construction, alterations, or similar work on the Property that may significantly interfere with or impede said clean-up, and (ii) the Grantee shall comply with any institutional controls established or put in place by the Grantor relating to the Property as provided for in the Legal Requirements, and of which the Grantee or then subsequent owner has been provided notice. In imposing any such institutional controls, before or after the date of this Deed for the Property, the Grantor shall use reasonable means, without significant, additional cost to the Army, to avoid and/or minimize interference with the Grantee's use of the Property. Additionally, the Grantee shall ensure that any leasehold it grants in the Property or any fee interest conveyance of any portion of the Property provides for compliance with the institutional controls provided for by the Legal Requirements, and said Legal Requirements are binding upon subsequent transferees.

D. For any portion of the Property subject to a response action in accordance with the Legal Requirements, prior to the conveyance of an interest therein by the Grantee, the Grantee shall include in all conveyances provisions allowing for the continued operation of any monitoring wells, treatment facilities, or other response activities on the Property undertaken by the Grantor pursuant to the Legal Requirements and shall notify the Grantor, EPA, and PADEP by certified mail, at least fifteen (15) days prior to any such conveyance of an interest in said Property, which notice shall include a description of said provisions allowing for the continued operation of any monitoring wells, treatment facilities, or other response activities undertaken pursuant to the Legal Requirements.

E. The Grantee and all subsequent transferees of an interest in any portion of the Property, who have not received notice of a prior determination by the United States that remediation of DSCP is complete, will provide copies of the instrument evidencing a conveyance of any portion of the Property to the Grantor by certified mail, within fourteen (14) days after the effective date of such transaction.

F. The provisions of this Section 4 shall be deemed to run with the land and shall be binding on all subsequent transferees. The Grantee and all subsequent transferees shall include the provisions of this Section 4 in all subsequent lease, transfer, or conveyance documents relating to the Property, or any portion thereof, that are entered into prior to a determination by the United States that remediation of DSCP is complete.

5. Environmental Restrictions and Covenants.

A. The person or entity to whom the Property is transferred shall neither transfer the Property, lease the Property, nor grant any interest, privilege, or license whatsoever in connection with the Property without the inclusion of the environmental protection

provisions contained herein, and shall require the inclusion of such environmental protection provisions in all further deeds, transfers, leases, or grant of any interest, privilege, or license.

B. Commercial/Industrial Use:

(1) Purposes: The United States has undertaken careful environmental study of the Property and concluded that the best and highest use of the Property is currently limited to commercial and industrial uses, excluding child care. In order to protect human health and the environment and further the common environmental and use plans of the United States, the Commonwealth, and the Grantee, the covenants and restrictions set forth herein shall be included to assure the use of the Property is consistent with the environmental condition of the Property. These restrictions and covenants benefit the public generally and are consistent with state and federal environmental statutes.

(2) Restrictions and Covenants: The Grantee covenants for itself, its successors, and assigns to use in perpetuity the Property solely for commercial and industrial uses, excluding child care, and subject to Subsection (4), never to undertake or allow the construction on or usage of the Property for residential or any other purpose than the maintenance and use of commercial and industrial activities, excluding child care. The Grantee, its successors or assigns will never undertake nor allow any activity on or use of the Property that may adversely affect or detract from the restrictions contained herein. These restrictions bind and run with the Property and are forever hereinafter enforceable.

(3) Enforcement: The restrictions and covenants benefit, the United States, the common redevelopment of the DSCP property, and the buildings and area surrounding the Property and are enforceable by the United States Government and other appropriate governmental authorities as provided for by law. The Grantee covenants for itself, its successor, and assigns that it shall include and otherwise make legally binding these restrictions in all subsequent leases; and transfer or conveyance documents relating to the Property.

(4) Upon consent of PADEP or any successor thereto, other governmental agencies as appropriate, and the Grantor, additional uses may be made of the Property upon the Grantor's execution of and recording in the County and City of Philadelphia land records a restrictive covenant revising and amending this Section 5. Upon approval as provided for in this Subsection (4), the Grantor agrees to execute such revised restrictive covenant in recordable form within a reasonable time, provided that the Grantor shall not be required to expend any funds as a result thereof.

C. Groundwater And Soil Restriction.

The ground or soil below the transferred Property (including Building 13) is underlain by a subsurface plume of non-aqueous phase hydrocarbon products (the

"NAPL Plume") which is located at a depth of approximately 18 to 20 feet below grade. The Grantor acknowledges and agrees that the Grantee is not responsible for the existing subsurface NAPL Plume, and the Grantee is not responsible for any investigation, removal, or remediation, unless and only to the extent that their activities cause additional contamination. Due to the existence of the subsurface NAPL Plume, the following encumbrances apply:

(1) Restrictions and Conditions:

The Grantee covenants for itself, its successors and assigns not to:

(a) Access or use ground water underlying the Property for any purpose, other than water sampling and monitoring, until such time as PADEP agrees and certifies in writing ("Certification") that the ground water underlying the Property is suitable for the requested use and such Certification is placed of record in the County and City of Philadelphia land records. For the purpose of this restriction, "ground water" shall have the same meaning as in section 101(12) of CERCLA.

(b) Conduct any subsurface excavation, digging, drilling or other disturbance of the surface or subsurface underlying the Property below the Permitted Depth, without the prior written consent of the Army Material Command, with an address of Commander, U.S. Army Material Command, Attn: AMCEN, 5001 Eisenhower Avenue, Alexandria, Virginia 22333-0001, except as necessary to respond to an emergency situation where obtaining the Army's prior written consent is not feasible in which case the Grantor shall be notified as soon as practicable.

(c) Undertake nor allow any activity on or use of the Property that would violate the restrictions contained herein.

(2) Enforcement: The restrictions and covenants benefit the United States, the common redevelopment of the DSCP property, and the buildings and area surrounding the Property and are enforceable by the United States government and other appropriate governmental authorities, as provided for by law. The Grantee covenants for itself, its successors, and assigns that it shall include and otherwise make legally binding these restrictions in all subsequent leases, and transfer or conveyance documents relating to the Property.

D. Restriction Pertaining To Possible Elevated Volatile Organic Compound ("VOC") Levels:

Due to the present subsurface NAPL Plume below the Property, the basement of Building 13 on the Property may be subject to elevated levels of VOCs. The Grantee agrees not to use the crawl space or basement of Building 13 on the Property unless adequate ventilation is provided to reduce any harmful levels of VOCs at or below occupational health and safety or other applicable laws or regulations. PADEP has determined that the operation of the existing

ventilation system is necessary to reduce potential threats to human health. The Grantee agrees to maintain and continually operate, except during necessary repair and maintenance, the existing ventilation system until such time as PADEP gives their approval in writing, that operation of the ventilation system is no longer necessary. The Grantor acknowledges and agrees that Grantee's operation of the existing ventilation system shall not be deemed a component of the remedial or removal actions. The Grantee also agrees to maintain seals around pipes, seams and other openings in the subsurface wall of the Property.

E. Hazardous Waste Safety Plan:

While the fee interest to the ground underlying the Property is owned by the Grantor, prior to the storage of any hazardous waste, material, or substance, or petroleum products on the Property, if authorized under this document, the Grantee shall prepare and maintain a plan, certified by a Professional Engineer, for responding to hazardous waste, petroleum or petroleum products, and other chemical spills. The plan shall be submitted, to the Grantor for its review and approval. Such plan shall be independent of the DSCP and shall not rely on Grantor personnel or equipment. Should the Grantor provide any personnel or equipment, because the Grantee, was not, in the opinion of the Base Realignment and Closure Environmental Coordinator, conducting timely response actions, the Grantee agrees to reimburse the Grantor for its actual costs. A copy of the Grantee's plan shall be provided to the Grantor for approval, which shall not be unreasonably withheld or delayed. The Grantee shall also, provide the Grantor with copies of all RCRA manifests for hazardous wastes generated by the Property. Upon conveyance of the fee interest to the ground underlying the Property this requirement shall become void.

6. No Warranties.

Except as otherwise expressly provided for in this Deed or under federal law or any provision of the Lease and MOA, the Property is being conveyed "As Is" and "Where Is" without any representations, warranties, or guaranties as to quantity, quality, title, character, condition, size or kind, or that the Property is in a condition or fit to be used for the purpose for which it is intended, and the conveyance will be without any obligation on the part of the Grantor to make any alterations, repairs, or additions to the Property.

7. Notice Of The Presence Of Asbestos And Covenant.

A. The Grantee is hereby informed and does acknowledge that friable and non-friable asbestos or asbestos-containing materials ("ACM") have been found on the Property as described in the final base-wide EBS. ACM found on the Property has been marked with appropriate signs. As of the date of the Lease the Grantor determined that ACM on the Property did not pose a threat to human health or the environment for the intended use of the Property. All friable asbestos that posed a risk to human health has either been removed or encapsulated by the Grantor prior to the date of the Lease.

B. The Grantee covenants and agrees that its use and occupancy of the Property will be in compliance with all applicable laws relating to asbestos, and that as of the date of the Lease, the Grantor assumes no liability for future remediation of asbestos or damages for personal injury, illness, disability, or death, to the Grantee, or to any other person, including members of the general public, arising from or incident to the purchase, transportation, removal, handling, use, disposition, or other activity under this Deed causing or leading to contact of any kind whatsoever with asbestos on the Property, whether the Grantee has properly warned or failed to properly warn the individual(s) injured. The Grantee agrees to be responsible for any future remediation of asbestos found to be necessary on the Property. The Grantor agrees that the Grantee has no responsibility for damages for personal injury, illness, disability, or death to any person arising prior to the date of the Lease.

C. The Grantee assumes no liability for damages for personal injury, illness, disability, death or property damage arising from (i) any exposure or failure to comply with any legal requirements applicable to asbestos on any portion of the Property arising prior to the Grantor's conveyance or lease of such portion of the Property to the Grantee, or (ii) any asbestos or asbestos containing materials which were located on the Property at any time prior to the date of the Grantor's lease or transfer of the applicable portion of the Property to the Grantee but are no longer located thereon at the time of such lease or transfer, or (iii) any disposal, prior to the Grantor's transfer or lease of the applicable portion of the Property to the Grantee, of any asbestos or asbestos containing materials.

8. Lead-Based Paint Warning And Covenant.

A. The Property does not contain residential dwellings and is not being used for residential purposes. The Grantee is notified that the Property contains a building built prior to 1978 that contains lead-based paint. Such Property may present exposure, to lead from lead-based paint that may place young children at risk of developing lead poisoning. Lead poisoning in young children may produce permanent neurological damage, including learning disabilities, reduced intelligence quotient, behavioral problems and impaired memory.

B. The Grantor's conclusions and determinations concerning known lead-based paint and/or lead-based paint hazards, the location of lead-based paint and/or lead-based paint hazards, and the condition of painted surfaces on the Property is contained in the Environmental Baseline Survey, a copy of which has been provided to the Grantee. Additionally, the Grantee has been provided with a copy of the federally approved pamphlet on lead poisoning prevention. The Grantee hereby acknowledges receipt of all of the information described in this subparagraph.

C. The Grantee shall not permit use of any buildings or structures on the Property for residential habitation without first obtaining the written consent of the Grantor. As a condition of its consent, the Grantor may require the Grantee to: (i) inspect for the presence of lead-based paint and/or lead-based paint hazards; (ii)

abate and eliminate lead-based paint hazards by treating any defective lead-based paint surface in accordance with all applicable laws and regulations; and (iii) comply with the notice and disclosure requirements under applicable Federal and state law. The Grantee agrees to be responsible for any future remediation of lead-based paint found to be necessary on the Property.

D. The Grantee assumes no liability for damages for personal injury, illness, disability, death or property damage arising from (i) any exposure or failure to comply with any legal requirements applicable to lead-based paint on any portion of the Property arising prior to the Grantor's conveyance or lease of such portion of the Property to the Grantee, or (ii) any lead-based paint or lead-based paint containing materials which were located on the Property at any time prior to the date of the Grantor's lease or transfer of the applicable portion of the Property to the Grantee but are no longer located thereon at the time of such lease or transfer, or (iii) any disposal, prior to the Grantor's transfer or lease of the applicable portion of the Property to the Grantee, of any lead-based paint or lead-based paint containing materials.

9. Notice Of The Presence Soil Gas Vapors

A. Based on information obtained from a soil gas survey, the Grantor has documented the presence and determined the general location, extent, nature and source of soil gas vapors [primarily methane gas but also including VOC's] ("Soil Gas Vapors") which may accumulate in the sub-surface soils on the Property, including within the Permitted Depth. The Grantor has determined that the source of the Soil Gas Vapors is the biodegradation of the NAPL Plume underlying the Property. While the Grantor has determined that the Property is suitable for its intended purpose for non-residential uses, the Soil Gas Vapors could present a hazardous condition during ground construction activities or within confined subterranean building areas or underground utilities, unless properly managed. The Grantee is advised that certain federal, state and local laws or regulations (including, but not limited to occupational safety and health regulations regarding monitoring, control and preventive measures) may be applicable during construction and maintenance activity, and, with respect to construction activity, there may be a need to implement certain design features for buildings on the Property. Accordingly, the Grantee as its sole obligation with respect to such Soil Gas Vapors, shall ensure that appropriate measures, as required by applicable laws or regulations or common practice, are taken during any construction or maintenance activity on the Property to detect and mitigate, using common and precautionary engineering, construction, or, with respect to construction activity, design measures, any unacceptable levels of Soil Gas Vapors. If any unacceptable levels of Soil Gas Vapors are detected that cannot be controlled using common and precautionary engineering, construction or, with respect to construction activity, design measures, the Grantee shall ensure the cessation of such activities and ensure that the Grantor is promptly notified of these conditions. Upon notification, the Grantor shall promptly notify PADEP, and, in consultation with PADEP and Grantee (or the then current owner(s) of the Property) and any then current tenants or subtenant(s) of the Property who are or could be affected by such unacceptable levels of Soil Gas Vapors,

the Grantor shall, in its sole discretion, and at its sole cost and expense, promptly either (i) take any necessary remedial action to reduce the level of Soil Gas Vapors to a level that can be controlled with common and precautionary engineering, construction or, with respect to construction activity, design measures, or (ii) provide for precautionary mitigation measures to protect human health and safety. Any such remedial action or precautionary mitigation measures taken by the Grantor shall be coordinated with any affected Grantee (or the then current owner(s) of the Property) and any then current affected tenants or subtenants of the Property and approved in writing by PADEP, and shall not cause a significant increase in the cost of redeveloping the Property or cause a material adverse affect on the physical re-use of the Property.

B. Neither the Grantee nor any successor, successor-in-title, assignee, grantee or transferee of Grantee, or any other person or entity that acquires or possesses ownership or control of all or any part of the Property, shall transfer or convey the Property, lease or sublease the Property, or grant any interest, right, privilege or license whatsoever to or in connection with the Property without including the provisions contained in this Paragraph 9 verbatim or by express reference. The provisions of this Paragraph 9 shall be deemed to run with the land and shall be legally binding on the Grantee, its successors and assigns, and all subsequent grantees or transferees and all persons or entities that at any time hereafter acquire ownership or control, of all or any portion of the Property.

10. Preservation Covenant For The Property.

A. In consideration of the conveyance of the Property the Grantee hereby covenants on behalf of itself, its heirs, successors, and assigns at all times to the Pennsylvania State Historic Preservation Officer ("SHPO") to preserve and maintain the Property in accordance with the recommended approaches in the Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings (U. S. Department of the Interior, National Park Service 1992) (Standards) or design guidelines approved by the SHPO in order to preserve and maintain those qualities that make the Property eligible for inclusion in the National Register of Historic Places. If the Grantee desires to deviate from the Standards or SHPO approved design guidelines, the Grantee will notify and consult with the SHPO in accordance with paragraphs B, C, and D of this covenant.

B. The Grantee will notify the SHPO in writing prior to undertaking any construction, alteration, remodeling, demolition, or other modifications to the Property that would affect the integrity or appearance of the DSCP Historic District, Philadelphia, Pennsylvania ("District"), with the exception of those activities listed in paragraph C of this covenant. Such notice shall describe in reasonable detail the proposed undertaking and its effect on the integrity of the District.

C. The following activities have limited potential to affect the Property within the District and may be implemented without further review by the SHPO or the Advisory

Council on Historic Preservation ("Council") when they are limited solely to the following:

(1) Interior:

(a) Plumbing rehabilitation and replacement, including pipes and fixtures;

(b) Heating system rehabilitation and replacement, including furnaces, pipes, radiators or other heating units;

(c) Electrical wiring, including wiring and receptacles;

(d) Restroom improvements for handicapped access, provided that the work is contained within an existing restroom;

(e) Interior treatments (floors, walls, ceilings, woodwork), provided the work is limited to painting, refinishing, repapering or laying carpet or other suitable flooring material. Construction of temporary walls (timber or steel framed with drywall finish) is permitted. No removal of existing interior doors, permanent interior walls, floors, or support columns, original to the period of significance, will be permitted;

(f) Insulation, provided it is restricted to ceilings and attic spaces; and

(g) Building code compliance.

(2) Exterior:

(a) Caulking, weatherstripping, reglazing;

(b) Sidewalk and curbing replacement;

(c) Gutters and downspout replacement;

(d) Roof repair or replacement which uses in-kind materials and does not alter the pitch of the original roof;

(e) Storm windows, provided they conform to the original shape and size of the historic windows and that the meeting rail coincides with that of the existing sash. Color should match existing windows and trim;

(f) Clean and seal treatments which do not include sand blasting or the use of chemicals which have not been approved for use by the Pennsylvania State Historic Preservation Officer; and

(g) In-kind replacement is understood to mean that the new features or replacement items will duplicate the material, dimensions and detailing of the original. No removal of existing exterior doors, enlarging or filling in of door and window openings, or removal of permanent exterior walls, original to the period of significance, will be permitted. In-kind replacements apply to but are not limited to:

(1) Porches and loading platforms such as stairs, railings, posts and columns, brackets, cornices, and flooring;
(2) Roofs;
(3) Siding;
(4) Exterior architectural details and feature, including but not limited to brickwork, lintels, and trim;
(5) Windows, includes both trim and the sash; and
(6) Doors.

D. Within thirty (30) calendar days following receipt of notification provided by the Grantee pursuant to paragraph B of this covenant, the SHPO will respond to the Grantee in writing as follows:

(1) Notify the Grantee that the proposed project meets the Standards or approved design guidelines and may proceed; or

(2) Notify the Grantee that the proposed project does not meet the Standards or approved design guidelines or would otherwise adversely affect the District and will require further consultation with the SHPO to explore alternatives before the Grantee can proceed with the proposed undertaking.

If the SHPO fails to respond to the Grantee's written notice as described in paragraph B, within thirty (30) calendar days of the SHPO's receipt of the same, then the Grantee may proceed with the Proposed undertaking without further consultation with the SHPO.

E. If the response provided to the Grantee by the SHPO pursuant to paragraph D of this covenant requires consultation with the SHPO, both parties will consult in good faith to explore alternatives that will minimize, mitigate or avoid adverse effects to the District by adhering to a mutually agreeable treatment/mitigation plan that the Grantee will implement. If the parties are unable to arrive at such mutually agreeable treatment/mitigation plans, the Grantee shall request the recommendations of the Council. Within thirty (30) calendar days following receipt of pertinent documentation, the Council will provide the Grantee with recommendations to mitigate, minimize or avoid adverse effects to the District. The Grantee shall advise the SHPO and Council how it intends to respond to the Council's recommendations prior to initiating project activities.

Pursuant to this covenant, any treatment/ mitigation plans to which the Grantee and the SHPO or Council, as appropriate, agree shall be carried out solely at the expense of the Grantee.

F. The SHPO shall be permitted at all reasonable times to inspect the Property to ascertain its condition and to fulfill its responsibilities hereunder.

G. In the event of a violation of this covenant, and in addition to any remedy now or hereafter provided by law, the SHPO may, following reasonable notice to the Grantee, institute suit to enjoin said violation or to require the rehabilitation or maintenance of contributing buildings within the District. The successful party shall be entitled to recover all costs or expenses incurred in connection with such a suit, including all court costs and attorneys fees.

H. In the event the Property is substantially destroyed by fire or other casualty, or if not totally destroyed, the damage thereto is so serious that preservation and rehabilitation would be economically prohibitive in the reasonable judgment of the

Grantee, as concurred in by the SHPO, this covenant shall be terminated for the Property on the date the Grantee obtains the SHPO's concurrence. Upon such termination, the Grantee shall deliver a duly executed and acknowledged notice of such termination to the SHPO, and record a duplicate original of said notice in the Office of the Recorder of Deeds of Philadelphia County. Such notice shall be conclusive evidence in favor of every person dealing with the Property as to the facts set forth therein.

I. The Grantee agrees that the SHPO may at its discretion, without prior notice to the Grantee, convey and assign all or part of its rights and responsibilities contained herein to a third party.

J. This covenant is binding on the Grantee, its heirs, successors, and assigns in perpetuity, unless explicitly waived by the SHPO. Restrictions, stipulations, and covenants contained herein shall be inserted by the Grantee verbatim or by express reference in any deed or other legal instrument by which it divests itself of either the fee simple title or any other lesser estate in the Property, or any part thereof.

K. The failure of the SHPO to exercise any right or remedy granted under this Deed shall not have the effect of waiving or limiting the exercise of any other right or remedy or the use of such right or remedy at any other time.

L. This covenant shall be a binding servitude upon the Property, and shall be deemed to run with the land. Execution of this covenant shall constitute conclusive evidence that the Grantee agrees to be bound by the foregoing conditions and restrictions and to perform the obligations herein set forth.

11. Notice of Non-Discrimination.

With respect to activities related to the Property, the Grantee shall not discriminate against any person or persons or exclude them from participation in the Grantee's operations, programs or activities conducted on the Property, because of race, color, religion, sex, age, handicap, or national origin.

12. Statutory Indemnification of Grantee.

The Grantor recognizes and agrees to fulfill its obligation to hold harmless, defend, and indemnify the Grantee and any successor, assignee, transferee, lender, or lessee of the Grantee or its successors and assigns, as required by Section 330 of the Department of Defense Authorization Act of 1993, as amended, a copy of which is attached as Exhibit C and to otherwise meet its obligations under law.

13. ANTI-DEFICIENCY ACT

The GRANTOR'S obligation to pay or reimburse any money under this Deed is subject to the availability of appropriated funds to the Department of the Army, and

nothing in this Deed shall be interpreted to require obligations or payments by the United States in violation of the Anti-Deficiency Act provided that the Grantor shall otherwise comply with all applicable statutory requirements and its obligations under the terms of this Deed.

14. CONTINUING OBLIGATION

To the extent required by the terms of this Quitclaim Deed, Grantee agrees to include the terms, covenants, promises, obligations, undertakings, limitations and restrictions contained in this Quitclaim Deed in all subsequent documents or instruments by which Grantee conveys or transfers ownership or control of all property or any portion of the Property. The Grantor acknowledges that PAID, as Grantee hereunder, intends to be, and such subsequent documents and instruments shall provide that PAID, as the Grantee, shall be, released, relieved and discharged of all liability, responsibility and obligation of any kind with respect to the covenants, obligations, promises, undertakings, limitations and restrictions in this Quitclaim Deed not accruing during PAID's ownership of the Property (or portion thereof) so conveyed or transferred. However, PAID's obligation to comply with and observe such terms, covenants, promises, obligations, undertakings, limitations and restrictions during PAID's period of ownership of the Property shall not be conditioned upon PAID's obtaining such a release in subsequent documents and instruments conveying or transferring ownership or control of all or any portion of the Property.

End Of Text

IN WITNESS WHEREOF, the Grantor has caused this Deed to be executed in its name by the Acting Deputy Assistant Secretary of the Army (I&H), and the seal of the Department of the Army to be hereunto affixed as of the 3rd day of October 2001.

UNITED STATES OF AMERICA

By: [redacted]

Acting Deputy Assistant Secretary of the Army
(Installations and Housing)
OASA(I&E)

Signed and sealed and delivered
in the presence of:

Witness [redacted]

Witness [redacted]

COMMONWEALTH OF VIRGINIA)
COUNTY OF ARLINGTON) ss:

I, the undersigned, a Notary Public in and for the Commonwealth of Virginia; County of Arlington, whose commission as such expires on the 30th day of November 2002 do hereby certify that this day personally appeared before me in the Commonwealth of Virginia, County of Arlington, Joseph W. Whitaker, Acting Deputy Assistant Secretary of the Army (I&H), whose name is signed to the foregoing instrument and who acknowledged the foregoing instrument to be his free act and deed, dated this 3rd day of October 2001, and acknowledged the same for and on behalf of the UNITED STATES OF AMERICA.

[redacted]
Notary Public

ACCEPTANCE: The Philadelphia Authority For Industrial Development, does hereby accept and approve this Quitclaim Deed and agrees to all of the terms and conditions thereof as of the 9th day of October 2001.

THE PHILADELPHIA AUTHORITY
FOR INDUSTRIAL DEVELOPMENT

BY: [redacted]
Chairman

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF PHILADELPHIA)

I, the undersigned, a Notary Public in and for the Commonwealth of Pennsylvania, County of Philadelphia, whose commission as such expires on the 2nd day of April, 2005, do hereby certify that this day personally appeared before me in the Commonwealth of Pennsylvania, County of Philadelphia, [redacted], whose name is signed to the foregoing instrument and acknowledged the foregoing instrument to be his free act and deed, dated this 9th day of October 2001, and acknowledged the same for and on behalf of the Philadelphia Authority For Industrial Development

[redacted]
Notary Public

NOTARIAL SEAL
[redacted] Notary Public
City of Philadelphia, Phila. County
My Commission Expires April 2, 2005

DESCRIPTION OF BUILDING #13

DESCRIPTION OF AERIAL RIGHTS

All that certain lot or piece of ground with buildings and improvements thereon erected, situate in the 26th Ward of The City of Philadelphia and described according to a Survey and Plan of Property made by James P. Vesey, Surveyor and Regulator of the Second Survey District on May 16, 1997, as follows:

Beginning at a point on the Northwesterly side of 20th Street. (70' wide), lying above horizontal plane 17 feet above City Of Philadelphia Datum, at the distance of 769.09' Southwestwardly from the Southwesterly side of Oregon Avenue (120' wide); **Thence** extending, partly along the Southeasterly terminus of a proposed 25' wide easement for stormwater and sanitary purposes which extends Northwestwardly, and partly along the Southeasterly terminus of a proposed easement for ingress and egress which extends Northwestwardly, and along the Northwesterly side of said 20th Street S. 15° 00' 00" W., the distance of 820.91' to a point on the Northeasterly Right-of-Way Line of The Delaware River Port Authority; Thence extending along the said Northeasterly Right-Of-Way Line of the Delaware River Port Authority, N. 75° 00' 00" W., the distance of 195.01' to a point; Thence extending, partly along the Northwesterly terminus of said proposed easement for ingress and egress, partly crossing a proposed 25' wide easement for stormwater and sanitary purposes which extends Southeastwardly and Northwestwardly, and partly through a wall, N. 15° 00' 00" E., the distance of 327.57' to a point within a wall; Thence extending, through a wall, N. 75° 00' 00" W., the distance of 150.32' to a point; Thence extending N. 15° 00' 00" E., the distance of 20.77' to a point; Thence extending S. 75°00'00" E., the distance of 25.99' to a point; Thence extending, partly along the Northwesterly terminus of the said proposed 25' wide easement for stormwater and sanitary purposes, N. 15° 00' 00" E., the distance of 478.00' to a point; Thence extending S. 75° 00' 00" E., the distance of 287.60' to a point; Thence extending S. 15° 00' 00" W., the distance of 5.43' to a point; Thence extending S. 75° 00' 00" E., the distance of 31.74' to a point on the Northwesterly side of said 20th Street, being the first mentioned point and place of beginning.

Containing in Area 223,520.3 Sq. Ft. or 5.13132 Acres

[redacted]

Surveyor & Regulator
Second Survey District

EXHIBIT A

PERSONAL PROPERTY LIST

[INTENTIONALLY OMITTED]

Exhibit B

SEC. 330. INDEMNIFICATION OF TRANSFEREES OF CLOSING DEFENSE PROPERTY. 10 U.S.C. 2687 note.

(a) In GENERAL.- (1) Except as provided in paragraph (3) and subject to subsection (b), the Secretary of Defense shall hold harmless, defend, and indemnify in full the persons and entities described in paragraph (2) from and against any suit, claim, demand or action, liability, judgment, cost or other fee arising out of any claim for personal injury or property damage (including death, illness, or loss of or damage to property or economic loss) that results from, or is in any manner predicated upon, the release or threatened release of any hazardous substance or pollutant or contaminant as a result of Department of Defense activities at any military installation (or portion thereof) that is closed pursuant to a base closure law.

(2) The persons and entities described in this paragraph are the following:

(A) Any State (including any officer, agent; or. Employee of the State) that acquires ownership or control of any facility at a military installation (or any portion thereof) described in paragraph (1).

(B) Any political subdivision of a State (including any officer, agent, or employee of the State) that acquires such ownership or control.

(C) Any other person or entity that acquires such ownership or control.

(D) Any successor, assignee, transferee, lender, or lessee of a person or entity described in subparagraphs (A) through (C)

(3) To the extent the persons and entities described in paragraph (2) contributed to any such release or threatened release, paragraph (1) shall not apply.

(b) CONDITIONS.-No indemnification may be afforded under this section unless the person or entity making a claim for indemnification-

(1) notifies the Department of Defense in writing within two years after such claim accrues or begins action within six months after the date of mailing, by certified or registered mail, of notice of final denial of the claim by the Department of Defense;

(2) furnishes to the Department of Defense copies of pertinent papers the entity receives;

(3) furnishes evidence or proof of any claim, loss, or damage covered by this section; and

(4) provides, upon request by the Department of Defense, access to the records and personnel of the entity for purposes of defending or settling the claim or action.

EXHIBIT C

(c) AUTHORITY OF SECRETARY OF DEFENSE.-(1) In any case in which the Secretary of Defense determines that the Department of Defense may be required to make indemnification payments to a person under this section for any suit, claim, demand or action, liability, judgment. cost or other fee arising out of any claim for personal injury or property damage referred to in subsection (a)(1), the Secretary may settle or defend, on behalf of that person, the claim for personal injury or property damage.

(2) In any case described in paragraph (1), if the person to whom the Department of Defense may be required to make indemnification payments does not allow the Secretary to settle or defend the claim, the person may not be afforded indemnification with respect to that claim under this section.

(d) ACCRUAL OF ACTION.-For purposes of subsection (b)(1) the date on which a claim accrues is the date on which the plaintiff knew (or reasonably should have known) that the personal injury or property damage referred to in subsection (a) was caused or contributed to by the release or threatened release of a hazardous substance or pollutant or contaminant as a result of Department of Defense activities at any military installation (or portion thereof) described in subsection (a)(1).

(e) RELATIONSHIP TO OTHER LAW.-Nothing in this section shall be construed as affecting or modifying in any way section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9620(h)).

(f) DEFINITIONS.-In this section:

(1) The terms "facility", "hazardous substance", "release" and "pollutant or contaminant" have the meanings given such terms under paragraphs (9), (14), (22), and (33) of section 101 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, respectively (42 U.S.C. 9601 (9), (14), (22), and (33)).

(2) The term "military installation" has the meaning given such term under section 2687(e)(1) of title 10, United States Code.

(3) The term "base closure law" means the following:

(A) The Defense Base Closure and Realignment Act of 1990 (10 U.S.C. 2687 note).

(B) Title II of the Defense Authorization Amendments and Base Closure and Realignment Act (10 U.S.C. 2687

(C) Section 2687 of title 10, United States Code.

(D) Any provision of law authorizing the closure or realignment of a military installation enacted on or after the date of the enactment of this Act.

Certificate of Address:

I certify that the precise street address of the grantee in the foregoing is as follows:

Philadelphia Authority for Industrial Development
2600 Centre Square West
1500 Market Street
Philadelphia, Pennsylvania 19102

Signed on behalf of the Grantee:

[redacted]

Print Name [redacted]

Lease in Furtherance of Conveyance, Ground Property (see pp. 1-2, ¶ 1. a.)

DEPARTMENT OF THE ARMY
LEASE IN FURTHERANCE OF CONVEYANCE
UNDER BASE REALIGNMENT AND CLOSURE (BRAC)
WITH
PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT FOR
A PORTION OF THE
DEFENSE SUPPLY CENTER PHILADELPHIA
PHILADELPHIA, PENNSYLVANIA

DACA-31-1-01-314

WHEREAS, the United States of America, acting by and through the DEPUTY ASSISTANT SECRETARY OF THE ARMY (INSTALLATIONS AND HOUSING), hereinafter referred to as the ("Army"), and the Philadelphia Authority for Industrial Development, a body corporate and politic and existing under the laws of the Commonwealth of Pennsylvania (hereinafter referred to as "PAID" or "Lessee"), have entered into an Agreement of Purchase and Conveyance ("Conveyance Agreement"), dated November 21, 2000, a fully-executed copy of which is attached hereto as Exhibit "A" and incorporated herein by reference, for the sale of a portion of the property located at 2800 South 20th Street, Philadelphia, Pennsylvania, commonly known as the Defense Supply Center Philadelphia ("DSCP"), which portion of the property is approximately depicted in cross-hatch on Exhibit "B", attached hereto and made a part hereof, and the personal property, if any, thereon located, (the foregoing hereinafter referred to collectively as the "Property"); and

WHEREAS, in accordance with the Conveyance Agreement, the Army has agreed to lease to Lessee, pending conveyance of the fee simple title thereto, the Ground Property (as defined in the Conveyance Agreement) portion of the Property, all as more particularly described in Exhibit "C", attached hereto and made a part hereof, (excepting the remediation system for the NAPL Plume (as hereinafter defined)) (the foregoing being referred to hereinafter collectively as the "Leased Premises"), as and when the Army is able to issue a FOSL (as hereinafter defined); and

WHEREAS, the Army intends to convey fee simple title to the Leased Premises to PAID, by quitclaim deed in accordance with the terms of the Conveyance Agreement, upon the full satisfaction of the Ground Property Closing Requirements (as defined in the Conveyance Agreement), and PAID has agreed to accept such conveyance(s) provided, and as soon as, the above-referenced conditions are met.

NOW THEREFORE, THIS LEASE is made between the ARMY (on behalf of the United States) and PAID (collectively, the "Parties" or, when singular, the "Party").

WITNESSETH:

That the Army, by the authority of Title 10, United States Code, Section 2667, and for the consideration hereinafter set forth and in the Conveyance Agreement, hereby agrees to lease to PAID the "Leased Premises" (as defined in the foregoing WHEREAS paragraph and incorporated herein by reference as if fully set forth at length), with the lease term and PAID's possession and occupancy with respect to the Leased Premises to commence as provided for in paragraph 2 of this Lease.

THIS LEASE is granted upon and subject to the following conditions:

I. USE OF THE LEASED PREMISES

a. During the Term (as hereinafter defined) of this Lease, the sole purpose for which the Leased Premises and any improvements thereon may be used by Lessee, its sublessees, licensees, employees, agents, contractors or subcontractors, in the absence of prior written approval of the Army for additional uses of the Leased Premises (which approval shall not be unreasonably withheld, delayed or

conditioned), is for the use or uses consistent with the Re-Use Plan (as defined in the Conveyance Agreement) which are non-residential uses, such as, by way of example, commercial, office, industrial and retail uses, excluding child care, and for the "Subjacent Rights" (as herein defined) (hereinafter, collectively, "Permitted use of the Leased Premises").

b. Prior to any approval of a change in the Permitted use of the Leased Premises requested by the Lessee, the Lessee shall furnish, at the Lessee's expense, any additional environmental analysis and documentation, deemed necessary by the Army to comply with the National Environmental Policy Act of 1969, as amended, and implementing regulations, and other applicable environmental laws and regulations. In granting approval for the change in use, the Army may impose such additional environmental protection provisions as it deems reasonably appropriate after consultation with Lessee and, as necessary, with the appropriate Environmental Agencies (including, but not limited to, PADEP and, as appropriate, EPA) (as such terms are defined in the Conveyance Agreement). In imposing any such additional environmental protection provisions, the Army shall use reasonable means, without significant additional cost to the Army, to avoid and/or minimize interference with the Lessee's use of the Leased Premises.

c. The Leased Premises is leased to Lessee hereunder subject to the easements for the benefit of the owners and collective redevelopment of the entire property that formerly comprised the DSCP, as set forth in the Declaration of Easements (as defined in the Conveyance Agreement).

d. Without in any way limiting the foregoing provisions of this Paragraph 1 or the terms and provisions of the Declaration of Easements (as defined in the Conveyance Agreement), the phrase "Permitted use of the Leased Premises" shall include and permit, and Lessee and its sublessees, licensees, employees, agents, contractors and subcontractors shall have the right to exercise and pursue, the following rights and privileges (collectively, the "Subjacent Rights"):

(i) within, over, on, through and across the Leased Premises (including the surface thereof), for vehicular and pedestrian access, ingress and egress to, from and on the Leased Premises and the buildings, improvements and structures now or hereafter existing within or upon the Leased Premises or the Air Rights Property (as defined in the Conveyance Agreement) above the Leased Premises), and vehicular parking thereon;

(ii) across, over, through, in, upon under and within the air space and soil of the Leased Premises down to and including the Permitted Depth (as defined in the Conveyance Agreement), to construct, develop, service, operate, maintain, alter, install, modify, repair and replace the structural support systems of the buildings, structures or improvements now or hereafter located on or in the Leased Premises or the Air Rights Property (as defined in the Conveyance Agreement) above the Leased Premises), and any part thereof to the extent of the Permitted Depth, which structural support system shall include, but not be limited to, all load-bearing members such as columns, footings, foundations, cross-bracings and connections which support the building laterally, subjacent to the building grade, and/or otherwise, including the unlimited right to relocate, modify, repair, replace, shore-up or otherwise reinforce or in any other manner to deal with such structural support systems; and

(iii) to service, operate, maintain, alter, install, modify, repair, relocate or replace, in whole or in part, or add to, all those areas set aside in any part of the Leased Premises to the extent of the Permitted Depth for the functioning of mechanical facilities, communication lines, heating, ventilation, air conditioning systems, electrical power systems, plumbing and sewer systems and utility systems, including, but not limited to, all taps, laterals, lines, mains, conduits, facilities, pipes, systems, appurtenances, components, parts and equipment, fire protection systems, fuel systems including gas lines, sanitary sewer and storm sewer, fire suppression and all other items, equipment and components relating to any of the foregoing, found within or upon any part of the Leased Premises to the extent of the Permitted Depth.

e. Lessee shall be entitled to possession and occupancy of the Leased Premises as provided for in this Lease, free and clear of all leases, licenses, occupants, restrictions, liens, and encumbrances, except as provided for in the Conveyance Agreement and this Lease.

2. TERM

The term of this Lease (the "Term") shall commence upon the full execution of this Lease and shall continue until the earlier to occur of: (i) the fee interest in the Leased Premises is conveyed to Lessee in accordance with the terms and conditions of the Conveyance Agreement, (ii) fifty (50) years from the date of execution hereof, or (iii) as provided for under the paragraph on TERMINATION; however, if the Term of this Lease has not been terminated prior to the expiration of the aforesaid fifty (50) year period, the Term of this Lease shall automatically renew for successive term or terms of ten (10) years each, according to the same conditions found herein, including, but not limited to, the consideration, so long as the Conveyance Agreement between the Army and PAID has not terminated.

3. CONSIDERATION

a. The consideration to the Army for this Lease is the care, custody, maintenance, repair and protection obligations of the Lessee, and the consideration to Lessee is the use and enjoyment of the Leased Premises, all in accordance with the terms of this Lease.

b. It is understood and agreed that as part of the consideration for the Army's letting of the Leased Premises pursuant to this Lease, Lessee shall make, or cause to be made, all reasonable expenditures required to satisfy Lessee's care, custody, maintenance, repair and protection obligations set forth in Paragraph 11 of this Lease.

c. Lessee shall keep or cause to be kept adequate records and books of accounts showing the costs and/or expenses incurred by itself or its sublessees in the provision of labor, material, equipment, supplies, services, and other items of cost or expense of any nature incurred by itself or its sublessees in the performance of any item of work or service in the nature of repair, restoration, protection and maintenance of the Leased Premises which is required by Paragraph 11 of this Lease to be performed by Lessee. The Lessee shall provide the Army and/or the Defense Logistics Agency ("DLA") with access to such records and books of account and proper facilities for inspection thereof at all reasonable times.

4. NOTICES

All correspondence and notices to be given pursuant to this Lease shall be in writing and addressed if to the Lessee, to Philadelphia Authority for Industrial Development, Attention: John S. Grady, Senior Vice President, Philadelphia Industrial Development Corporation, 1500 Market Street, 2600 Centre Square West, Philadelphia, PA 19102; with a separate copy sent to Ellen Brown, Esq., Counsel, Philadelphia Industrial Development Corporation, 1500 Market Street, 2600 Centre Square West, Philadelphia, PA 19102; and, if to the Army, to the District Engineer, U.S. Army Corps of Engineers, Attention: Chief, Real Estate Division, P.O. Box 1715, Baltimore, Maryland 21203-1715; and, if to the DSCP Installation, Commander, Defense Supply Center Philadelphia, 700 Robbins Avenue, Philadelphia, PA 19111, or as may from time to time otherwise be directed by the parties. Notices must be given in a properly sealed envelope, addressed as aforesaid, and sent by recognized overnight mail carrier or deposited postage prepaid by either registered mail, return receipt requested, or by certified mail, return receipt requested in a post office regularly maintained by the United States Postal Service. The service of the notice shall be deemed complete upon the receipt of said notice, or the refusal thereof, by the applicable party. Each party shall use its best efforts to notify the other party in the event that the addressees identified above change.

5. AUTHORIZED ARMY REPRESENTATIVES; AND DEFINITIONS

a. Except as otherwise specifically provided in this Lease, any reference herein to "Army", "District Engineer", or "Installation Commander" shall include their duly authorized agents and

representatives. For the purpose of this Lease, the Defense Logistics Agency ("DLA") shall be deemed to be an agent of the Army.

b. "Lessee" shall include "PAID," its agents, employees, sublessees, licensees, transferees, successors, and/or assigns. This Lease shall not, in and of itself, be construed to grant PAID's agents, employees, successors, assigns, sublessees, or licensees any rights or third party beneficiary status under the Conveyance Agreement between the Army and PAID.

c. For purposes of this Lease all capitalized terms not otherwise defined in this document shall have the same meaning(s) as found in the Conveyance Agreement herein referenced.

6. TERMINATION AND REVOCATION

a. The Parties to this Lease are charged at all times with full knowledge of all the limitations and requirements of this Lease.

b. In the event the Conveyance Agreement between the Army and PAID terminates in accordance with the express terms thereof, or PAID fails to accept conveyance of the Ground Property in accordance with the terms of the Conveyance Agreement, this Lease shall automatically terminate without the need for further action by either Party to this Lease.

7. APPLICABLE LAWS AND REGULATIONS

a. The Lessee shall comply with all applicable Federal, State and local laws, ordinances and regulations that are or may become applicable to Lessee's operations on the Leased Premises, including but not limited to, those regarding the environment (but not as to those obligations for which the Army is responsible, as set forth in Paragraph 19 below) and, to the extent applicable and except as otherwise set forth in this Lease, construction, health, safety, food service, water supply, sanitation, use of pesticides, and licenses or permits to do business. Notwithstanding the foregoing, Lessee shall not be in default under this Lease pending Lessee's contest of the violation of a law, ordinance, or regulation, through an initial administrative or judicial adjudication or determination.

b. Specific provisions pertaining to environmental requirements are set forth in Paragraph 19, entitled ENVIRONMENTAL PROTECTION and Paragraph 20, entitled NOTICE OF THE PRESENCE OF SOIL GAS VAPORS.

8. CONDITION OF LEASED PREMISES AND JOINT INSPECTION

a. The Lessee has inspected and knows and, subject to the provisions of Paragraphs 19(b) and 20(a) herein, accepts the condition and state of repair of the Leased Premises. It is understood and agreed that the Leased Premises are leased in an "as is" and "where is" condition, without any representation or warranty by the Army (other than the representation and warranties set forth in this Lease and/or in the Conveyance Agreement) concerning the state of repair or condition of the Leased Premises, and without obligation on the part of the Army to make any alterations, repairs or additions, except as may be specifically required by law or provided for in this Lease. The Lessee acknowledges that the Army has made no representation or warranty concerning the condition and state of repair of the Leased Premises nor any agreement or promise to alter, improve, adapt or repair the Leased Premises, except as expressly provided for in this Lease and/or the Conveyance Agreement. The Parties specifically agree that the provisions of this paragraph in no way alter the Army's obligations with respect to the Leased Premises, as required by applicable law, this Lease and/or the Conveyance Agreement, including, but not limited to, environmental remediation of hazardous substances, petroleum, and petroleum derivatives, existing on the Leased Premises upon the commencement of this Lease (including, but not limited to, the remediation of the NAPL Plume).

b. The Army has completed an Environmental Baseline Survey ("Environmental Baseline Study" or "EBS"), dated December 16, 1994, for the Leased Premises, and a Finding of Suitability to Lease

("FOSL") for the Leased Premises setting forth the basis for the Army's determination that the Leased Premises are suitable for leasing, both of which have been provided to the Lessee, and are attached hereto and made a part hereof as Exhibits D and E, respectively, and the Lessee acknowledges receipt thereof.

9. TRANSFERS, ASSIGNMENTS AND SUBLEASING

a. Without the prior written consent of the Army through the District Engineer, or as specifically permitted by the terms of this Lease, the Lessee shall not sublease, license, or grant any interest under this Lease (collectively "sublease"). If required, the Army's consent shall not be unreasonably withheld, conditioned, or delayed and shall be deemed granted if a response is not received by the Lessee within five (5) business days of the receipt by the Army of a written request for consent. Every sublease shall specifically identify and require compliance with the Environmental Protection provisions set out in Paragraphs 19 and 20 of this Lease and shall state that it is subject to the terms and conditions of this Lease and that, in case of any conflict between the instruments, this Lease will control. The Lessee shall provide each sublessee with, and make available as appropriate to licensees, a copy of this Lease and the Conveyance Agreement.

b. The Lessee may not assign this Lease without the prior written consent of the Army through the District Engineer, which consent will not be unreasonably withheld, conditioned or delayed (except that, without the consent of the Army or the District Engineer, Lessee shall have the right to assign this Lease to another DOD-approved Local Redevelopment Authority ("LRA") within the City of Philadelphia), and no assignment shall be valid unless the assignee shall, by an instrument in a form sufficient for recording, enter into an assumption agreement and assume all of the Lessee's obligations under this Lease. A duplicate original of that assumption agreement will be delivered to the Army within thirty (30) days after the making of the assignment. Upon compliance with the foregoing condition, but not otherwise, the Lessee shall be released and discharged from any and all liability under this Lease from and after the date of the assignment. The assignee shall not have, solely by virtue of such assignment, any right or third party beneficiary status under the Conveyance Agreement between the Army and PAID and shall not be entitled to a conveyance of the Leased Premises or a portion thereof, except as permitted under the Conveyance Agreement.

c. The Lessee further agrees that in the event of an assignment of this Lease or sublease of the Leased Premises, it shall provide to the EPA and Pennsylvania Department of Environmental Protection ("PADEP") by certified mail a copy of the agreement of assignment of this Lease or sublease of the Leased Premises within 14 days after the effective date of such transaction. The Lessee may delete the financial terms and any other proprietary information from the copy of any agreement of assignment or sublease furnished pursuant to this condition.

d. The Army's approval of any sublease or assignment shall not be taken or construed to diminish or enlarge any of the rights or obligations of either of the parties under this Lease.

e. Notwithstanding the foregoing provisions of this Paragraph 9, the Army hereby approves of the sublease of the Leased Premises (or any respective portion thereof) to the grantee or transferee of the Air Rights Property situate immediately above, and within the perimeter description of, the Leased Premises (or such respective portion thereof).

10. UTILITIES

a. The Lessee shall be responsible, or shall cause or require any sublessee, licensee, successor or assign of Lessee, to make arrangements with public utility providers or other appropriate utility providers for the supply and provision of all utilities (including, but not limited to, electric, gas, water, sanitary sewer, storm sewer and fire suppression) (collectively, the "Utility Services") required by Lessee or any sublessee, licensee, successor or assign of Lessee in the use or occupation of the Leased Premises at the sole expense of Lessee or any such sublessee, licensee, successor or assign of Lessee. In connection with the provision, supply and consumption of the Utility Services during the Term of this

Lease, Lessee and its employees, agents, representatives, contractors, subcontractors, sublessees and licensees, and the employees, agents, representatives, contractors and subcontractors of any utility provider (public or private), shall have access to and the right to use, connect with, repair, maintain, relocate, replace, install and/or expand or extend all mains, lines, conduits, facilities, pipes, taps, laterals, systems, appurtenances, components, parts and other items related to the rendering, provision or delivery of Utility Services and located within or serving the Leased Premises. The Army or DLA shall, at no cost or expense to the Lessee or any sublessee, licensee, successor or assign of Lessee, obtain utilities directly from public utility providers or other utility providers as may be necessary to support the environmental restoration of the Leased Premises.

b. The Army shall cooperate with the Lessee, its sublessees and any third-parties designated by the Lessee, including any alternative utility provider, to secure the necessary real property interests in Army owned property which the Lessee or any sublessee, licensee, successor or assign of Lessee shall require in order to install and provide Utility Services to the Leased Premises.

11. PROTECTION AND MAINTENANCE OF THE PROPERTY

a. During the Term of this Lease, and except as set forth in Paragraphs 19 or 20 hereof, the Lessee shall keep the Leased Premises in as good an order and in as clean and safe a condition as existed on the commencement of this Lease, by and at the expense of the Lessee. Except as set forth in Paragraph 19 or 20 hereof, the Lessee shall be responsible for any damage to the Leased Premises beyond normal wear and tear that may be caused by the activities of the Lessee under this Lease and shall exercise due diligence in the protection of the Leased Premises against damage from any and all causes within Lessee's control.

b. The services to be provided by the Lessee under this Paragraph 11 shall include the furnishing of all labor, supervision, materials, supplies, and equipment necessary to provide the required protection and maintenance of the Leased Premised as described in this Paragraph 11.

c. The Parties hereby agree that the Army shall not be responsible for expending any funds for the maintenance, repair or replacement of any portion of the Leased Premises, either real or personal property, excepting for environmental clean-up, restoration, investigation and testing of the Leased Premises and except as otherwise provided in this Lease and/or the Conveyance Agreement.

12. INSURANCE

a. At the commencement of this Lease, the Lessee will obtain, or require its sublessee(s) or licensee(s) to obtain, from a reputable insurance company a commercial general liability insurance policy. The insurance shall provide an amount not less than a combined single limit of $5,000,000, per occurrence, for any number of persons or claims arising from any one incident with respect to bodily injuries or death resulting therefrom, property damage, or both, suffered or alleged to have been suffered by any person or persons resulting from the operations of the Lessee (or its sublessee(s) or licensee(s)) under the terms and conditions of this Lease.

b. The commercial general liability insurance policy shall insure the hazards of the Leased Premises and operations conducted in and on the Leased Premises, independent contractors, contractual liability (covering the indemnity included in this Lease), and shall name the Army as an additional insured party. Each policy will provide that any losses shall be payable notwithstanding any act or failure to act or negligence of the Lessee (or its sublessee(s) or Licensee(s))or the Army or any other person; provided that the insurer will have no right of subrogation against Army or Lessee (or its sublessee(s) or licensee(s)). Under no circumstances will the Lessee be entitled to assign to any third party rights of action that it may have against the United States arising out of this Lease, except to another DOD-approved LRA to which this Lease is assigned pursuant to the terms of Paragraph 9(b) hereof.

c. The Lessee shall require (or cause its sublessee(s) or licensee(s) to require) that the insurance company give the District Engineer thirty (30) days written notice of any cancellation or change

in such insurance. The District Engineer may require closure of any or all of the Leased Premises during any period for which the Lessee (or its sublessee(s) or licensee(s)) does not have the required insurance coverage. The Lessee shall require its insurance company (or shall require its sublessee(s) or licensee(s) to require its or their insurance company) to furnish to the District Engineer certificates of insurance evidencing the purchase of such insurance. The minimum amount of liability insurance coverage is subject to revision by the District Engineer every three years or upon renewal or modification of this Lease.

d. Notwithstanding anything herein to the contrary, each Party hereto hereby releases the other Party, its officers, agents, sublessees and employees, solely to the extent recoverable under the insurance policies of the releasing Party, from any and all liability for any loss or damage which may be inflicted upon the property of such party, notwithstanding that such loss or damage shall have arisen out of the negligent or the tortious act or omission of the other Party, its agents, sublessees or employees; provided, however, that this release shall be effective only with respect to loss or damage occurring during such time as the appropriate policy of insurance of the Party so releasing shall contain a clause to the effect that such release shall not affect the said policy or the right of the insured to recover thereunder, and each Party at the request of the other shall use reasonable efforts to have such a clause included in its said policies. Each Party hereto shall notify the other in the event such a clause is not included in its said policies, or is withdrawn therefrom, in which event the release herein of the other Party shall be null and void.

13. RIGHT TO ENTER

In addition to inspections allowed under Paragraph 19 of this Lease, the Army, its officials, officers, agents, employees, and contractors shall be allowed temporary access to the Leased Premises to inspect and to perform its responsibilities as the Lessor under this Lease. Such access shall be as the Army deems necessary, but upon prior written notice to the Lessee or sublessee in possession of the Leased Premises. The Army will give the Lessee or sublessee in possession of the Leased Premises at least seventy-two (72) hours prior wr tten notice of its intention to enter the Leased Premises, unless otherwise agreed to by the Lessee or sublessee in possession of the Leased Premises or in case of an emergency (in which case the Army shall give such notice as is reasonably practicable under the circumstances). The Lessee may at its option accompany Army representatives during such inspections. Subject to the provisions of Paragraph 14(f) of this Lease, the Lessee shall have no claim for business interruption against the United States or any officer, agent, employee, or contractor thereof based solely on the Army's exercise of its rights under this paragraph. In exercising the aforesaid access rights, the Army, its officials, officers, agents, employees and contractors shall use reasonable means, without significant additional cost to the Army, to avoid and/or minimize interference with the use of the Leased Premises.

14. HOLD HARMLESS AND INDEMNITY

a. Except as otherwise expressly provided herein or required by applicable law, the Army shall not be responsible for loss or damages to property or injuries or death to persons which may arise from or be attributable or incident to the condition or state of repair of the Leased Premises or the Lessee's possession and/or use and occupation of the Leased Premises, or the Lessee's activities conducted under this Lease.

b. Except as otherwise expressly provided herein, as between Lessee and the Army, Lessee shall bear full responsibility for and release the Army from any liability for damages to property or injuries or death to persons which may arise from or be attributable or incident to the condition or state of repair of the Leased Premises after the commencement date of this Lease, or Lessee's possession and/or use and occupation of the Leased Premises, or the Lessee's operations conducted under this Lease. Except as otherwise expressly provided herein, the Lessee expressly waives all claims against the Army for any such loss, damage, personal injury or death caused solely by or occurring solely as a consequence of such possession and/or use of the Leased Premises by the Lessee, or the conduct of activities or the performance of responsibilities under this Lease by the Lessee.

c. The Lessee shall require, in any sublease of the Leased Premises, that any sublessee of all or any part of the Leased Premises indemnify and hold harmless the Army and Lessee from any claims, suits, costs, expenses, damages, liabilities, judgments, fines, or penalties resulting from, and only to the extent of, discharges, releases, emissions, spills, storage, disposal, or any other action directly caused by such sublessee during the Term of this Lease giving rise to the Army's or Lessee's liability, civil or criminal, or responsibility under Federal, state or local environmental laws.

d. The waiver, indemnification and hold harmless of the Army provided in this Paragraph 14 shall not apply to damages, claims, suits, liabilities, judgments, costs, fines, penalties, expenses and attorney's fees arising out of, caused by or predicated upon (a) the negligence or willful misconduct of the Army or its officials, officers, agents, employees or contractors, (b) activities undertaken by the Army (or its officials, officers, agents, employees or contractors) in relation to the environmental remediation of the Leased Premises, or (c) the Army's (or its officials', officers', agents', employees' or contractors') possession, use and occupation of or activities or operations on the Leased Premises, for which, to the extent provided for under applicable law or the Conveyance Agreement, the Army will be responsible.

e. Nothing contained in this Lease shall waive or amend any defense or immunity which Lessee, its officers, agents or employees may have under the Pennsylvania Political Subdivision Tort Claims Act, 42 Pa.C.S.A. §8541 et seq.

f. The Army recognizes and agrees, as set forth in by Section 330 of Public Law 102-484, as amended, to hold harmless, defend, and indemnify in full Lessee and its employees, agents, contractors, subcontractors, lessees, sublessees, transferees, successors and assigns from and against any suit, claim, demand or administrative or judicial action, liability, judgment, cost or other fee arising out of any claim for personal injury or property damage (including death, illness, or loss of or damage to property or economic loss) that results from, or is in any manner predicated upon, the release or threatened release of any hazardous substance, pollutant or contaminant, or petroleum or petroleum derivative (including but not limited to the NAPL Plume) as a result of the Army's activities on or affecting the Leased Premises. This indemnification is reduced only to the extent there is a release or threatened release which Lessee, its employees, agents, contractors, subcontractors, lessees, sublessees, transferees, successors and assigns caused or contributed to (as defined in the Conveyance Agreement).

g. The Lessee's and Army's obligations under this Paragraph 14 shall survive the expiration or termination of the Lease and the conveyance of the Leased Premises to the Lessee.

h. For purposes of this Lease, the terms "Army's activities or operations on the Leased Premises", "release", "threatened release", "hazardous substance", "hazardous waste", "pollutant", "contaminant", "removal", "remedial action", "response", "Environmental condition(s)", and "release or threatened release which Lessee caused or contributed to" shall have the meanings given such terms, and as described, in the Conveyance Agreement (substituting Lessee for PAID, where applicable).

15. NON-DISCRIMINATION

The Lessee shall not discriminate against any person or persons or exclude any person or persons from participation in the Lessee's operations, programs or activities conducted on the Leased Premises, because of race, color, religion, sex, age, handicap or national origin. The Lessee will comply with the Americans with Disabilities Act and attendant Americans with Disabilities Act Accessibility Guidelines ("ADAAG") published by the Architectural and Transportation Barriers Compliance Board.

16. EASEMENTS/RESERVATIONS

The Army may grant additional temporary easements across or through the Leased Premises, to the Army's agents, representatives, contractors or subcontractors only as may be necessary to perform and complete the remediation of the Leased Premises, provided that the proposed grant of any such new temporary easement will be coordinated with the Lessee or sublessee(s) of the Leased Premises, and the

Army will not grant any such easement that will unreasonably interfere with the use of the Leased Premises by the Lessee or sublessee(s) of the Leased Premises, or that is not terminable or extinguished at no cost to Lessee upon conveyance of the Leased Premises to Lessee pursuant to the Conveyance Agreement.

17. SUBJECT TO MINERAL INTERESTS

This Lease is subject to all outstanding mineral interests. As to federally owned mineral interests, it is understood that they may be included in present or future mineral leases issued by the Bureau of Land Management ("BLM") which has responsibility for mineral development on federal lands. The Army will provide lease stipulations to BLM for inclusion in said mineral leases that are designed to protect the Leased Premises from activities that would interfere with the Lessee's operations or would be contrary to local law and that will provide for the termination of such mineral leases upon conveyance of fee title to the Leased Premises to PAID in accordance with the terms of the Conveyance Agreement.

18. PROHIBITED USES

The Lessee shall not permit on the Leased Premises or install or operate, or permit to be installed or operated thereon, any device which is illegal; or use the Leased Premises or permit them to be used for any illegal business or purpose. Lessee shall not conduct or permit the Leased Premises to be used for any activity which constitutes a nuisance. The Army acknowledges that the Permitted use of the Leased Premises shall not be deemed to constitute a nuisance.

19. ENVIRONMENTAL PROTECTION

a. During the Term of this Lease, the sole purpose for which the Leased Premises and any improvements thereon may be used, in the absence of prior written approval of the Army for additional uses of the Leased Premises (which approval shall not be unreasonably withheld, delayed or conditioned), is for the Permitted use of the Leased Premises.

b. The Army has identified portions of the Leased Premises which are underlain by a subsurface plume of non-aqueous phase hydrocarbon liquid located approximately 18 – 20 feet below the surface of the Leased Premises (the "NAPL Plume"). The Army acknowledges and agrees that neither the Lessee nor any successor, assignee, employee, agent, lender or sublessee of Lessee or any of its or their successors or assigns has, nor shall have, any obligation, liability or responsibility (financial or otherwise) for the NAPL Plume, and neither the Lessee nor any successor, assign, employee, agent, lender or sublessee of Lessee or any of its or their successors or assigns is or shall be responsible for any investigation, removal or remediation of the NAPL Plume, unless Lessee or any successor, assign, employee, agent, lender or sublessee of Lessee or any of its or their successors or assigns, or any other third party acting by or on behalf of Lessee, is found by a final decision by a court of competent jurisdiction to have contributed to the contamination of the NAPL Plume or other contamination of the Leased Premises resulting therefrom. The Army agrees to be responsible for the remediation of the NAPL Plume as required by law and/or the Conveyance Agreement.

c. Every sublease of the Leased Premises shall contain the Environmental Protection Provisions contained in this Paragraph 19.

d. The Lessee shall comply with the applicable federal, state, and local environmental laws, regulations, and standards that are or may become applicable to Lessee's operations on the Leased Premises.

e. The Lessee shall be responsible for obtaining at its sole cost and expense any environmental permits required for its operations under this Lease, independent of any existing permits. The Army is under no obligation to transfer any permit issued to the Army for use by the Lessee.

f. The Army's rights under this Lease specifically include the right for Army officials to inspect the Leased Premises upon reasonable prior written notice and during normal business hours for compliance with environmental, safety, and occupational health laws and regulations, whether or not the Army is responsible for enforcing them. Such inspections are without prejudice to the right of duly constituted enforcement officials to make such inspections. The Army will give the Lessee and any sublessee in possession of the Leased Premises at least seventy-two (72) hours prior notice of its intention to enter the Leased Premises except for a mutually agreeable schedule for routine operation and maintenance of the existing free phase hydrocarbon recovery system, unless it determines that immediate entry is required for safety, environmental, or security purposes (in which event the Army shall give such notice as is reasonably practicable under the circumstances). The Lessee agrees to allow such entries by Army officials in the conduct of inspections conducted under this section. The Lessee may at its option accompany Army officials or representatives during such inspections. Subject to the provisions of Paragraph 14(f) of this Lease, the Lessee shall have no claim against the United States or any officer, agent, employee, or contractor thereof based solely on account of the right of entry under this paragraph. In exercising such rights, the Army shall use reasonable means, without significant additional cost to the Army, to avoid and/or minimize interference with the use of the Leased Premises.

g. During the Term of this Lease, the Army, and its officers, agents, employees, contractors and subcontractors have the right, upon reasonable prior notice (which for purposes hereof shall mean the time periods set forth in subparagraph (f) above) in writing to the Lessee and any sublessee, and at the Army's or DLA's sole cost and expense, to enter upon the Leased Premises for the purposes enumerated in these subparagraphs:

(i) to conduct investigations and surveys, including, where necessary, drilling, soil and water sampling, test-pitting, testing soil borings and other activities related to the DSCP Base Realignment and Closure ("BRAC") Installation Restoration Program ("IRP");

(ii) to inspect field activities of the Army and its contractors and subcontractors in implementing the DSCP BRAC IRP;

(iii) to conduct any test or survey required by the EPA or PADEP relating to the implementation of the DSCP BRAC IRP or environmental conditions at or on the Leased Premises as the Army is required to perform by the EPA or PADEP or applicable law or regulation or to verify any data submitted to the EPA or the PADEP by the Army relating to such conditions; and

(iv) to construct, operate, maintain or undertake any other response or remedial action, as required or necessary for the DSCP BRAC IRP as the Army is required to perform by the EPA or PADEP or applicable law or regulation, including, but not limited to monitoring wells, pumping wells, underground lines and tanks and treatment facilities.

Prior to exercising the right of entry under this section, the Army or its officers, agents, employees, contractors and subcontractors shall consult with Lessee and any sublessee and, as necessary, the appropriate Environmental Agencies (as defined in the Conveyance Agreement). The Army or its officers, agents, employees, contractors and subcontractors agrees to use reasonable means, without significant additional cost to the Army, to avoid and/or minimize interference with the use of the Leased Premises. For purposes of this paragraph 19 (g), the DLA and the DSCP shall be deemed to be "agents" of the Army.

h. The Lessee shall comply with the provisions of any health and safety plan in effect under the DSCP BRAC IRP as the Army is required to perform by PADEP or the EPA or applicable law or regulation during the course of any of the above described response or remedial actions by the Army, provided that the Lessee is provided, in advance, with a copy of such plan. The Army shall provide to Lessee and Lessee shall have the ability to review and approve in advance, any future health and safety plan developed by the Army which Lessee will be required to observe. Any inspection, survey, investigation, or other response or remedial action required by the PADEP or the EPA to be undertaken by the Army, shall be subject to the prior coordination with and reasonable prior written notice to the

Lessee and any affected sublessee, transferee and tenant. The Lessee agrees to allow such entries by Army officials in the conduct of inspections conducted under this section upon reasonable prior notice (which for purposes hereof shall mean the time periods set forth in subparagraph (f) above) in writing to the Lessee. Subject to the provisions of Paragraph 14(f) of this Lease, the Lessee shall have no claim based solely on account of the right of entry under this section against the United States or any officer, agent, employee, contractor, or subcontractor thereof. Prior to exercising the right of entry under this section, the Army shall consult with the Lessee and any sublessee and, as necessary, the appropriate Environmental Agencies (as defined in the Conveyance Agreement). The Army shall use reasonable means, without significant additional cost to the Army, to avoid and/or minimize interference with the use of the Leased Premises.

i. Lessee acknowledges that 10 U.S.C. 2692 prohibits the storage, treatment, or disposal of non-DoD owned toxic or hazardous materials on the Leased Premises and agrees not to store, treat, or dispose of toxic or hazardous materials, as defined by 10 U.S.C. 2692, on the Leased Premises, unless Army approval is obtained in accordance with 10 U.S.C. 2692.

j. To the extent applicable, the Lessee shall comply with the hazardous waste permit requirements under Resource Conservation and Recovery Act ("RCRA") or its Pennsylvania equivalent, the Pennsylvania Solid Waste Management Act. Unless specifically authorized by the Army in writing, the Lessee must provide at its own expense, if required, hazardous waste management facilities, complying with all laws and regulations. Without the express, written consent of the Army, Army hazardous waste management facilities will not be available to the Lessee.

k. DOD Component accumulation points for hazardous and other wastes will not be used by the Lessee or any sublessee. Neither will the Lessee or sublessee permit its hazardous wastes to be commingled with hazardous waste of the DOD Component.

l. During the Term of this Lease, prior to the storage of any hazardous waste, material, or substance, or petroleum or petroleum products (other than the NAPL Plume) on the Leased Premises, the Lessee shall prepare and maintain, or cause to be prepared and maintained, a plan, certified by a Professional Engineer, for responding to hazardous waste, petroleum or petroleum products (other than the NAPL Plume), and other chemical spills. The plan shall be submitted to the Army for its review and approval, which approval shall not be unreasonably withheld, delayed or conditioned. Such plan shall be independent of the DSCP and shall not rely on Army personnel or equipment. Should the Army provide any personnel or equipment, because the Lessee was not, in the opinion of the Base Realignment and Closure Environmental Coordinator, conducting timely response actions, the Lessee agrees to reimburse the Army for its actual reasonable costs, so long as the Army provided the Lessee with an opportunity to provide the personnel or equipment.

m. The Lessee shall not conduct any subsurface excavation, digging, drilling or other disturbance of the soil below the Permitted Depth nor construct or make or permit its sublessees or assigns to construct or make any alterations, additions, or improvements to, or installations upon or otherwise modify or alter the Leased Premises in any way below the Permitted Depth without obtaining the Subjacent Construction Approvals (as defined in the Conveyance Agreement) except as necessary to respond to an emergency situation where obtaining the Subjacent Construction Approvals in advance is not feasible, in which case the Army and the appropriate Environmental Agencies shall be notified as soon as practicable. For construction or alterations, additions, modifications, improvements or installations below the Permitted Depth (collectively "work") in the proximity of or which might affect the NAPL Plume, such consent may include a requirement for written approval by the Army's or DLA's Remedial Project Manager.

n. After prior consultation with Lessee and the appropriate Environmental Agencies, and subject to the terms and conditions of the Conveyance Agreement, the Army may impose any additional, reasonable environmental protection conditions and restrictions during the Term of this Lease that are necessary to protect human health and the environment, provided, that it complies with the following conditions: (i) such additional environmental protection conditions and restrictions shall not cause or

result in a significant increase in the costs of redeveloping any portion of the Leased Premises or the Air Rights Property (as defined in the Conveyance Agreement) above the Leased Premises or have a significant material adverse effect on the physical reuse of any portion of the Leased Premises or the Air Rights Property above the Leased Premises in accordance with the approved reuse of the Leased Premises or the Air Rights Property above the Leased Premises; and (ii) the Army shall use reasonable means, without significant additional costs to the Army, to avoid and/or minimize interference with the approved reuse of the Leased Premises or the Air Rights Property above the Leased Premises; and (iii) such additional environmental protection conditions and restrictions are mutually agreed upon by the Army, Lessee, and the appropriate Environmental Agency(ies). The Army shall provide written notice of such conditions and restrictions to Lessee. In imposing any such additional environmental protection conditions and restrictions, the Army shall comply with the terms of the Conveyance Agreement.

o. On December 10, 1999, PADEP issued to the Army an Administrative Order with respect to the remediation of the NAPL Plume. The Army acknowledges that the Lessee is not a party to that Order and has no obligation thereunder.

p. To the extent required by applicable laws and regulations, this Lease and/or the Conveyance Agreement, the Army is responsible for and shall undertake the remediation of hazardous substances, petroleum, and petroleum derivatives existing on the Leased Premises at the inception of this Lease (including, but not limited to, the NAPL Plume).

q. The Lessee acknowledges that the soil beneath pavement in the area which formerly contained Underground Storage Tanks at the Oregon Avenue Area, Building 28 Gas Station, and Bash Street Gas Station (as such terms and areas are described and depicted in the FOSL for the Leased Premises, attached to and made a part of this Lease as Exhibit E) may contain contamination from stored petroleum products. The Lessee shall notify PADEP to coordinate any soil disturbance in these areas. The Lessee agrees that any soil removed from these areas will be managed in accordance with all applicable federal and state laws and regulations.

r The Lessee acknowledges that fill material at the former locations of Buildings 20 and 26, as well as in the swale between the former locations of warehouses M-1 and M-4, and in the swale between the former locations of warehouse M-2 and Building 20 (as such terms and areas are described and depicted in the FOSL for the Leased Premises, attached to and made a part of this Lease as Exhibit E) does not meet Pennsylvania current Clean Fill Standards and is not suitable for unrestricted use off-site. Accordingly, the Lessee agrees that any soil removed from these areas will be managed in accordance with all applicable federal and state laws and regulations.

s. The Lessee and its sublessee(s) shall have the right, upon written notice to and approval from the Army (which approval shall not be unreasonably withheld, delayed or conditioned and shall be granted in good faith) to relocate or reconfigure (at its sole cost and expense) those portions of the existing free-phase hydrocarbon recovery system on or within the Leased Premises as necessary or prudent to facilitate or effectuate the redevelopment of all or any portion of the Leased Premises or the Air Rights Property above the Leased Premises, provided that such relocation or reconfiguration does not significantly increase the costs of operating the existing free-phase hydrocarbon recovery system.

20. Notice Of The Presence Soil Gas Vapors

a. Based on information obtained from a soil gas survey, the Army has documented the presence and determined the general location, extent, nature and source of soil gas vapors [primarily methane gas but also including volatile organic compounds] ("Soil Gas Vapors") which may accumulate in the sub-surface soils on the Leased Premises, including within the Permitted Depth. The Army has determined that the source of the Soil Gas Vapors is the biodegradation of the NAPL Plume on the Leased Premises. While the Army has determined that the Leased Premises is suitable for its intended purpose for non-residential uses, the Soil Gas Vapors could present a hazardous condition during ground construction activities or within confined subterranean building areas or underground utilities, unless properly managed. The Lessee is advised that certain federal, state and local laws or regulations

(including, but not limited to occupational safety and health regulations regarding monitoring, control and preventive measures) may be applicable during construction and maintenance activity, and, with respect to construction activity, there may be a need to implement certain design features for buildings in the Air Rights Property above the Leased Premises. Accordingly, the Lessee performing or authorizing any construction or maintenance activity on the Leased Premises as its sole obligation with respect to such Soil Gas Vapors, shall ensure that appropriate measures, as required by applicable laws or regulations or common practice, are taken during any construction or maintenance activity on the Leased Premises to detect and mitigate, using common and precautionary engineering, construction, or, with respect to construction activity, design measures, any unacceptable levels of Soil Gas Vapors. If any unacceptable levels of Soil Gas Vapors are detected that cannot be controlled using common and precautionary engineering, construction or, with respect to construction activity, design measures, the Lessee shall ensure the cessation of such activities and ensure that the Army is promptly notified of these conditions. Upon notification, the Army shall promptly notify PADEP, and, in consultation with PADEP and Lessee and any then current sublessee(s) of the Leased Premises who are or could be affected by such unacceptable levels of Soil Gas Vapors, the Army shall, in its sole discretion, and at its sole cost and expense, promptly either (i) take any necessary remedial action to reduce the level of Soil Gas Vapors to a level that can be controlled with common and precautionary engineering, construction or, with respect to construction activity, design measures, or (ii) provide for precautionary mitigation measures to protect human health and safety. Any such remedial action or precautionary mitigation measures taken by the Army shall be coordinated with Lessee and any then current affected sublessee(s) of the Leased Premises and approved in writing by PADEP, and shall not cause a significant increase in the cost of redeveloping the Leased Premises or the Air Rights Property above the Leased Premises or cause a material adverse affect on the physical re-use of the Leased Premises or the Air Rights Property above the Leased Premises.

b. Lessee shall not transfer, lease or sublease the Leased Premises or assign this Lease without including the provisions of this Paragraph 20 verbatim or by express reference. The provision of this Paragraph 20 shall be legally binding on any employee, agent, representative, contractor, subcontractor, sublessee, licensee or other permitted user (and any successor, assign, employee, agent, representative, contractor, subcontractor of any sublessee, licensee or other permitted user) taking by, through or under Lessee. The provisions of this Paragraph 20 shall be deemed to run with the land and shall be legally binding on the Lessee, any sublessee(s) or licensee(s), any other current direct holder or holders of a leasehold interest in and to all or any portion of the Leased Premises, and any other person or entity that acquires or possesses control of all or any part of the Leased Premises and the respective heirs, successors, successors-in-title, grantees, transferees and assigns of such parties.

21. CLEAN AIR ACT CONFORMITY

As contemplated in 40 CFR § 51.853(c)(xix) and § 93.153(c)(xix) governing the conduct of General Conformity determinations, implementing Clean Air Act § 176(c), this Lease is in furtherance of the transfer of the Leased Premises through a no cost Economic Development Conveyance application and, upon the full satisfaction of the various conditions precedent to closing as set forth in the Conveyance Agreement, including, but not limited to, a finding that said Leased Premises can be conveyed in accordance with the requirements of the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9620(h)(31), as amended, and other legal and policy requirements, the Army will convey to the Lessee by one or more quitclaim deeds, fee title in and to the Leased Premises. The Army does not intend to and does not retain continuing authority to control air pollutant emissions associated with activities conducted on the Leased Premises during the Term of this Lease pending the conveyance(s) within the meaning of 40 CFR § 51.853(c)(xix) and § 91.153(c)(xix).

22. ENVIRONMENTAL BASE LINE SURVEY

a. The EBS documenting the known history of the Leased Premises with regard to the storage, release or disposal of hazardous substances thereon, is attached hereto and made a part hereof as Exhibit D. To the best of the Army's knowledge and belief, the information contained in the EBS is accurate and complete. Preceding expiration or termination of this Lease, the Army will prepare an

updated EBS that will document the changes to environmental condition of the Leased Premises, if any, at that time. The updated EBS will serve to support the FOST for the transfer or conveyance of the Leased Premises.

b. A FOSL for the Leased Premises is attached hereto and made a part hereof as Exhibit E. The FOSL is the Army's determination that, with certain use restrictions identified as "Environmental Protection Provisions" therein (which use restrictions are set forth in this Lease at Paragraphs 19 and 20), the Leased Premises are suitable to lease and occupancy of the Leased Premises will not present an unacceptable risk to human health.

c. Hazardous Substance Notice. The information contained in this notice is provided in accordance with DOD/Army policy. The Army has made a complete search of its records concerning the Leased Premises subject to this Lease. Based upon those records, information regarding hazardous substances that have been stored for one year or more (S), released (R), or disposed of (D) on the Leased Premises is set forth at Exhibit F. The Lessee should consult the EBS described in subparagraph a. above for more detailed information regarding said hazardous substances.

d. The Parties hereto acknowledge and agree that the Leased Premises consists of parcels identified by the Army, EPA and the PADEP as parcels that require further environmental remediation, or documentation of the completion of remediation, by the Army, and include areas designated as Areas of Contamination, Study Areas, and Areas Requiring Environmental Evaluation. As a result, the Lessee acknowledges that the Lessee's use of the Leased Premises is limited and restricted as provided for herein.

23. HISTORIC PRESERVATION

a. The Army or DLA reserves the right of access to install the Interpretive Exhibit (as defined and described in the SHPO Programmatic Agreement) in accordance with the terms of the SHPO Programmatic Agreement.

b. The Lessee shall not remove or disturb, or cause or permit to be removed or disturbed, any historical, archeological, architectural or other cultural artifacts, relics, remains or objects of antiquity. In the event such items are discovered on the Leased Premises, the Lessee shall immediately notify the District Engineer and protect the site and the material from further disturbance until the District Engineer gives clearance to proceed.

24. TAXES

Any and all taxes imposed by the state or its political subdivisions upon the Leased Premises or interest of the Lessee in the Leased Premises shall be paid promptly by the Lessee. Nothing in this Paragraph 24 shall prevent Lessee from contesting the validity or amount of the assessed valuation or taxes for the Leased Premises.

25. COVENANT AGAINST CONTINGENT FEES

The Lessee warrants that no person or selling agency has been employed or retained to solicit or secure this Lease upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or established commercial or selling agencies maintained by the Lessee for the purpose of securing business. For breach or violation of this warranty, the Army shall have the right to require the Lessee to pay the full amount of such commission, percentage, brokerage, or contingent fee.

26. OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this Lease or to any benefits to arise therefrom. However, nothing herein contained shall be

construed to extend to any incorporated company if this Lease is for the general benefit of such corporation or company.

27. MODIFICATIONS.

This Lease and the Conveyance Agreement contain the entire agreement between the Parties hereto with respect to the Leased Premises, and no modification of this agreement, or waiver, or consent hereunder shall be valid unless the same be in writing, signed by the parties to be bound or by a duly authorized representative and this provision shall apply to this condition as well as all other conditions of this Lease.

28. DISCLAIMER

This Lease is effective only insofar as the respective rights of the Army and the Lessee in the Leased Premises are concerned; and the Lessee shall obtain or cause to be obtained any permit or license which may be required by Federal, state, or local statute in connection with the use of the Leased Premises by Lessee. It is understood that the granting of this Lease does not preclude the necessity of obtaining a Department of the Army permit for activities which involve the discharge of dredge or fill material pursuant to the provisions of Section 10 of the Rivers and Harbors Act of 3 March 1899 (33 U.S.C. 403), and Section 404 of the Clean Waters Act (313 U.S.C. 1344).

29. RECORDING OF MEMORANDUM

The Army and Lessee will, promptly after the execution of this Lease, join in the execution of a memorandum of lease in proper form for recordation. The Army consents to the recordation of a memorandum of sublease between Lessee and any sublessee and will join into such memorandum to the extent required by any sublessee's title company or lender. The Lessee will bear the cost of recording the memorandum.

30. MORTGAGE OF LEASEHOLD INTERESTS

a. During the Term of this Lease, Lessee and any sublessee may encumber its leasehold interest(s) as well as its interest(s) in the improvements on the Leased Premises by one or more loans secured by a mortgage or mortgages (the holder of such mortgage or mortgages being referred to herein as a "Mortgagee").

b. The Lessee or any sublessee shall notify the Army promptly of any lien or encumbrance which has been created or attached to the improvements or the Lessee's or sublessee's interest in the improvements, whether by act of the Lessee, sublessee or otherwise, of which the Lessee or sublessee itself has notice.

c. If a Mortgagee or purchaser at foreclosure of the mortgage shall acquire the Lessee's or sublessee's interest in the improvements by virtue of the default by the Lessee or sublessee under the mortgage or otherwise, this Lease shall continue in full force and effect so long as the Mortgagee or purchaser at foreclosure is not in default hereunder, and the Mortgagee or such purchaser shall become liable and fully bound by the provisions of this Lease.

d. In no event shall the right granted herein to the Lessee and sublessee to mortgage or otherwise encumber the Lessee's or sublessee's leasehold interest, created by and pursuant to this Lease, be deemed or interpreted as a subordination of the Army's interest in the Leased Premises to the lien of such mortgage or encumbrance, it being expressly agreed that under no circumstances shall the Lessee or sublessee have the right to mortgage or encumber the interest of the Army in the Leased Premises or subordinate such interests to the lien of any mortgage or encumbrance that the Lessee or sublessee may place under its leasehold estate created by and pursuant to this Lease. In no event will the Army allow any lien to be recorded against its interest in the Leased Premises which could divest the lien of this Lease through foreclosure or other judicial proceedings.

e. The Army consents to Lessee's and/or sublessee's grant, if any, to the Mortgagee of a security interest in any trade fixtures, equipment, inventory and/or other personal property owned by the sublessee and located on the Leased Premises. The Army hereby waives any interest that the Army may have in such personal property by virtue of this Lease.

f. In connection with any leasehold mortgage, the Army agrees that, from and after the date on which the Army receives a true copy of the Mortgage and a written notice specifying the name and address of the Mortgagee, and continuing so long as any such leasehold mortgage shall remain unsatisfied of record or until written notice of satisfaction is given by the Mortgagee to the Army, the following provisions shall apply:

(i) the Army shall simultaneously give to the Mortgagee a copy of any notice of default given to any Lessee or sublessee, and the Mortgagee shall have such reasonable period of time to remedy or cause to be remedied the defaults identified in said notice; and the Army agrees to accept performance by the Mortgagee as if the same had been done by the Lessee or a sublessee;

(ii) If a default by the Lessee or a sublessee is of a nature that the Mortgagee cannot cure it without obtaining possession, then the Army agrees further that the Mortgagee shall have such reasonable period of time either (A) to obtain possession of the Leased Premises (including possession by a receiver); or (B) to institute, prosecute and complete foreclosure proceedings or otherwise acquire the Lessee's or a sublessee's interest under this Lease with due diligence;

(iii)..Nothing herein contained shall require the Mortgagee or its nominee to cure any default of Lessee or a sublessee, and the Army does not hereby waive any rights or obligations of Lessee or a sublessee under this Lease.

31. CERTIFICATES BY ARMY AND LESSEE

Each Party agrees at any time and from time to time upon not less than thirty (30) days prior notice to execute, acknowledge and deliver to the other Party or a sublessee or Mortgagee a statement in writing certifying that this Lease is unmodified and in full force and effect (or, if there have been modifications, that this Lease is in full force and effect as modified and stating the modifications) and stating whether or not to the best knowledge of the signer of such certificate the other party is in default in the performance of any covenant, agreement or condition contained in the Lease on its part to be performed, and if so, specifying each such default of which the signer may have knowledge.

32. GOVERNING LAW

This Lease shall be governed by and construed in accordance with federal law and the laws of the Commonwealth of Pennsylvania where not inconsistent with federal law.

33. AVAILABILITY OF FUNDS

The Army's obligation to pay or reimburse any money under this Lease is subject to the availability of appropriated funds, and nothing in this Lease shall be interpreted to require obligations or payments by the United States in violation of the Anti-Deficiency Act; provided that the Army shall otherwise comply with applicable statutory requirements and its obligations under the terms of this Lease.

End of Text

IN WITNESS WHEREOF, I have hereunto set my hand by authority of the Secretary of the Army, this 9th day of October 2001.

UNITED STATES OF AMERICA
DEPARTMENT OF THE ARMY

By: [redacted]

Acting Deputy Assistant Secretary of the Army
(Installations and Housing)
OASA(I&E)

THIS LEASE is also executed by the Lessee this 9th of October 2001.

THE PHILADELPHIA AUTHORITY
FOR INDUSTRIAL DEVELOPMENT

By [redacted]
[redacted] Chairman

DESCRIPTION OF BUILDING #13

DESCRIPTION OF AERIAL RIGHTS

All that certain lot or piece of ground with buildings and improvements thereon erected, situate in the 26th Ward of The City of Philadelphia and described according to a Survey and Plan of Property made by [redacted] Surveyor and Regulator of the Second Survey District on May 16, 1997, as follows:

Beginning at a point on the Northwesterly side of 20th Street. (70' wide), lying above horizontal plane 17 feet above City Of Philadelphia Datum, at the distance of 769.09' Southwestwardly from the Southwesterly side of Oregon Avenue (120' wide); **Thence** extending, partly along the Southeasterly terminus of a proposed 25' wide easement for stormwater and sanitary purposes which extends Northwestwardly, and partly along the Southeasterly terminus of a proposed easement for ingress and egress which extends Northwestwardly, and along the Northwesterly side of said 20th Street S. 15° 00' 00" W., the distance of 820.91' to a point on the Northeasterly Right-of-Way Line of The Delaware River Port Authority; Thence extending along the said Northeasterly Right-0f-Way Line of the Delaware River Port Authority, N. 75° 00' 00" W., the distance of 195.01' to a point; Thence extending, partly along the Northwesterly terminus of said proposed easement for ingress and egress, partly crossing a proposed 25' wide easement for stormwater and sanitary purposes which extends Southeastwardly and Northwestwardly, and partly through a wall, N. 15° 00' 00" E., the distance of 327.57' to a point within a wall; Thence extending, through a wall, N. 75° 00' 00" W., the distance of 150.32' to a point; Thence extending N. 15° 00' 00" E., the distance of 20.77' to a point; Thence extending S. 75°00'00" E., the distance of 25.99' to a point; Thence extending, partly along the Northwesterly terminus of the said proposed 25' wide easement for stormwater and sanitary purposes, N. 15° 00' 00" E., the distance of 478.00' to a point; Thence extending S. 75° 00' 00" E., the distance of 287.60' to a point; Thence extending S. 15° 00' 00" W., the distance of 5.43' to a point; Thence extending S. 75° 00' 00" E., the distance of 31.74' to a point on the Northwesterly side of said 20th Street, being the first mentioned point and place of beginning.

Containing in Area 223,520.3 Sq. Ft. or 5.13132 Acres

[redacted]

Surveyor & Regulator
Second Survey District

EXHIBIT A

PERSONAL PROPERTY LIST

[INTENTIONALLY OMITTED]

Exhibit B

SEC. 330. INDEMNIFICATION OF TRANSFEREES OF CLOSING DEFENSE PROPERTY. 10 U.S.C. 2687 note.

(a) In GENERAL. - (1) Except as provided in paragraph (3) and subject to subsection (b), the Secretary of Defense shall hold harmless, defend, and indemnify in full the persons and entities described in paragraph (2) from and against any suit, claim, demand or action, liability, judgment, cost or other fee arising out of any claim for personal injury or property damage (including death, illness, or loss of or damage to property or economic loss) that results from, or is in any manner predicated upon, the release or threatened release of any hazardous substance or pollutant or contaminant as a result of Department of Defense activities at any military installation (or portion thereof) that is closed pursuant to a base closure law.

(2) The persons and entities described in this paragraph are the following:

(A) Any State (including any officer, agent; or. Employee of the State) that acquires ownership or control of any facility at a military installation (or any portion thereof) described in paragraph (1).

(B) Any political subdivision of a State (including any officer, agent, or employee of the State) that acquires such ownership or control.

(C) Any other person or entity that acquires such ownership or control.

(D) Any successor, assignee, transferee, lender, or lessee of a person or entity described in subparagraphs (A) through (C)

(3) To the extent the persons and entities described in paragraph (2) contributed to any such release or threatened release, paragraph (1) shall not apply.

(b) CONDITIONS.-No indemnification may be afforded under this section unless the person or entity making a claim for indemnification-

(1) notifies the Department of Defense in writing within two years after such claim accrues or begins action within six months after the date of mailing, by certified or registered mail, of notice of final denial of the claim by the Department of Defense;

(2) furnishes to the Department of Defense copies of pertinent papers the entity receives;

(3) furnishes evidence or proof of any claim, loss, or damage covered by this section; and

(4) provides, upon request by the Department of Defense, access to the records and personnel of the entity for purposes of defending or settling the claim or action.

EXHIBIT C

(c) AUTHORITY OF SECRETARY OF DEFENSE.-(1) In any case in which the Secretary of Defense determines that the Department of Defense may be required to make indemnification payments to a person under this section for any suit, claim, demand or action, liability, judgment, cost or other fee arising out of any claim for personal injury or property damage referred to in subsection (a)(1), the Secretary may settle or defend, on behalf of that person, the claim for personal injury or property damage.

(2) In any case described in paragraph (1), if the person to whom the Department of Defense may be required to make indemnification payments does not allow the Secretary to settle or defend the claim, the person may not be afforded indemnification with respect to that claim under this section.

(d) ACCRUAL OF ACTION.-For purposes of subsection (b)(1) the date on which a claim accrues is the date on which the plaintiff knew (or reasonably should have known) that the personal injury or property damage referred to in subsection (a) was caused or contributed to by the release or threatened release of a hazardous substance or pollutant or contaminant as a result of Department of Defense activities at any military installation (or portion thereof) described in subsection (a)(1).

(e) RELATIONSHIP TO OTHER LAW.-Nothing in this section shall be construed as affecting or modifying in any way section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9620(h)).

(f) DEFINITIONS.-In this section:

(1) The terms "facility", "hazardous substance", "release" and "pollutant or contaminant" have the meanings given such terms under paragraphs (9), (14), (22), and (33) of section 101 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, respectively (42 U.S.C. 9601 (9), (14), (22), and (33)).

(2) The term "military installation" has the meaning given such term under section 2687(e)(1) of title 10, United States Code.

(3) The term "base closure law" means the following:

(A) The Defense Base Closure and Realignment Act of 1990 (10 U.S.C. 2687 note).

(B) Title II of the Defense Authorization Amendments and Base Closure and Realignment Act (10 U.S.C. 2687

(C) Section 2687 of title 10, United States Code.

(D) Any provision of law authorizing the closure or realignment of a military installation enacted on or after the date of the enactment of this Act.

EXHIBIT C

Certificate of Address:

I certify that the precise street address of the grantee in the foregoing is as follows:

Philadelphia Authority for Industrial Development
2600 Centre Square West
1500 Market Street
Philadelphia, Pennsylvania 19102

Signed on behalf of the Grantee:

[redacted]

Print Name [redacted]

Appendix A

Subsection Four:
2017 Notice of Intent to Remediate



Legend:

- Sewer Line
- Manhole
- Interpreted Limits of the** "Hole/Breach"
- Former DSCP Site Location

Notes:

** Approximate edges of the breach in the confining bed between the Site's shallow and deep aquifer zones as discussed during the March 6, 2013 meeting with the PADEP, DLA and USACE

0 270 540 810 1,080

SCALE IN FEET

FORMER DEFENSE SUPPLY CENTER PHILADELPHIA
DSCP/PASSYUNK HOMES, PHILADELPHIA

2017 UPDATED NOTICE OF INTENT TO REMEDIATE

SITE LOCATION

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1

ARCADIS Design & Consultancy for natural and built assets

[redacted]
Sanitarian Supervisor
City of Philadelphia Department of Public Health
321 University Avenue
Philadelphia, PA 19104

Arcadis U.S., Inc.
[redacted]
www.arcadis.com

Subject:
Former Defense Supply Center Philadelphia (DSCP) and Former Passyunk Homes
2990 B S 20th Street
Philadelphia, Philadelphia County, Pennsylvania

Environment

Date:
April 13, 2017

Contact:
[redacted]
Phone:
[redacted]
Email:
[redacted]

Our ref:
06262046.0008

Dear Ms. [redacted]

The Land Recycling and Environmental Remediation Standards Act (Act 2) requires that a Notice of Intent to Remediate (NIR) for a site undergoing investigation and remediation under Act 2 be provided to the municipality in which the site is located. In accordance with this provision of Act 2, we are formally notifying you of our intent to remediate the subject Site. A copy of the NIR, which has been sent to the Pennsylvania Department of Environmental Protection (PADEP), is enclosed. This notice will also be published in the Philadelphia Daily News, on April 14, 2017.

Should you have any questions or comments on the NIR, please contact Kevin Kivimaki, Defense Logistics Agency Installation at [redacted] United States Army Corps of Engineers at [redacted] Arcadis Inc., U.S., at [redacted]

Sincerely,

Arcadis U.S., Inc.

[redacted]
Associate Vice President

Copies:
[redacted] Defense Logistics Agency Installation

[redacted]

[redacted]
April 13, 2017

[redacted] United States Army Corps of Engineers

Enclosures:

Attachments

1 NIR

2610-FM-BECB0010 6/2014

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

For DEP Use Only
PF #_____
Rem ID #_____

NOTICE OF INTENT TO REMEDIATE

Act 1995-2 requires four general information items to be included in the NIR: the general location, listing of contaminants, intended use of property, and proposed remediation measures. In addition, indicate the standard(s) to be obtained (if known) and attach a scaled site map (if available).

Property Name Former Defense Supply Center Philadelphia (DSCP) and Former Passyunk Homes

Former Name(s) / AKA --

Address / Location 2990 B S 20th St.; Area bounded to the north by Oregon Avenue, to the west by the CSX Railroad Right-of-Way, to the east by 20th Street and Penrose Avenue/Route 291, and to the south by Penrose Avenue.

City Philadelphia Zip Code 19145

Municipality(s) Philadelphia County(ies) Philadelphia

Latitude 75 ° (deg). 11 ' (min) -- " (sec) Longitude 39 ° (deg). 55 ' (min) -- " (sec)

Horizontal Collection Method GPS

Horizontal Reference Datum NAD 83 Reference Point NGS N276

☐ Wish to participate in the DEP/EPA MOA. Contact the Land Recycling Program Manager at landrecycling@pa.gov for details.

EPA ID#, if known

DEP ID#(s), if known eFACTS Facility ID #654838; Storage Tank ID #502492
(i.e., eFACTS site ID#, storage tank facility ID#, water quality permit #, watershed permit, air quality permit #, etc.)

Date Release Occurred (if known) Unknown

Provide a brief description of the site contamination in plain language (e.g. fuel oil spill, historical chemical industrial area contamination), the names of any know primary contaminants to be addressed, and the intended future use of the property.

The Former Defense Supply Center Philadelphia (DSCP) site is contaminated with petroleum light non-aqueous phase liquid (LNAPL). A previous NIR was submitted in 2004. This 2016 updated NIR reflects the current conceptual site model (CSM) and progress of LNAPL remediation to date, which together support a Site-Specific Standard closure approach based on: 1) the elimination of potential exposure pathways, and 2) a quantitative demonstration of Site LNAPL stability.

The DSCP Site was owned by the United States Army (Army) and operated by the Defense Logistics Agency (DLA). The Site was closed under the 1993 Base Realignment and Closure (BRAC) program. In 2001, the US Army transferred the air and surface rights to the Philadelphia Authority for Industrial Development (PAID) for commercial development. To complete the necessary remediation efforts, the Army still retains the ownership of the ground 10 feet below ground surface (bgs). The Site has been re-developed as a retail and commercial shopping center. The Site is also utilized for some light industrial work. The future use of the Site could include commercial or retail office buildings, or light industrial use.

The residential buildings on the former Passyunk Homes property (also part of the Site) located south of the Schuylkill Expressway, were demolished in 2002. A new Philadelphia Housing Authority (PHA) office and maintenance building was constructed on the northern portion of the former Passyunk Homes property. The southern portion of the former Passyunk Homes property was purchased by Penrose Park Associates and is being redeveloped for residential housing called Siena Place. The former Sun Oil Company (Sunoco) refinery boundary is located approximately 100 feet (ft) from the upgradient western edge of the Site, across a section of I-76 and west of the CSX Railroad (Site Map, attached).

LNAPL is present in the "shallow" (i.e., water table) aquifer at the Site. Both the shallow and underlying semi-confined "deep" coastal plain aquifer contain peroleum hydrocarbon constituents of concern (COC) . Remediation activities are on-going since the issuance of an Administrative Order dated December 10, 1999 (Administrative Order) between the Pennsylvania Department of Environmental Protection (PADEP) and the Defense Logisics Agency (DLA). The Administrative Order initiated remedial activities to remove LNAPL to the maximum extent practicable, and requires that the Site meet "one or a combination of the remedial standards set forth in the PA ACT II Land Recycling Act and the regulations found in 25 Pa. Code Chapter 250." Contaminants for which Site-Specific Standards are to be met are found in the PADEP Short List for Petroleum Products- Leaded Gasoline, Aviation Gasoline, and Jet Fuel. This particular COC "Short List" has been selected based on LNAPL characterization data, and includes:

Benzene
Toluene
Ethyl Benzene
Xylenes (total)
Cumene (Isopropylbenzene)
Naphthalene
1,2,4-Trimethyl benzene
1,3,5-Trimethyl benzene
1,2-Dicholoroethane
1,2-Dibromoethane
Lead

The current conceptual site model (CSM) supports separation of the Site aquifers into one "shallow" and one "deep" aquifer zone, as described above. This seperation is based on observations from well boring logs, direct-push/direct-sensing logs, groundwater potentiometric surface elevations, the extent of site LNAPL and the distribution of the aforementioned COC list. The CSM also supports a Site-Specific Standard approach for both the shallow and the deep aquifer zones, including pathway elimination through engineering and administrative land use controls using Section 250.402 standards, and demonstration of LNAPL stability through the attainment of physical and chemical criteria.

Provide a general description of proposed remediation measures.

The area impacted by LNAPL has been investigated by teams from the former Sunoco refinery, the Former DSCP, and the Defense Energy Support Center (DESC). Remediation began in 1996 using skimmer pumps installed to remove the LNAPL from the shallow aquifer, and a full-scale vacuum enhanced skimming (VES) System has been in operation since 2005. Additional investigative and interim remedial activities include quarterly groundwater gauging and sampling, groundwater sample result statistical trend analysis, preliminary LNAPL fingerprinting and transmissivity testing, direct-push/direct-sensing onsite investigations and 3-dimensional modeling, and VES system optimization testing.

Continued operation of skimmer pumps via fixed and mobile systems to remove LNAPL is recommended, along with continued optimized operation of the VES system to; 1) remove vapor phase hydrocarbon mass for destruction via the onsite thermal oxidizers, and 2) drive in-situ biodegradation of pertoleum hydrocarbon mass in the shallow aquifer zone.

Proposed remediation activities for the shallow aquifer include LNAPL stability demonstration through additional fingerprinting/simulated boiling point analysis, transmissivity testing, and groundwater analytical data trend analysis. Pathway elimination demonstration for the shallow aquifer via existing and additional engineering and institutional controls is proposed.

Deep aquifer Site-Specific Standards attainment demonstration is proposed through the drilling of new monitoring wells, groundwater sampling of new wells, and fate-transport modeling.

Remediation Standard(s) planned (if known at this time):

☐ Unknown at this time	☐ Soil	☐ Groundwater
☐ Background Contaminants:	☐ Soil	☐ Groundwater
☐ Statewide Health - Residential Contaminants:	☐ Soil	☐ Groundwater
☐ Statewide Health – Non-Residential Contaminants:	☐ Soil	☐ Groundwater
☒ Site Specific Contaminants: PADEP Short List for Petroleum Products- Leaded Gasoline, Aviation Gasoline, and Jet Fuel	☐ Soil	☒ Groundwater
☐ Special Industrial Area* Contaminants:	☐ Soil	☐ Groundwater

*NOTE: Specific standard or Special Industrial Area require a 30-day municipal comment period

Remediator / Property Owner / Consultant. Complete the form below for *each* recipient obtaining a release of liability upon approval of the final report. Attach additional sheets as necessary.

Remediator

Contact Person/Title [redacted] Chief, Restoration Division — eFACTS Client ID* _____

Relationship to Site Goverment agency for the Army responsible for remediation — Client Type* Federal Agency
(e.g. owner, remediator, participant in cleanup, consultant, etc.)

Phone Number [redacted] — Email Address [redacted]@dla.mil

Company Name Defense Logistics Agency Installation Support, Environmental Management — EIN or Federal ID # _____

Address (street, city, state, zip) [redacted]

Property Owner

Contact Person/Title See attached property owner list. — eFACTS Client ID* _____

Relationship to Site _____ — Client Type* _____
(e.g. owner, remediator, participant in cleanup, consultant, etc.)

Phone Number _____ — Email Address _____

Company Name _____ — EIN or Federal ID # _____

Address (street, city, state, zip) _____

Consultant

Contact Person/Title [redacted] Principal Environmental Engineer — eFACTS Client ID* _____

Relationship to Site Consultant — Client Type* _____
(e.g. owner, remediator, participant in cleanup, consultant, etc.)

Phone Number [redacted] — Email Address [redacted]@arcadis.com

Company Name Arcadis U.S., Inc. — EIN or Federal ID # _____

Address (street, city, state, zip) [redacted]

*Include eFACTS Client ID (if known) – "Client Types" below:

Association/Organization	Limited Liability company	Partnership-General
Authority	Limited Liability Partnership	Partnership-Limited
County	Municipality	School District
Estate/Trust	Non-Pennsylvania Government	Sole Proprietorship
Federal Agency	Other (Non-Government)	State Agency
Individual	Pennsylvania Corporation	

Preparer of Notice of Intent to Remediate

Name [redacted] — Title Chief, DLA Restoration Division

Phone Number [redacted] — Email Address [redacted]@dla.mil

Company Name Defense Logistics Agency — eFACTS Client ID _____

Address (street, city, state, zip) [redacted]



PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

CERTIFIED MAIL™

7009 0820 0000 6813 0301

7009 0820 0000 6813 0301

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

OFFICIAL USE

Postage	$ .67
Certified Fee	3.35
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$ 4.02

Postmark Here

Sent To: Ms. Leigh Anne Rainford, Sanitarian Supervisor
Street, Apt. No.; or PO Box No.: City of Philadelphia, Department of Public Health, 321 University Avenue
City, State, ZIP+4: Philadelphia, PA 19104

PS Form 3800, August 2006 — See Reverse for Instructions

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ms. Leigh Anne Rainford
Sanitarian Supervisor
City of Philadelphia
Department of Public Health
321 University Avenue
Philadelphia, PA 19104

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7009 0820 0000 6813 0301

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

Proof of Publication in The Philadelphia Daily News
Under Act. No 587, Approved May 16, 1929

STATE OF PENNSYLVANIA
COUNTY OF PHILADELPHIA

Helene Sweeney being duly sworn, deposes and says that **The Philadelphia Daily News** is a newspaper published daily, except Sunday, at Philadelphia, Pennsylvania, and was established in said city in 1925, since which date said newspaper has been regularly issued in said County, and that a copy of the printed notice of publication is attached hereto exactly as the same was printed and published in the regular editions and issues of the said newspaper on the following dates:

April 14, 2017

Affiant further deposes and says that she is an employee of the publisher of said newspaper and has been authorized to verify the foregoing statement and that she is not interested in the subject matter of the aforesaid notice of publication, and that all allegations in the foregoing statement as to time, place and character of publication are true.

[redacted]

Sworn to and subscribed before me this 14th day of April 2017.

[redacted]

Notary Public

My Commission Expires:

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
[redacted] Notary Public
City of Philadelphia, Phila. County
My Commission Expires November 30, 2020

Copy of Notice of Publication

NOTICE OF INTENT TO REMEDIATE FORMER DSCP SITE

Pursuant to the Pennsylvania Land Recycling and Environmental Remediation Standards Act of May 19, 1995, P.L. 4, No. 1995-2 (Act), notice is hereby given that the Defense Logistics Agency (DLA) has submitted to the Pennsylvania Department of Environmental Protection (PADEP) a Notice of Intent to Remediate (NIR) at the former Defense Supply Center Philadelphia (DSCP) and former Passyunk Homes Area. The former DSCP facility was located near 23rd and Oregon Avenue, Philadelphia, PA. The former Passyunk Homes Area is bound to the north by the Walt Whitman Bridge Approach (I-76) to the east by 20th Street and Penrose Avenue/Route 291, to the south by Penrose Avenue/Route 291, and to the west by the CSX Railroad right-of-way. The former DSCP property is currently redeveloped as the Quartermaster Plaza shopping center, and future use could include retail and/or commercial office buildings. The southern portion of the former Passyunk Homes Area is currently being developed as the Siena Place residential community, and the northern portion is utilized by the Philadelphia Housing Authority.

The soils and groundwater at the site have been contaminated with light non-aqueous phase liquid (LNAPL). Remediation began in 1988 using skimmer pumps to remove the mobile LNAPL, and since 2005 the skimmers have operated along with a vacuum enhanced skimming system to remove vapor phase mass. Proposed remediation activities include LNAPL stability demonstration and pathway elimination demonstration via engineering and institutional controls.

Site-specific standards are proposed as cleanup goals at the site. The Act provides a 30-day public and municipal comment period for site-specific standard remediation. The 30-day public comment period will begin with the publication of this notice. Comments should be submitted to the Pennsylvania Department of Environmental Protection Southeast Regional Office, 2 East Main Street, Norristown, PA 19401, Attn: Program Manager, Environmental Cleanup and Brownfields Program.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHEAST REGIONAL OFFICE

April 21, 2017

Mr. [redacted]
Arcadis U.S., Inc.,
[redacted]

Re: Receipt of Notice of Intent to Remediate
Site Specific Standard
Defense Supply Center/Passyunk Homes
eFACTS PF No. 654838
eFACTS Activity #50437
2990 B South 20th Street
City of Philadelphia
Philadelphia County

Dear Mr. [redacted]

This letter acknowledges receipt of your Notice of Intent to Remediate (NIR) on April 14, 2017, pertaining to the subject property and submitted in accordance with the Land Recycling and Environmental Remediation Standards Act (Act 2). The procedures set forth in Act 2 must be followed in order for this site to qualify for the liability protection provided by the Act. The Department of Environmental Protection (department) will not accept plans and reports until after the 30-day comment period following submission of the NIR ends.

The 30-day comment period following submission of the NIR allows the municipality the opportunity to request to be involved in the development of remediation and reuse plans for the property. If the municipality requests a public involvement plan, any comments and responses must be included in any subsequent Site-Specific Standard reports. Remedial investigation reports, risk assessment reports, cleanup plans, and final reports submitted to DEP under the site-specific standard need to be accompanied by the required fees and documentation verifying compliance with the public notification requirements.

Additional technical and program information can be found at www.dep.pa.gov (Business>Land>Land Recycling). Also, please refer to the Land Recycling checklists which are helpful in assuring reports are complete before submittal. DEP uses the checklists to perform administrative and technical completeness reviews when plans and/or reports are submitted. It is strongly encouraged to include the appropriate completed checklist with your Final Report submission. Land Recycling checklists can also be found at the website address (Business>Land>Land Recycling) link.

Please refer to the Standard Attachment for considerations of other programs which may be applicable to this property.

If you have any questions or need further information regarding this matter, please contact [redacted] by email at [redacted]@pa.gov-or by telephone at [redacted]

Sincerely,

[redacted] P.G.

[redacted] P.G.
Professional Geologist Manager
Environmental Cleanup and Brownfields

cc: Mr. [redacted] (Defense Logistics Agency)
Philadelphia Department of Health
City of Philadelphia
[redacted]
Re 30 (cb17ecb) 111.6

Appendix C

CSM Database and
Historical Documents

Appendix C

Subsection One:
Generalized Stratigraphic Section of the
Coastal Plain

<table>
<tr><th>SYSTEM</th><th>SERIES</th><th colspan="2">HYDROGEOLOGIC UNIT</th><th>MODEL LAYER</th></tr>
<tr><td rowspan="2">Quaternary</td><td>Holocene</td><td colspan="2">Alluvium</td><td rowspan="2">Layer 1</td></tr>
<tr><td>Pleistocene</td><td colspan="2">Trenton gravel (informal usage)</td></tr>
<tr><td rowspan="8">Cretaceous</td><td rowspan="6">Upper Cretaceous</td><td rowspan="7">Potomac-Raritan-Magothy aquifer system</td><td>Upper clay unit</td><td>Layer 2</td></tr>
<tr><td>Upper sand unit</td><td>Layer 3</td></tr>
<tr><td>Middle clay unit</td><td>Layer 4</td></tr>
<tr><td>Middle sand unit</td><td>Layer 5</td></tr>
<tr><td>Lower clay unit</td><td>Layer 6</td></tr>
<tr><td rowspan="2">Lower sand unit</td><td rowspan="2">Layer 7</td></tr>
<tr><td>Lower Cretaceous</td></tr>
<tr><td>Pre-Cretaceous</td><td></td><td colspan="2">Wissahickon Formation</td><td></td></tr>
</table>

Figure 2. Generalized stratigraphic section of the Coastal Plain in the Philadelphia, Pa., region and correspondence of hydrogeologic units to layers in model developed for this study.

Appendix C

Subsection Two:
Summary of Characteristics of
Geohydrologic Units

Table 4. Summary of characteristics of geohydrologic units

[mg/L, milligrams per liter]

Geohydrologic unit and lithology	Approximate range of thickness, in feet	Water-bearing properties	Chemical quality of water
Alluvium - Flood plain and channel deposits of mud, silt, fine sand, and some gravel.	0-78	Permeability too low to be important as an aquifer.	Unknown.
Trenton gravel (informal usage) - Sand and gravel	0-80	The water-bearing properties vary greatly from place to place according to the thickness and physical character of the sediments; consequently, wells yield from 1 to 1,370 gallons per minute.	Aquifer subject to contamination from activities at the land surface. Median concentration of dissolved solids is 700 mg/L, median concentration of iron is 7.6 mg/L, and median concentration of manganese is 1.4 mg/L. Locally, volatile organic compounds may be present.
Bridgeton Formation - Sand and gravel; some clay and silt.	0-10	Generally lies above the water table and is not an important aquifer. Where it underlies the Trenton gravel, these two geohydrologic units commonly form a single aquifer	Unknown.
Potomac-Raritan-Magothy Aquifer System			
Upper clay unit - Variegated clay; silty, sandy, and gravelly in places.	0-35	Acts chiefly as a confining bed. Present only in southern Philadelphia near the Delaware River.	Unknown.
Upper sand unit - Medium to coarse sand and minor amounts of very fine to fine sand. Beds of gravel are common, particularly at the base of the unit.	0-50	Locally forms an important unconfined aquifer hydraulically connected to the Trenton gravel and other overlying geohydrologic units. Generally not tapped by wells in areas where it is overlain by the upper clay unit.	Water quality similar to that of the Trenton gravel.
Middle clay unit - Red and white clay and some variegated clay; sandy in places.	0-60	An extensive confining bed.	Unknown.
Middle sand unit - Fine to coarse sand and some clay.	0-40	Generally yields large to very large supplies of water to wells. Present only near the Delaware River in southern Philadelphia.	Water quality similar to that of the lower sand unit.
Lower clay unit - Red clay and some variegated clay. Sandy in places.	0-61	An extensive confining bed.	Unknown.
Lower sand unit - Coarse sand and fine gravel, grades upward to fine to medium sand containing some silt and clay.	0-90	The principal source of ground water in Philadelphia. Commonly yields from 500 to 1,000 gallons per minute to wells.	Aquifer subject to contamination from leakage from overlying units. Median concentration of dissolved solids is 510 mg/L, median concentration of iron is 18 mg/L, and median concentration of manganese is 1.5 mg/L.

Table 4. Summary of characteristics of geohydrologic units—Continued

Geohydrologic unit and lithology	Approximate range of thickness, in feet	Water-bearing properties	Chemical quality of water
Crystalline rocks - Chiefly schist of Wissahickon Formation. Also includes Chickies Formation and gneissose rocks of granitic to gabbroic composition.	Unknown	Locally, the Wissahickon Formation is an important aquifer in its outcrop area. Only 2 percent of the wells in this unit fail to obtain sufficient water for domestic supplies; median well yield about 45 gallons per minute.	Median concentration of dissolved solids is 500 mg/L, median concentration of iron is 0.7 mg/L, and 21 percent of the wells yield water with iron concentrations in excess of 10 mg/L. Median concentration of manganese is 0.34 mg/L. Locally, volatile organic compounds may be present.

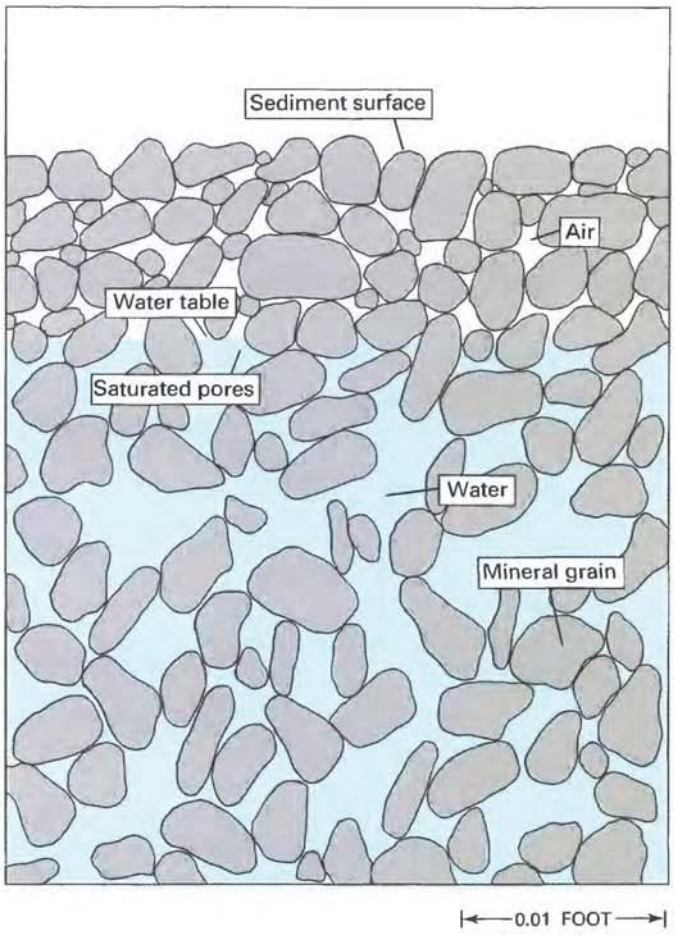


Figure 12. Ground water in unconsolidated sediments.

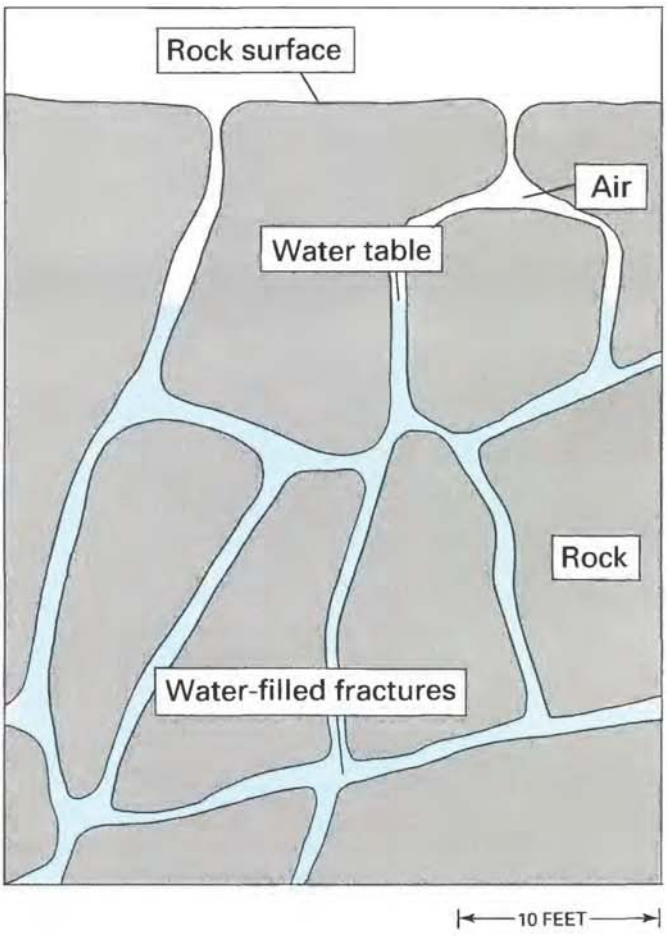


Figure 13. Ground water in fractured rock.

Appendix D

Monitoring Well
Installation Reports

Monitoring Well Installation Report
Former Defense Supply Center Philadelphia (DSCP)
Philadelphia, Pennsylvania
May 2017

Prepared by:
U.S. Army Corps of Engineers, Philadelphia District
Wanamaker Building - 100 Penn Square East
Philadelphia, PA 19107-3390

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1. Introduction

In December 1999, the Pennsylvania Department of Environmental Protection (PADEP) issued the Defense Logistics Agency (DLA) an administrative order requiring the recovery of light, non-aqueous phase liquids (LNAPL) from the DSCP site subsurface. The order also directed DLA to enter the site into the Land Recycling Program, also known as "Act 2" after the legislation that created the program. In accordance with Act 2 technical guidance, the United States Army Corps of Engineers (USACE) Philadelphia District performs fate and transport analysis to predict contaminant migration from the DSCP site. In 2015 PADEP suggested that downgradient deep aquifer wells be added to the monitoring well network to facilitate data acquisition to validate the fate and transport modeling. USACE confirmed the well locations with PADEP by conference call on November 3, 2016. The drilling and well installation work was completed in April 2017 by Zephyr Environmental Corporation, under Contract W912BU-17-P-0036 with the US Army Corps of Engineers, Philadelphia District.

2. Objectives

The objectives of this action were to drill two boreholes, collect soil and groundwater samples, determine screened intervals and complete and develop two monitoring wells in the deep aquifer at the locations shown in Figure 1. The target depth of the boreholes was the bedrock surface and the target screened interval of the wells was the deep aquifer "Lower Sand Unit" known locally as the Farrington Sand Member of the Raritan Formation in Pennsylvania. It is the basal unit occupying Pre-Cretaceous Channels within the underlying bedrock. Borehole installation allowed for discrete interval sampling of soils and groundwater. Soil samples collected were analyzed for porosity, Total Organic Carbon (TOC) and Fraction of Organic Carbon (FOC), to provide input parameters for the PADEP Quick Domenico fate and transport analysis tool. Groundwater samples were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX) to inform the decision about well screen placement. The scope of work for the effort is provided in **Attachment A**,

3. Deep Soil Boring and Well Installation

FDR-DW-15

Zephyr Environmental Corporation subcontracted installation of the pilot borehole and well to Eichelbergers Inc. based in Mechanicsburg, PA. The drillers began on April 3, 2017 at the FDR-DW-15 location with a track-mounted Geoprobe 7822DT direct-push rig. The drillers reached refusal at 90 feet below ground surface (bgs) with the Geoprobe. On April 10, 2017 they mobilized a Dietrich D-120 rig and completed the borehole using mud rotary techniques. The drillers encountered refusal at 145 ft bgs on April 12, 2017. Based on the geology observed during installation of the pilot borehole and other historical site information, USACE determined the appropriate well screen location to be from 105 to 120 ft bgs, in consultation with Arcadis and PARS geologists. Well construction was completed on Wednesday April 19. Boring logs are provided as **Attachment B** and well construction records are provided as **Attachment C**.

NOVA-DW-14

Drilling began at the NOVA-DW-14 location on Thursday April 20, 2017. The drilling subcontractor utilized mud rotary techniques with the Dietrich D-120 rig to install the borehole. Based on the geology observed during installation of the pilot borehole, USACE again

determined the appropriate well screen location to be from 105 to 120 ft bgs. The borehole and well were completed on Tuesday April 25.

4. Sample Collection

Soil and water samples were collected during installation of the pilot borehole in order to identify the appropriate screened interval. Using the Geoprobe, the drillers collected continuous soil cores using a five foot long macrocore sampler with acetate liners. Once the mud rotary rig was mobilized, soil cores were retrieved once every ten feet using split spoons. All samples retrieved were observed, photographed and recorded in a field log book. Samples deeper than 80 feet were also collected and submitted to a laboratory for analysis. Soil samples collected from the core were analyzed for porosity, Total Organic Carbon (TOC) and Fraction of Organic Carbon (FOC). The results of these analyses are used in the fate and transport analysis.

Groundwater samples were collected during borehole installation using a Waterra Hydrolift pump. One borehole volume was purged before collection of the sample. Groundwater samples were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX). A summary of all samples collected during this drilling effort is provided below in Table 1. Laboratory results are provided in **Attachment D.**

On April 19, 2017 the driller used a contaminated hose to fill the water supply tank on the drill rig. The hose had been used to pump monitoring well purge water. To remedy this error, the contractor emptied the tank, rinsed the tank, and refilled with potable water. USACE collected samples of the tank rinse water and the refilled water and submitted them to the laboratory for BTEX analysis. No BTEX was detected in the rinse water or the equipment blank.

USACE also collected composite samples from waste water and solids produced during drilling. The waste water and waste sediment samples were submitted to the laboratory for characterization by the toxicity characteristic leaching procedure (TCLP).

5. Well Development

The monitoring wells were developed a minimum of 24 hours after the completion of each well. The purpose of well development was to stabilize and increase the permeability of the filter pack around the well screen and to restore the permeability of the formation that may have been reduced by drilling operations.

The drillers pumped well FDR-DW-15 for four hours on Friday April 21 using a submersible whale pump. The drillers manually surged the well every ten minutes using a surge block on a 1” PVC pipe. The purge water was very turbid so the drillers returned on April 26 to develop the well further. The well was purged for another hour but the turbidimeter measurements never fell below 127 NTU. The drillers returned again on April 27 with a Smeal pump hoist and alternatingly surged and pumped for a total of four hours. The turbidity measurements did not improve and well development was terminated.

On April 28, 2017 the drillers developed well NOVA-DW-14. They surged for one hour using the Smeal pump hoist and then pumped for thirty minutes, then repeated the process. Again, the turbidity measurements remained high (>130 NTU).

Table 1. Summary of Samples Collected

Sample No.	Matrix	Date	Depth Interval	Analysis
FDR-DW-15-102	water	4/10/2017	102	BTEX
FDR-DW-15-113	water	4/10/2017	113	BTEX
FDR-DW-15-122	water	4/11/2017	122	BTEX
FDR-DW-15-78-82	soil	4/06/2017	77.5-82.5	none
FDR-DW-15-90-92	soil	4/10/2017	90-92	none
FDR-DW-15-100-102	soil	4/10/2017	100-102	TOC/FOC
FDR-DW-15-110-112	soil	4/11/2017	110-112	TOC/FOC
FDR-DW-15-110-112	soil	4/11/2017	110-112	porosity
FDR-DW-15-120-122	soil	4/11/2017	120-122	TOC/FOC
FDR-DW-15-130-132	soil	4/11/2017	130-132	TOC/FOC
NOVA-DW-14-80-82	soil	4/24/2017	80-82	none
NOVA-DW-14-90-92	soil	4/24/2017	90-92	none
NOVA-DW-14-100-102	soil	4/24/2017	100-102	none
NOVA-DW-14-110-112	soil	4/25/2017	110-112	porosity
NOVA-DW-14-120-122	soil	4/25/2017	120-122	none
TANK	water	4/19/2017	n/a	BTEX
TANKRINSE	water	4/19/2017	n/a	BTEX
wastesed	sediment	5/4/2017	n/a	TCLP VOC
wastewater	water	5/4/2017	n/a	TCLP VOC

6. Well Surveying

The locations and elevations of each well were surveyed by Charles S. Ryberg, a Pennsylvania licensed surveyor with Kelly & Close Engineers. The wells were surveyed relative to the horizontal locations using North American Datum of 1983 (NAD 83) and the vertical elevations using the North American Vertical Datum of 1988 (NAVD 88). Table 2 provides the survey information for each of the new wells.

Table 2. Well Survey Data

Well	X	Y	Z
NOVA-DW-14 CASING	219985.385	2688592.140	15.176
NOVA-DW-14 LIP	219985.629	2688592.305	15.573
NOVA-DW-14 RIM	219985.699	2688592.394	15.557
NOVA-DW-14 GROUND	219985.362	2688590.739	15.337
FDR-DW-15 CASING	219361.871	2687958.706	13.581
FDR-DW-15 LIP	219361.671	2687958.393	13.836
FDR-DW-15 RIM	219361.568	2687958.299	13.854
FDR-DW-15 GROUND	219363.111	2687958.902	13.933

Attachment A
Scope of Work

Scope of Work
Monitoring Well Installation and Soil and Groundwater Sampling
Former Defense Supply Center Philadelphia (DSCP)
Philadelphia, PA
February 2017

1. GENERAL

1.1 Contract Number:

1.2 Contract Action:

1.3	Name and Location of Project:	Monitoring Well Installation and Soil and Groundwater Sampling, Former Defense Supply Center Philadelphia (DSCP) site, near 2000 Pattison Avenue Drive, Philadelphia, PA
1.4	Firm Name, Address	TBD
1.6	Points of Contact:	USACE: [redacted]@usace.army.mil

1.7 Project Overview:

This project includes installation of two deep monitoring wells in South Philadelphia. Soil and groundwater samples shall be retrieved during installation of the well. Once retrieved, USACE staff will collect, bottle and ship soil and groundwater samples for analysis; these are not requirements of this contracting action.



Figure 1. Location Map

2. SCOPE OF WORK – BASE CONTRACT

The work consists of furnishing all plant, labor, materials, supplies, and accessories required to accomplish the sampling and well installation, together with all other operations incidental to the work, in strict accordance with this Scope of Work and subject to the terms and conditions of the contract. All equipment and supplies as specified herein are subject to approval by the Contracting Officer's Representative (COR) prior to issuing Notice to Proceed. No portion of this contract may be subcontracted without prior approval from the Government. The Contractor shall have a copy of this Scope of Work while performing the contract work and shall be familiar with the applicable provisions governing the contract work.

The Contractor shall provide qualified personnel to complete the following major work items:

- Prepare an Accident Prevention Plan (APP)
- Retrieve groundwater and soil samples
- Install and develop two deep monitoring wells

Work items and required submittals are described in detail below. The Contractor shall perform all work as specified.

2.1 Submittals

2.1.1 Accident Prevention Plan

The Contractor shall develop a site-specific Accident Prevention Plan (APP) meeting the requirements of EM 385-1-1 01.A.11 (http://www.publications.usace.army.mil/). The APP shall be submitted for approval prior to starting work. The plan shall include the following, as a minimum: project point-of contact list, emergency telephone numbers, directions to the nearest hospital(s), a list of emergency equipment to be maintained at the work site (e.g., first aid kit, eye wash bottle, fire extinguisher, cell phone, etc.), and activity hazard analyses (AHA) for all major work items. Major work items include, but are not limited to, mobilizations, drilling and sampling operations. It is not expected that the Contractor will encounter any free-phase contamination during drilling or well installation. It is anticipated that OSHA Level D protective equipment will be adequate.

The APP shall identify on-site personnel who shall ensure that all contractor and subcontractor personnel perform all work in accordance with the site APP. A minimum of one personnel with this responsibility shall be onsite at all times that field work is ongoing, by either the contractor or any subcontractors. The USACE will provide a copy of an existing approved APP for drilling at the DSCP site for reference purposes. No work shall be performed until this plan has been accepted by the Government and no deviation from the accepted plan will be permitted without prior approval by the Government.

2.1.2 Drilling Log

The Contractor shall submit complete, legible copies of DRILLING LOG, ENG FORM 1836 (or approved equivalent) upon completion of the work. All logs shall be recorded during the actual performance of the work and shall be preserved in good condition and order by the Contractor until they are delivered and accepted. Geological classification of the soils are not required on the drilling logs; this will be completed by a USACE geologist. Surveyed coordinates of the drilling location are also not required.

2.2 Soil Borings and Well Installation

2.2.1 Prior to Boring Placement

Utility Markout
USACE will contact Pennsylvania One Call/811 prior to any earth-disturbing activities. Pennsylvania One Call will notify the owners of underground facilities of the scheduled drilling. Additionally, USACE will conduct an independent utility markout to avoid conflicts with underground utilities.

Site Access
Since portions of the site are open and accessible to members of the public, site security cannot be guaranteed by USACE. Contractor personnel are responsible for security of their machines, equipment, supplies, etc. The Contractor shall also limit public access to the work site during

field activities using cones, tape, or other means. Right of Entry (ROE) will be established legally and in writing by the government.

Permits, Certifications and Licenses

The contractor shall comply with all Federal, State and local laws, regulations, ordinances and permits relating to the performance of this work. Bidders shall be licensed water well drillers in the Commonwealth of Pennsylvania. Street closure permits have been provided by the City of Philadelphia for the boring and well installations. Park permits, if needed, will also be acquired by the government. The contractor shall, at their own expense, procure any additional required permits, certifications and licenses required by Federal, State, and local law for the execution of this work. All monitoring well installation and related work shall be in accordance with Pennsylvania Department of the Environment, City of Philadelphia Department of Public Health and the Philadelphia Streets Department.

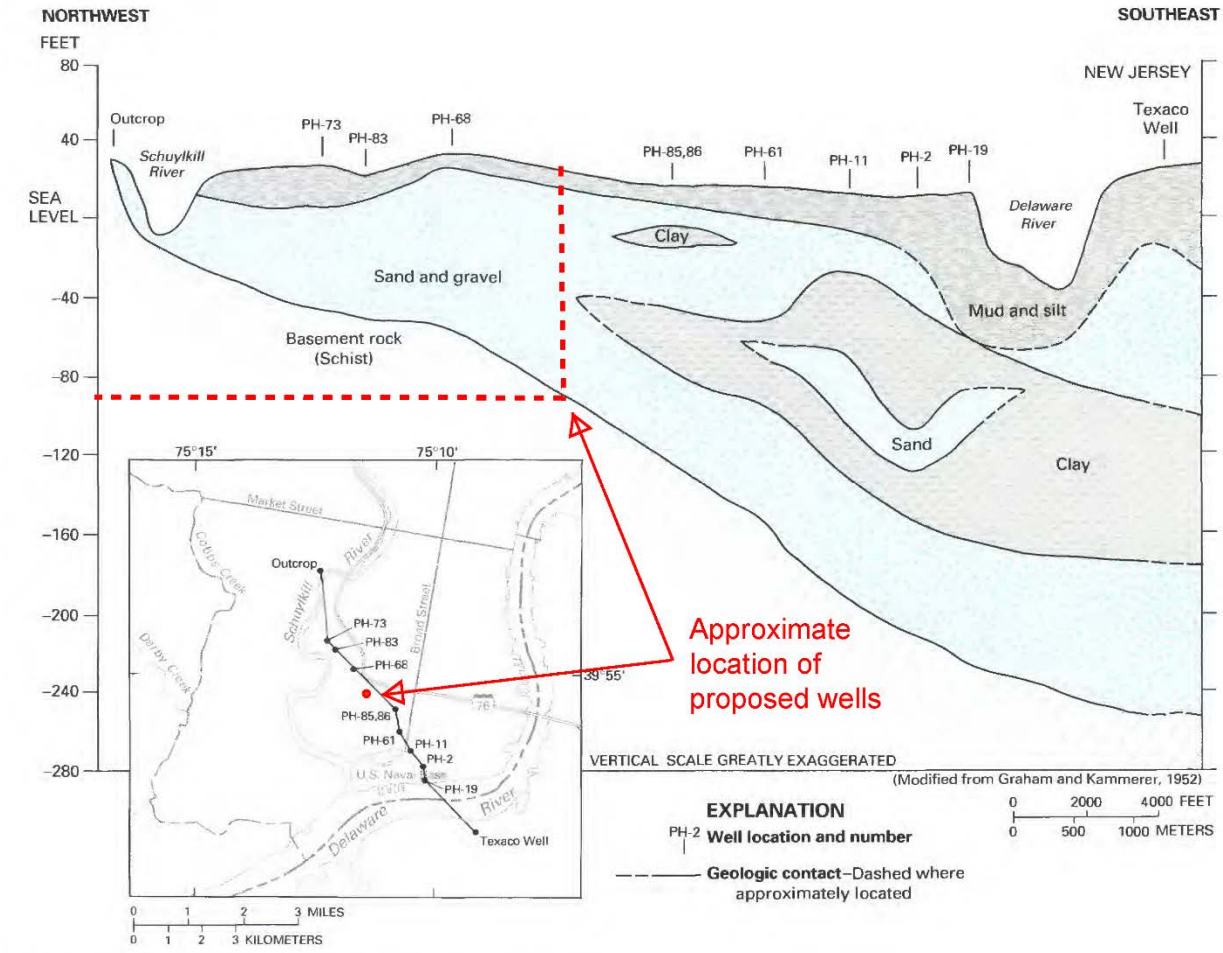


Figure 2. Generalized geologic section, South Philadelphia (USGS, 1991)

2.2.2. Sample Collection and Well Installation

The Driller shall install two new groundwater monitoring wells near Pattison Avenue and 20th Street in Philadelphia, Pennsylvania. The Contractor shall select either mud rotary or sonic drilling methods. The approximate locations of the proposed wells are shown on Figure 1. The Contractor shall coordinate the final location with the USACE Point of Contact and provide notification 5 days prior to the commencement of the well installation operations.

The Driller shall drill a pilot borehole at each of the proposed well locations. The purpose of the pilot borehole is to establish the stratigraphy, locate the desired aquifer and screening interval, and collect soil and groundwater samples. The Contractor may drill the pilot borehole for sample collection, and later ream to 6.5 inches to accommodate a two-inch well. Potable water shall be used in the construction and development of the wells.

It is expected that the driller shall advance through the Trenton Gravel and encounter the lower sand unit at approximately 70 feet BGS. Once the top of the aquifer is identified, a soil sample shall be collected with split spoons to confirm the elevation of the top of the aquifer. The driller shall retrieve the soil sample and USACE staff will bottle it and ship it to the lab for analysis. Soil sample collection shall be repeated on ten (10) foot intervals until the bottom of the deep aquifer or refusal is reached. It is expected that the driller shall encounter bedrock at approximately 120 ft BGS, as shown in Figure 2. The driller shall not proceed into solid rock.

After the first soil sample is collected, a Hydropunch® (or equivalent instrument) shall be advanced two feet further into the borehole to collect a groundwater sample for analysis. Groundwater sample collection shall also be repeated on ten (10) foot intervals until the bottom of the deep aquifer or refusal is reached. USACE will provide all bottle ware and handle sample shipping and analysis.

The results of the groundwater analysis will be used to select the well screen locations. Once all the samples from the first borehole are collected, USACE staff will immediately sent them to the laboratory for characterization on an expedited 24-hour turnaround from the lab. After reviewing the lab results, a 15-foot long well screen shall be installed at the aquifer level where the highest VOC concentrations are detected. This screened interval will be determined in the field by the USACE personnel who will be on-site and/or available by phone. Table 1 indicates the proposed designation and approximate depths for the wells, however the actual final depth of the well and screened interval will be determined in the field based upon the information obtained from the pilot borehole and sample analysis. Bidders shall assume a 120 foot depth for cost estimating purposes.

The riser shall be 2-inch diameter, PVC Schedule 40 material with flush threaded joint fittings. The driller shall have on hand or readily available, a selection of commonly used filter pack materials and screen slot sizes that are compatible with the naturally occurring aquifer stratigraphy. Previous well installations in the same formation have utilized a 0.02 inch screen slot size. The secondary filter pack (choker sand), just above the primary sand filter pack, is required and shall consist of #00 filter sand.

Filter pack and a choker sand separation layer shall be placed as indicated on the typical monitoring well installation detail shown in Figure 3. In accordance with ASTM D 5092, all sand shall be added via tremie pipe to control the speed of placement and prevent bridging. Placement by gravity or free fall methods is not allowed. Neat cement grout shall be placed in the annular space above the very fine choker sand separation layer. Grout shall also be injected under pressure through a tremie pipe to reduce the chance of voids. Neat cement grout shall cure a minimum of 48 hours before well development begins. Wells shall be installed within 8-inch diameter, flush-mounted, H-20 traffic load rated vaults. Locking well caps shall be provided and the well vault covers shall be secured with screws. The Contractor shall repair and revegetate any ruts or other damage caused by the drill rig in accordance with City of Philadelphia specifications. If a well is placed in a city sidewalk, the concrete sidewalk shall be restored to the original condition following well installation.

A tape measure shall be used to verify and document the final dimensions (top and bottom) and thickness of all sand, grout, and other materials added during the construction of the well. The driller shall also verify, using a tape measure, the depth of the bottom of the borehole and the bottom of the well after it is installed.

Table 1. Proposed Monitoring Wells

Well	Lat*	Long*	Screened Formation	Estimated depth (ft BGS)
PH-DW-14	39.908646°	-75.182785°	Lower sand unit (Farrington Sand)	120
PH-DW-15	39.906789°	-75.185071°	Lower sand unit (Farrington Sand)	120

*Exact well location subject to field verification and USACE approval.

2.2.3 Well Development

The development shall be accomplished by surging and pumping methods, in accordance with ASTM D 5521 Standard Guide for Development of Groundwater Monitoring Wells in Granular Aquifers. Air surging and jetting are prohibited. The method of development shall be approved by the USACE Point of Contact. The well development shall be conducted until the groundwater obtained from the well has a sufficiently low turbidity (less than 50 NTU) using the low-flow procedure, or until a maximum of 4 hours of total redevelopment pumping time has been incurred. The minimum time of development shall be two hours of continuous surging. The turbidimeter used for this shall be calibrated properly each day that it is used. Development water shall be containerized. The USACE POC shall be notified immediately if any well does not attain the required turbidity or if any well does not provide sufficient amounts of water to be developed. The Contractor shall complete a record of the well development operations conducted at each well location and present the results on the Well Development Record.

2.2.4 Investigation Derived Waste (IDW)

All cuttings, drilling fluids/mud, development water, decontamination water and other investigation derived waste shall be containerized and exported from the project site for disposal. The contractor is responsible for transportation and disposal of all cuttings, drilling fluids/mud, development water, decontamination water and other investigation derived waste (IDW). No IDW shall be placed on the site grounds near the borehole nor in surrounding streets and sewers.

USACE staff will collect a sample of the IDW for waste characterization and furnish analytical results to the Driller. Limited space is available for temporary storage of containerized IDW at the DSCP project office, located at 3000 South 20th Street, Philadelphia, PA. USACE will furnish analytical results of waste sample within three weeks of well installation. The Driller shall completely dispose of all IDW within three weeks of receiving the analytical results.

2.2.5 Decontamination

All augers, tooling and other down-hole equipment that has contacted subsurface soil shall be decontaminated between drilling locations by hot water pressure washer. All downhole equipment shall be decontaminated prior to mobilization to the site. If decontamination is conducted onsite, the Contractor shall construct a temporary decontamination pad. The Contractor shall assume that potable water is not available at the site and provide a decontamination water source. The Contractor shall dispose of decontamination water, residual soil and decontamination pad materials upon completion of work as described above.

3. SCOPE OF WORK – OPTIONS

The government may elect to exercise the following optional tasks in addition to the work described above. The optional tasks shall be conducted in accordance with procedures specified in the base contract described above.

Option 1: Additional ten feet of drilling
Option 2: Collect additional soil sample
Option 3: Collect additional groundwater sample
Option 4: Procure and furnish proof of insurance meeting the requirements below set forth by Philadelphia Parks and Recreation. This option will be exercised if final well location is on park property.

Parks and Recreation Contractors Permit Insurance Requirements

Permittee shall procure and maintain, at its sole cost and expense insurance of the types and minimum limits of coverage specified below for the length of time of the Permit. All insurance shall be procured from reputable insurers admitted to do business on a direct basis in the Commonwealth of Pennsylvania or otherwise acceptable to the City. All insurance herein, except the Professional Liability insurance, shall be written on an "occurrence" basis and not a "claims-made" basis. In no event shall Permittee exercise any rights under the Permit until the required evidence of insurance has been furnished. The City of Philadelphia and its officers, employees and agents, shall be named as additional insureds on the General Liability policy required hereunder. Such policy shall have an endorsement stating that the coverage afforded the additional insureds will be primary to any other coverage available to them.

1. Workers' Compensation and Employers' Liability
    a. Workers Compensation – Statutory Limits;

b. Employers Liability:
$100,000 Each Accident - Bodily Injury by Accident;
$100,000 Each Employee - Bodily Injury by Disease;
$500,000 Policy limit - Bodily Injury by Disease;
c. Other states endorsement including Pennsylvania.

2. General Liability Insurance
   a. Limit of Liability: $1,000,000 per occurrence combined single limit for bodily injury (including death) and property damage liability; $1,000,000 personal and advertising injury; $2,000,000 general aggregate and $1,000,000 for products and completed operations.
   b. Coverage: Premises operations; blanket contractual liability; personal injury liability; products and completed operations; independent contractors as additional insureds; employees and volunteers as Insureds; cross liability; and broad form property damage (including completed operations) liability; and explosion, collapse and underground hazards.
3. Commercial Automobile Liability Insurance
   a. Limit of Liability: $1,000,000 per occurrence combined single limit for bodily injury and property damage liability;
   b. Coverage: Owned, hired and non-owned vehicles.
4. Professional Liability Insurance
   a. Limit of Liability: $1,000,000 per occurrence
   b. Coverage: Errors and Omissions;
   c. Professional Liability Insurance may be written on a claims-made basis provided that coverage for occurrences arising out of the performance of work under the Permit shall be maintained in full force and effect under the policy or “tail” coverage for a period of at least two (2) years after the expiration of the Permit.
5. Contractor’s Pollution Legal Liability
   a. Limit of Liability: $1,000,000 each incident/$1,000,000 aggregate for bodily injury (including death) and property damage.
   b. Coverage shall include sudden, accidental and gradual occurrences and may be written on a claims-made basis provided that coverage for occurrences happening during the term of this contract be maintained in full force and effect under the policy or "tail" coverage for a period of at least two (2) years beginning from the time the work under this contract is completed.

4. COORDINATION AND EXECUTION OF WORK

The USACE Point of Contact (POC) for this Task Order will be [redacted] of the Geo-Environmental Section [redacted] The Contractor shall keep in close contact with the USACE POC who will be available for coordination with the document approvals, sampling activities, and laboratory analysis.

5. PERIOD OF PERFORMANCE

The total period of performance for this task order is 90 days from the notice to proceed. This schedule is subject to adjustment by the Contracting Officer, in writing, for delays on the part of the Government, and for conditions beyond the control of the parties hereto. The Contractor shall adhere to the following schedule:

Activity	Due Date
Schedule site visit and scoping meeting	One week following receipt of this SOW
Submit Draft APP	Four weeks following NTP
USACE reviews APP	One week following submission

Submit Revised APP	One week following receipt of comments
Complete Field Work	Eight weeks following NTP
Dispose of all IDW	Three weeks following receipt of waste characterization data

6. SITE VISIT

Prospective contractors are encouraged to inspect the site where services are to be performed and to satisfy themselves regarding all general and local conditions that may affect the cost of contract performance, to the extent that the information is reasonably obtainable. In no event shall failure to inspect the site constitute grounds for a claim after contract award. For site visits please coordinate with [redacted] of the Geo-Environmental Section [redacted].

6.0 REFERENCES

ASTM International. 2013. Standard Guide for Development of Ground-Water Monitoring Wells in Granular Aquifers, ASTM D 5521.

ASTM International. 2010. Standard Practice for Design and Installation of Groundwater Monitoring Wells, ASTM D 5092.

ASTM International. 2011. Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System), ASTM D 2487.

ASTM International. 2009. Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), ASTM D 2488.

Pennsylvania Department of Environmental Protection, Bureau of Watershed Management. December 1, 2001. Groundwater Monitoring Guidance Manual. Document 383-3000-001.

Pennsylvania Department of Environmental Protection. April 3, 2013. Sampling and Analysis Plan, Part I – Field Sampling Plan.

US Army Corps of Engineers (USACE). Safety and Health Requirements Manual, Latest Revision, EM 385-1-1.

US National Archives and Records Administration (NARA). Occupational Safety and Health Standards, 29 CFR 1910.

Water Well Drillers License Act, 17 Pennsylvania Code, Chapter 47.

Attachment B
Boring Logs

USACE Philadelphia District

BORING LOG SHEET

BORING: NOVA-DW-14

PROJECT:	Defense Supply Center - Philadelphia	DATE STARTED:	04/20/17
PROJECT NO.:		DATE COMPLETED:	04/26/17
LOCATION:	NOVA-DW-14	X COORDINATE:	219985.385
TOTAL DEPTH (FT):	122 FT BGS	Y COORDINATE:	2688592.140
GEOLOGIST:	[redacted]	GROUND ELEVATION (FT):	15.337
DRILLER:	Eichelberger's Inc.	TOP OF CASING ELEVATION (FT):	15.176
DRILLING/SAMPLING METHOD:	Geoprobe, Rotary	DATUM:	NAD 83, NAVD 88

Sample collected	Start Depth (ft)	End Depth (ft)	Recovery (ft)	USCS Soil Classification	Geologic Unit Code	Color	Description	Time	Date	Comments
Soil: NOVA-DW-14-80-82	80	82	2	SP SC		White Brown	80.0-80.5 White soft clay, some pebbles, subangular cobbles 80.5-82.0 Coarse poorly graded brown sand, some flakes of micah, some pebbles	1200	04/24/17	
Soil: NOVA-DW-14-90-92	90	92	1.5	SP SC		Brown White	90-90.5 Coarse poorly graded brown sand 90.5-92.0 White clay with iron staining	1245	04/24/17	
Soil: NOVA-DW-14-100-102	100	102	1	CL SM-SP		White/gray	100.0-100.3 White/gray hard clay 100.3 Fine grained sand lense 100.4-100.7 Silty, sandy clay 100.7-101.0 Fine poorly graded sand, silt	1535	04/24/17	
Soil: NOVA-DW-14-110-112	110	112	1	SC SM-SP		Light tan Light brown	110-110.2 Very soft silty clay, light tan 110.2-111 Coarse, light brown fine sand, some rounded pebbles	930	04/25/17	
Soil: NOVA-DW-14-120-122	120	122	1	GW		Gray, pink, orange	120-121 Subrounded gravel	1045	04/25/17	

NOTES:

USACE Philadelphia District

BORING LOG SHEET

BORING: FDR-DW-15

PROJECT:	Defense Supply Center - Philadelphia	DATE STARTED:	04/03/17
PROJECT NO.:		DATE COMPLETED:	04/12/17
LOCATION:	FDR-DW-15	X COORDINATE:	219361.8710
TOTAL DEPTH (FT):	145 FT BGS	Y COORDINATE:	2687958.7060
GEOLOGIST:	[redacted]	GROUND ELEVATION (FT):	13.9330
DRILLER:	Eichelberger's Inc.	TOP OF CASING ELEVATION (FT):	13.5810
DRILLING/SAMPLING METHOD:	Geoprobe, Rotary	DATUM:	NAD 83, NAVD 88

Sample collected	Start Depth (ft)	End Depth (ft)	Recovery (ft)	USCS Soil Classification	Geologic Unit Code	Color	Description	Time	Date	Comments
None	58	63	5	CL		Red, brown and gray	58 - 61 Variegated red, brown, and gray clay with trace gravel 61 - 63 Fine to medium gray sand with trace gravel	1200	04/04/17	
None	63	66	4	SC		Dark gray	63 - 64 Fine sand 65 - 66 Dense silty clay	1430	04/04/17	
None	67	72	3	SP		Light brown	Light brown gravel, some clay, some sand	1100	04/05//17	
None	72	77	5	CL		Red and gray	72 - 76 Gravelly well graded sand 76 - 77 Stiff, variegated gray and red clay with iron nodules	1445	04/05//17	
Soil FDR-DW-15-78-82	77.5	82.5	3.5	CL		Red hue 10R 4/4 Gray hue 10R 5/1	78 - 79 Very soft mottled clay 81 - 82 Stiff to very stiff mottled clay	1000	04/06/17	
Soil FDR-DW-15-90-92	90	92	2	CL		Light gray with red and rusty orange	90 - 90.5 Soft clay, light gray mottled with red 90.5 - 92 Silty sand, light gray with lenses of orange	1450	04/10/17	
Soil: FDR-DW-15-100-102 Groundwater: FDR-DW-15-102	100	102	1	SM		Tan (hue 10Y 7/2) orange/brown (hue7.5Y 6/6)	100 - 101 Very fine sand or silt, light gray mottled with red, orange 101-102 Medium sand with lenses of black 102 Medium sand, orange-brown color	1530	04/10/17	

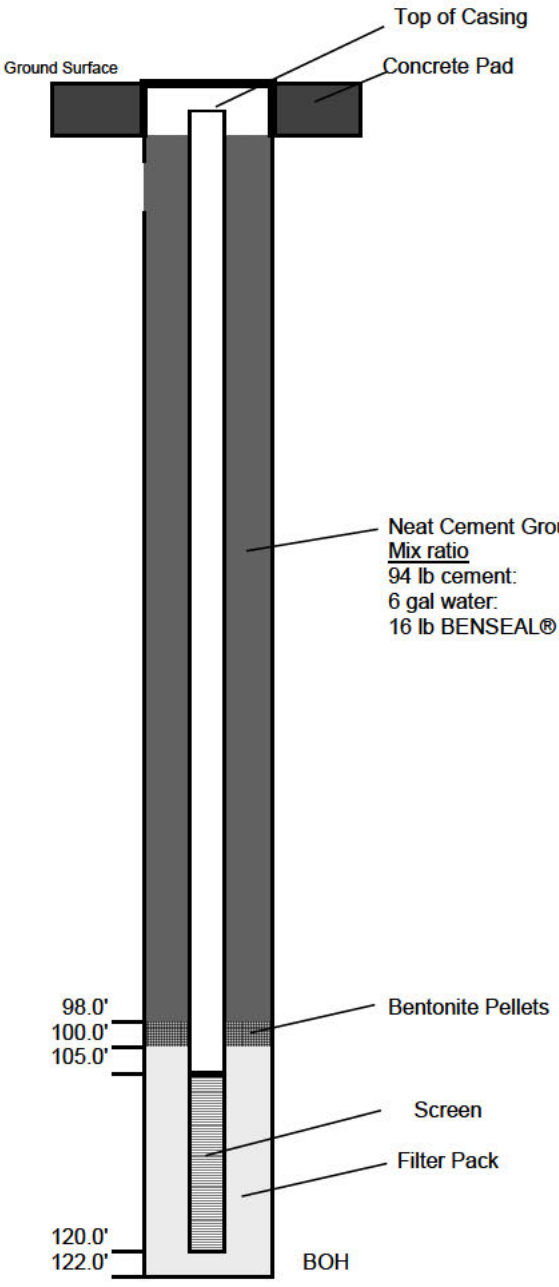
USACE Philadelphia District

Sample collected	Start Depth (ft)	End Depth (ft)	Recovery (ft)	USCS Soil Classification	Geologic Unit Code	Color	Description	Time	Date	Comments
Soil: FDR-DW-15-110-112 Groundwater: FDR-DW-15-113	110	112	2	SM		Light gray with lenses of rusty orange	Silty very fine sand, light gray with lenses of rusty orange	900	04/11/17	
Soil: FDR-DW-15-120-122 Groundwater: FDR-DW-15-122	120	122	2	CL GW		Gray, tan	120 - 120.5 Soft gray sandy clay 120.5 - 121 Large gravels, gray 121 - 121.5 Small gravels, tan, with red sand 121.5 -122 Tan medium sand, some gravel, some clay	1125	04/11/17	
Soil: FDR-DW-15-130-132	129	131	2	GW SM		Light gray with lenses of rusty orange	129-129.25 Gravel 129.25-131 Silty very fine sand, light gray with lenses of rusty orange	1400	04/11/17	
None	140.5	141	0.5	GW		Gray, white, pink, orange, yellow	Gravel, angular	900	04/12/17	
None	141	145		GW			No recovery Refusal at 145	1100	04/12/17	
NOTES:										

Attachment C
Well Construction Records

AS BUILT WELL CONSTRUCTION

HOLE NUMBER: NOVA-DW-14	LOCATION: Philadelphia, PA	DRILLER: [redacted]
PROJECT: Defense Supply Center Philadelphia	ELEVATION: 15.337 NAVD88	DEPTH TO GW (FT 16.32
DATE WELL COMPLETED: 4/26/2017	SURFACE: Soil	DRILLING METHOD: Mud Rotary
DATE DEVELOPMENT COMPLETED: 4/27/2017	TOP OF PVC CASING: 15.176 NAVD88	DEVELOPMENT METHOD:
INSPECTOR: [redacted] CENAP	TOP OF OUTER CASING: 15.557 NAVD88	Pump/Surge



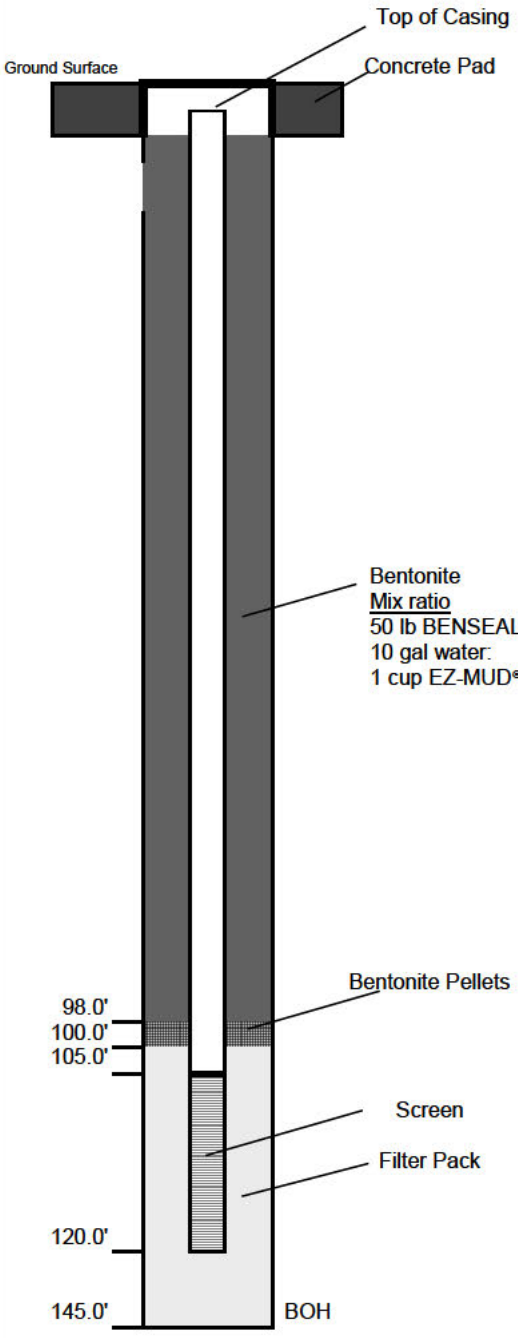
COORDINATES:	X 219985.385
PA State Plane - South	Y 2688592.14
I.D.OF Flush Mount:	Monitorng Well
TYPE OF FLUSH MOUNT:	8" Diameter
TYPE OF SAND:	US Silica #2 Gradation
TYPE OF SEAL:	Bentonite Pellets
TYPE OF SCREEN:	2" slotted PVC
WIDTH OF CASING:	2" OD
TYPE OF CASING:	Schedule 40 PVC
DEPTH TO SHALLOW BOTTOM:	120
WIDTH OF SHALLOW BORING:	5" OD Spin Casing
DEPTH TO DEEP BOTTOM:	120
WIDTH OF DEEP BORING:	5" OD Spin Casing
DEPTH TO TOP OF SEAL:	98
TYPE OF SEAL:	Bentonite Pellets
DEPTH TO TOP OF FILTER PACK:	100
TYPE OF FILTER PACK:	US Silica #2 Gradation
DEPTH TO TOP OF SCREEN:	105
TYPE OF SCREEN:	0.01" Slotted PVC
SLOT SIZE AND LENGTH:	0.01"
I.D. OF SCREEN:	2"
DEPTH TO BOTTOM OF SCREEN:	120

USACE - Philadelphia District

PROJECT: Defense Supply Center Philadelphia (DSCP)	HOLE NO.: NOVA-DW-14

AS BUILT WELL CONSTRUCTION

HOLE NUMBER: FDR-DW-15	LOCATION: Philadelphia, PA	DRILLER: [redacted]
Philadelphia	ELEVATION: 13.933 NAVD88	DEPTH TO GW (FT)*: 14.86
DATE WELL COMPLETED: 4/19/2017	SURFACE: Soil	DRILLING METHOD: Mud Rotary
DATE DEVELOPMENT COMPLETED: 4/27/2017	TOP OF PVC CASING: 13.581 NAVD88	DEVELOPMENT METHOD:
INSPECTOR: [redacted] CENAP	TOP OF OUTER CASING: 13.854 NAVD88	Pump/Surge



COORDINATES:	X 219361.871
PA State Plane South	Y 219361.871
I.D.OF Flush Mount:	Monitorng Well
TYPE OF FLUSH MOUNT:	8" Diameter
TYPE OF SAND:	US Silica #2 Gradation
TYPE OF SEAL:	Bentonite Pellets
TYPE OF SCREEN:	2" slotted PVC
WIDTH OF CASING:	4" OD
TYPE OF CASING:	Schedule 40 PVC
DEPTH TO SHALLOW BOTTOM:	55 ft
WIDTH OF SHALLOW BORING:	8.5" O.D. Augers
DEPTH TO DEEP BOTTOM:	145'
WIDTH OF DEEP BORING:	5" OD Spin Casing
DEPTH TO TOP OF SEAL:	98
TYPE OF SEAL:	Bentonite Pellets
DEPTH TO TOP OF FILTER PACK:	100
TYPE OF FILTER PACK:	US Silica #2 Gradation
DEPTH TO TOP OF SCREEN:	105
TYPE OF SCREEN:	Slotted PVC
SLOT SIZE AND LENGTH:	0.01"
I.D. OF SCREEN:	2"
DEPTH TO BOTTOM OF SCREEN:	120

USACE - Philadelphia District

PROJECT: Defense Supply Center Philadelphia (DSCP)	HOLE NO.: FDR-DW-15

WATER WELL COMPLETION REPORT

Well Driller: [redacted]
Driller License: **0198**
Type of Activity: **New Well**
Date Drilled: **4/6/2017**

Driller Well ID: **DK17026-DW15**
Local Permit #:
Original Well By: **Current Driller**
Drilling Method: **BORED OR AUGERED**

Owner: **USACE**
Address of Well: **Pattison Avenue and S 20th Street**
Zipcode: **19145**
County: **PHILADELPHIA**
Municipality: **PHILADELPHIA**
Municipality Type: **C**
Coordinate Method: **Commercial Street Atlas Program**
Quadrangle: **PHILADELPHIA**
Latitude: **39.90686**
Longitude: **-75.18520**

Well Depth (*ft*): **120**
Depth to Bedrock (*ft*):
Well Yield (*gpm*): **2**
Static Water Level: **14.86** (*ft below land surface*)
Length of Yield Test: **30** (*minutes*)
Use of Well: **TEST**

Well Finish: **SCREEN**
Did Not Encounter Bedrock: **X**
Yield Measure Method: **WATCH & BUCKET**
Water level after yield test: (*ft below land surface*)
Saltwater Zone (*ft*):
Use of Water: **UNUSED**

Description of Well Location and Other Notes:
FDR DW-15

DRILLER'S LOG

UNIT TOP	UNIT BOTTOM	DESCRIPTION OF UNITS PENETRATED
Unit Top 1: **0**	Unit Bottom 1: **12**	Unit 1: **Overburden and Bricks**
Unit Top 2: **12**	Unit Bottom 2: **58**	Unit 2: **Silt, Sand and Clay**
Unit Top 3: **58**	Unit Bottom 3: **63**	Unit 3: **Red Brown and Gray Clay, Gray Sand**
Unit Top 4: **63**	Unit Bottom 4: **66**	Unit 4: **Fine Sand and Silty Clay**
Unit Top 5: **66**	Unit Bottom 5: **72**	Unit 5: **Light Brown Gravel, some Clay and Sand**
Unit Top 6: **72**	Unit Bottom 6: **77**	Unit 6: **Gravelly Sand, Stiff Gray and Red Clay with Iron Nodules**
Unit Top 7: **77**	Unit Bottom 7: **82.5**	Unit 7: **Mottled Clay, Very Soft to Very Stiff**
Unit Top 8: **82.5**	Unit Bottom 8: **92**	Unit 8: **Soft Clay, Light Gray with Red, Silty Sand, Light Gray with Orange**
Unit Top 9: **92**	Unit Bottom 9: **102**	Unit 9: **Fine to Medium Sand, Light Gray to Orange-Brown**
Unit Top 10: **102**	Unit Bottom 10: **112**	Unit 10: **Silty Sand, Light Gray with Rusty Orange**
Unit Top 11: **112**	Unit Bottom 11: **120**	Unit 11: **Gray Sandy Clay**

BOREHOLE

Section 1: Top: **0** Bottom: **120** Diameter: **6**

CASING

Casing 1:

Top: **0** Bottom: **105** Diameter: **2** Material: **PVC OR OTHER PLASTIC**

Seal(Grout) 1:

Top: **1** Bottom: **100** Type: **GROUT WITH BENTONITE**

Casing 2:

Top: Bottom: Diameter: Material:

Seal(Grout) 2:

Top: **100** Bottom: **102** Type: **BENTONITE CHIPS/PELLETS**

SCREEN/SLOT

Screen 1: Top: **105** Bottom: **120** Diameter: **2**

Type: **SCREEN**

Material: **PLASTIC** Slot Size: **0.01**

Packing: **Screened Sand**

WATER BEARING ZONE

Zone 1: Top: **113** Bottom: **115** Yield: **2**

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

[redacted]

Driller's Signature (required) Date

WATER WELL COMPLETION REPORT

Well Driller: [redacted]
Driller Well ID: **DK17026-DW14**
Driller License: **0198**
Local Permit #:
Type of Activity: **New Well**
Original Well By: **Current Driller**
Date Drilled: **4/21/2017**
Drilling Method: **BORED OR AUGERED**

Owner: **USACE**
Address of Well: **S 20th and Hartranft Streets**
Zipcode: **19145**
County: **PHILADELPHIA**
Municipality: **PHILADELPHIA**
Municipality Type: **C**
Coordinate Method: **Commercial Street Atlas Program**
Quadrangle: **PHILADELPHIA**
Latitude: **39.90863**
Longitude: **-75.18284**

Well Depth (*ft*): **120**
Well Finish: **SCREEN**
Depth to Bedrock (*ft*):
Did Not Encounter Bedrock: **X**
Well Yield (*gpm*): **2**
Yield Measure Method: **WATCH & BUCKET**
Static Water Level: **16.32** (*ft below land surface*)
Water level after yield test: (*ft below land surface*)
Length of Yield Test: **30** (*minutes*)
Saltwater Zone (*ft*):
Use of Well: **TEST**
Use of Water: **UNUSED**

Description of Well Location and Other Notes:
NOVA DW-14

DRILLER'S LOG

UNIT TOP	UNIT BOTTOM	DESCRIPTION OF UNITS PENETRATED
Unit Top 1: **0**	Unit Bottom 1: **5**	Unit 1: **Overburden and Silty Clay**
Unit Top 2: **5**	Unit Bottom 2: **60**	Unit 2: **Silt, Sand and Clays**
Unit Top 3: **60**	Unit Bottom 3: **65**	Unit 3: **Gray and Black Clay**
Unit Top 4: **65**	Unit Bottom 4: **67**	Unit 4: **Hard Black Clay**
Unit Top 5: **67**	Unit Bottom 5: **76**	Unit 5: **Trenton Gravels**
Unit Top 6: **76**	Unit Bottom 6: **80**	Unit 6: **Red and Gray Clay**
Unit Top 7: **80**	Unit Bottom 7: **91**	Unit 7: **White Clay, Coarse Brown Sand**
Unit Top 8: **91**	Unit Bottom 8: **100**	Unit 8: **White Clay, Iron Staining**
Unit Top 9: **100**	Unit Bottom 9: **110**	Unit 9: **White and Gray Hard Clay with Mixture of Fine Sand**
Unit Top 10: **110**	Unit Bottom 10: **120**	Unit 10: **Soft Silty Clay, Tan, Coarse Fine Sand and Gravels, Gray Pink and Orange**

BOREHOLE

Section 1: Top: **0** Bottom: **120** Diameter: **6**

CASING

Casing 1:

Top: **0** Bottom: **105** Diameter: **2** Material: **PVC OR OTHER PLASTIC**

Seal(Grout) 1:

Top: **1** Bottom: **100** Type: **GROUT WITH BENTONITE**

Casing 2:

Top: Bottom: Diameter: Material:

Seal(Grout) 2:

Top: **100** Bottom: **102** Type: **BENTONITE CHIPS/PELLETS**

SCREEN/SLOT

Screen 1: Top: **105** Bottom: **120** Diameter: **2**

Type: **SCREEN**

Material: **PLASTIC** Slot Size: **0.01**

Packing: **Screened Sand**

WATER BEARING ZONE

Zone 1: Top: **113** Bottom: **115** Yield: **2**

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

[redacted]

Driller's Signature (required) Date

Attachment D
Analytical Results

SGS ACCUTEST IS PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

e-Hardcopy 2.0
Automated Report

Technical Report for

USACE-Philadelphia District

[redacted]

SGS Accutest Job Number: [redacted]

Sampling Dates: 04/10/17 - 04/11/17



Report to:

USACE-Philadelphia District
[redacted]@usace.army.mil
ATTN: [redacted]

Total number of pages in report: 156

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

[redacted]
Laboratory Director

Client Service contact: [redacted]

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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Unauthorized modification of this report is strictly prohibited.

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Sample Summary

USACE-Philadelphia District

DSCP, 20th & Pattison Avenue, Philadelphia, PA

Job No: [redacted]

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
[redacted]1	04/10/17	16:30	[redacted]	04/11/17	AQ	Ground Water	FDR-DW-15-102
[redacted]2	04/11/17	10:30	[redacted]	04/11/17	AQ	Ground Water	FDR-DW-15-113
[redacted]3	04/11/17	12:45	[redacted]	04/11/17	AQ	Ground Water	FDR-DW-15-122
[redacted]4	04/11/17	12:45	[redacted]	04/11/17	AQ	Trip Blank Water	TRIP BLANK

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: USACE-Philadelphia District **Job No** [redacted]

Site: DSCP, 20th & Pattison Avenue, Philadelphia, PA **Report Date** 4/13/2017 9:39:00 AM

On 04/11/2017, 3 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 4.1 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of [redacted] was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260C

Matrix: AQ **Batch ID:** VU9776

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) [redacted]2DUP,[redacted]3MS were used as the QC samples indicated.
- RPD(s) for Duplicate for Toluene are outside control limits. High RPD possibly due to sample analyzed from different vials.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: [redacted]
Account: USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA
Collected: 04/10/17 thru 04/11/17

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
[redacted]1	FDR-DW-15-102					
No hits reported in this sample.						
[redacted]2	FDR-DW-15-113					
Toluene		4.7	1.0	0.50	ug/l	SW846 8260C
[redacted]3	FDR-DW-15-122					
Toluene		7.1	1.0	0.50	ug/l	SW846 8260C
[redacted]4	TRIP BLANK					
No hits reported in this sample.						

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID: FDR-DW-15-102
Lab Sample ID: [redacted]1
Matrix: AQ - Ground Water
Method: SW846 8260C
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Date Sampled: 04/10/17
Date Received: 04/11/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U213697.D	1	04/12/17	[redacted]	n/a	n/a	VU9776
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	LOQ	LOD	Units	Q
71-43-2	Benzene	0.25 U	0.50	0.25	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	0.50 U	1.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		76-120%
17060-07-0	1,2-Dichloroethane-D4	98%		73-122%
2037-26-5	Toluene-D8	98%		84-119%
460-00-4	4-Bromofluorobenzene	104%		78-117%

U = Not detected LOD = Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: FDR-DW-15-113
Lab Sample ID: [redacted]2
Matrix: AQ - Ground Water
Method: SW846 8260C
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Date Sampled: 04/11/17
Date Received: 04/11/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U213696.D	1	04/12/17	[redacted]	n/a	n/a	VU9776
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	LOQ	LOD	Units	Q
71-43-2	Benzene	0.25 U	0.50	0.25	ug/l	
108-88-3	Toluene	4.7	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	0.50 U	1.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		76-120%
17060-07-0	1,2-Dichloroethane-D4	99%		73-122%
2037-26-5	Toluene-D8	98%		84-119%
460-00-4	4-Bromofluorobenzene	103%		78-117%

U = Not detected LOD = Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: FDR-DW-15-122
Lab Sample ID: [redacted]3
Matrix: AQ - Ground Water
Method: SW846 8260C
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Date Sampled: 04/11/17
Date Received: 04/11/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U213695.D	1	04/12/17	[redacted]	n/a	n/a	VU9776
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	LOQ	LOD	Units	Q
71-43-2	Benzene	0.25 U	0.50	0.25	ug/l	
108-88-3	Toluene	7.1	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	0.50 U	1.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		76-120%
17060-07-0	1,2-Dichloroethane-D4	97%		73-122%
2037-26-5	Toluene-D8	99%		84-119%
460-00-4	4-Bromofluorobenzene	103%		78-117%

U = Not detected LOD = Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: TRIP BLANK
Lab Sample ID: [redacted]4
Matrix: AQ - Trip Blank Water
Method: SW846 8260C
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Date Sampled: 04/11/17
Date Received: 04/11/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	U213698.D	1	04/12/17	[redacted]	n/a	n/a	VU9776
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	LOQ	LOD	Units	Q
71-43-2	Benzene	0.25 U	0.50	0.25	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	0.50 U	1.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		76-120%
17060-07-0	1,2-Dichloroethane-D4	98%		73-122%
2037-26-5	Toluene-D8	100%		84-119%
460-00-4	4-Bromofluorobenzene	105%		78-117%

U = Not detected LOD = Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

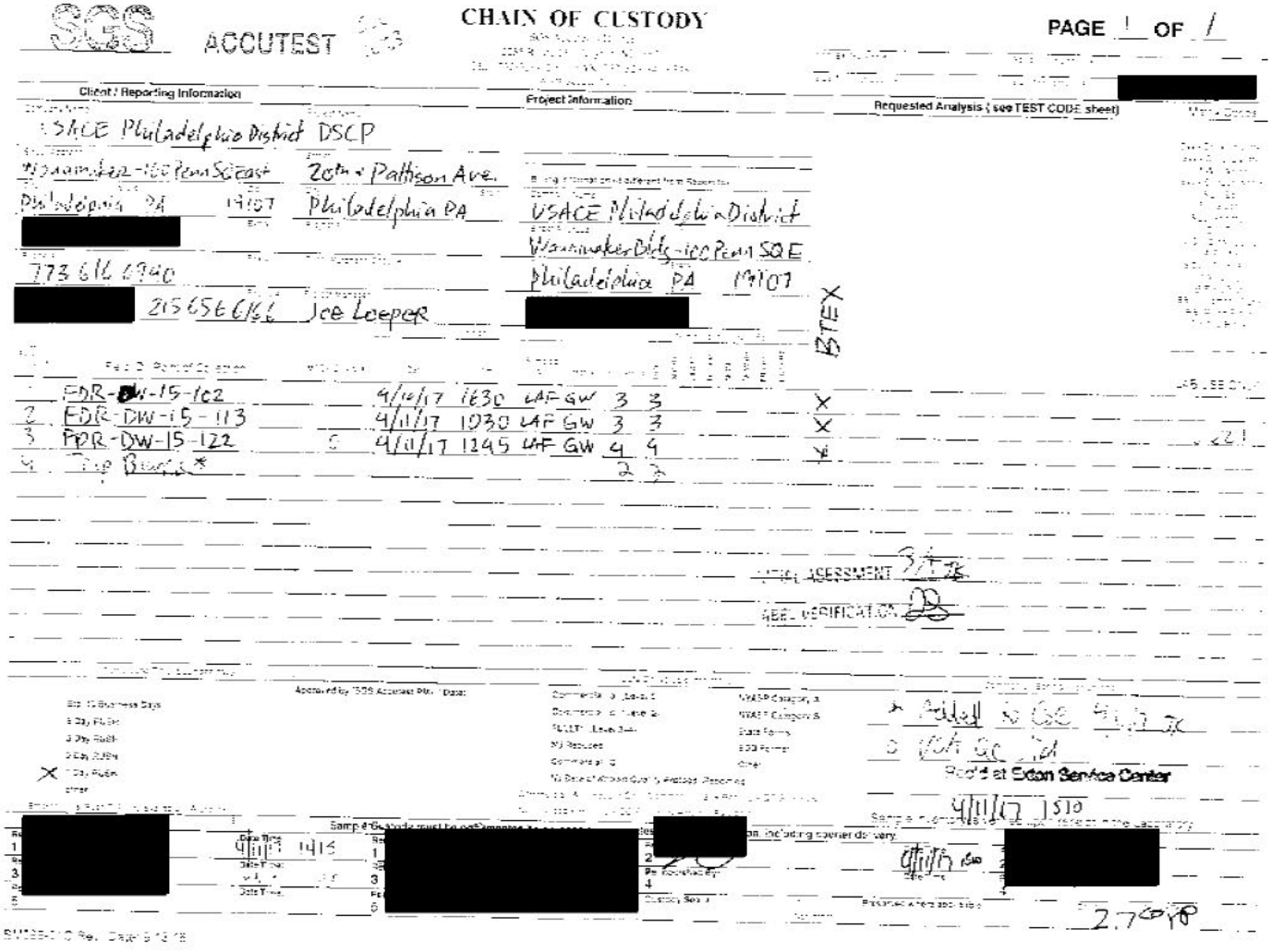
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody



CHAIN OF CUSTODY

ACCUTEST

PAGE 1 OF 1

Client / Reporting Information

Project Information

Requested Analysis (see TEST CODE sheet)

USACE Philadelphia District DSCP

Wanamaker-100 Penn Sq East

Philadelphia PA 19107

[redacted]

773 616 4940

[redacted] 215 656 6761 Joe Looper

Project Name

20th + Pattison Ave.

Philadelphia PA

Billing Information (if different from Report to)

USACE Philadelphia District

Wanamaker Bldg-100 Penn SQ E

Philadelphia PA 19107

[redacted]

BTEX

	Field ID / Point of Collection	MW/SB #	Date	Time	Sampled by	Matrix	# of bottles	
1	FDR-DW-15-102		4/10/17	1630	LAF	GW	3	X
2	FDR-DW-15-113		4/11/17	1030	LAF	GW	3	X
3	FDR-DW-15-122		4/11/17	1245	LAF	GW	4	X
4	Trip Blank *						2	

INITIAL ASSESSMENT

LABEL VERIFICATION

Approved by (SGS Accutest PM): Date:

Turn-around Time

10 Business Days

5 Day RUSH

3 Day RUSH

2 Day RUSH

X 1 Day RUSH

other

Commercial "A" (Level 1)

Commercial "B" (Level 2)

FULLT1 (Level 3+)

NJ Reduced

Commercial "C"

NJ Deliverables

NYASP Category A

NYASP Category B

State Forms

EDD Format

Other

Special instructions/ Comments:

Relinquished by: [redacted] Date/Time: 4/11/17 1415

Received by: [redacted]

Relinquished by: [redacted] Date/Time: 4/11/17 1510

Received by: [redacted]

Relinquished by: Date/Time:

Received by: Date/Time:

Custody Seal #

Preserved where applicable

On Ice

Cooler Temp

Received at Eaton Service Center

2.7 C

RMT88-01 D Rev. Date 8 15 16

5.1

5

SGS Accutest Sample Receipt Summary

Job Number: [redacted] **Client:** _____ **Project:** _____

Date / Time Received: 4/11/2017 7:15:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.7);

Cooler Temps (Corrected) °C: Cooler 1: (4.1);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	☐
2. Trip Blank listed on COC:	☑		☐	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

[redacted] Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

USACE-Philadelphia District

DSCP, 20th & Pattison Avenue, Philadelphia, PA

Job No: [redacted]

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
[redacted]1 Collected: 10-APR-17 16:30 By: [redacted] Received: 11-APR-17 [redacted] FDR-DW-15-102						
[redacted]1	SW846 8260C	12-APR-17 13:21	[redacted]			V8260BTX
[redacted]2 Collected: 11-APR-17 10:30 By: [redacted] Received: 11-APR-17 [redacted] FDR-DW-15-113						
[redacted]2	SW846 8260C	12-APR-17 12:52	[redacted]			V8260BTX
[redacted]3 Collected: 11-APR-17 12:45 By: [redacted] Received: 11-APR-17 [redacted] FDR-DW-15-122						
[redacted]3	SW846 8260C	12-APR-17 12:23	[redacted]			V8260BTX
[redacted]4 Collected: 11-APR-17 12:45 By: [redacted] Received: 11-APR-17 [redacted] TRIP BLANK						
[redacted]4	SW846 8260C	12-APR-17 13:50	[redacted]			V8260BTX

SGS Accutest Internal Chain of Custody

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA
Received: 04/11/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
[redacted] 1.2	Secured Storage	[redacted]	04/12/17 11:35	Retrieve from Storage
1.2	[redacted]	GCMSU	04/12/17 11:37	Load on Instrument
1.2	GCMSU	[redacted]	04/13/17 09:32	Unload from Instrument
1.2	[redacted]	Secured Storage	04/13/17 09:32	Return to Storage
[redacted] 2.1	Secured Storage	[redacted]	04/12/17 11:35	Retrieve from Storage
2.1	[redacted]	GCMSU	04/12/17 11:37	Load on Instrument
2.1	GCMSU	[redacted]	04/13/17 09:32	Unload from Instrument
2.1	[redacted]	Secured Storage	04/13/17 09:32	Return to Storage
[redacted] 2.2	Secured Storage	[redacted]	04/12/17 11:35	Retrieve from Storage
2.2	[redacted]	GCMSU	04/12/17 11:37	Load on Instrument
2.2	GCMSU	[redacted]	04/13/17 09:32	Unload from Instrument
2.2	[redacted]	Secured Storage	04/13/17 09:32	Return to Storage
[redacted] 3.1	Secured Storage	[redacted]	04/12/17 11:35	Retrieve from Storage
3.1	[redacted]	GCMSU	04/12/17 11:37	Load on Instrument
3.1	GCMSU	[redacted]	04/13/17 09:32	Unload from Instrument
3.1	[redacted]	Secured Storage	04/13/17 09:32	Return to Storage
[redacted] 3.2	Secured Storage	[redacted]	04/12/17 11:35	Retrieve from Storage
3.2	[redacted]	GCMSU	04/12/17 11:37	Load on Instrument
3.2	GCMSU	[redacted]	04/13/17 09:32	Unload from Instrument
3.2	[redacted]	Secured Storage	04/13/17 09:32	Return to Storage
[redacted] 4.2	Secured Storage	[redacted]	04/12/17 11:35	Retrieve from Storage
4.2	[redacted]	GCMSU	04/12/17 11:37	Load on Instrument
4.2	GCMSU	[redacted]	04/13/17 09:32	Unload from Instrument
4.2	[redacted]	Secured Storage	04/13/17 09:32	Return to Storage

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU9776-MB	U213693.D	1	04/12/17	[redacted]	n/a	n/a	VU9776

The QC reported here applies to the following samples: **Method:** SW846 8260C

[redacted]1, [redacted]2, [redacted]3, [redacted]4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.14	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.23	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	107%	76-120%
17060-07-0	1,2-Dichloroethane-D4	99%	73-122%
2037-26-5	Toluene-D8	99%	84-119%
460-00-4	4-Bromofluorobenzene	102%	78-117%

Blank Spike Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VU9776-BS	U213694.D	1	04/12/17	[redacted]	n/a	n/a	VU9776

The QC reported here applies to the following samples: **Method:** SW846 8260C

[redacted]1, [redacted]2, [redacted]3, [redacted]4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	46.8	94	80-118
100-41-4	Ethylbenzene	50	47.5	95	84-115
108-88-3	Toluene	50	47.8	96	84-117
1330-20-7	Xylene (total)	150	143	95	85-117

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	107%	76-120%
17060-07-0	1,2-Dichloroethane-D4	97%	73-122%
2037-26-5	Toluene-D8	98%	84-119%
460-00-4	4-Bromofluorobenzene	101%	78-117%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
[redacted]3MS	U213700.D	1	04/12/17	[redacted]	n/a	n/a	VU9776
[redacted]3	U213695.D	1	04/12/17	[redacted]	n/a	n/a	VU9776

The QC reported here applies to the following samples: **Method:** SW846 8260C

[redacted]1, [redacted]2, [redacted]3, [redacted]4

CAS No.	Compound	[redacted]3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
71-43-2	Benzene	0.50 U		50	47.4	95	54-138
100-41-4	Ethylbenzene	1.0 U		50	48.4	97	48-143
108-88-3	Toluene	7.1		50	55.6	97	61-136
1330-20-7	Xylene (total)	1.0 U		150	144	96	56-141

CAS No.	Surrogate Recoveries	MS	[redacted]3	Limits
1868-53-7	Dibromofluoromethane	107%	107%	76-120%
17060-07-0	1,2-Dichloroethane-D4	97%	97%	73-122%
2037-26-5	Toluene-D8	98%	99%	84-119%
460-00-4	4-Bromofluorobenzene	101%	103%	78-117%

* = Outside of Control Limits.

Duplicate Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
[redacted]2DUP	U213699.D	1	04/12/17	[redacted]	n/a	n/a	VU9776
[redacted]2	U213696.D	1	04/12/17		n/a	n/a	VU9776

The QC reported here applies to the following samples: **Method:** SW846 8260C

[redacted]1, [redacted]2, [redacted]3, [redacted]4

CAS No.	Compound	[redacted]2 ug/l	Q	DUP ug/l	Q	RPD	Limits
71-43-2	Benzene	0.50 U		ND		nc	20
100-41-4	Ethylbenzene	1.0 U		ND		nc	20
108-88-3	Toluene	4.7		3.4		32* [a]	20
1330-20-7	Xylene (total)	1.0 U		ND		nc	20

CAS No.	Surrogate Recoveries	DUP	[redacted]2	Limits
1868-53-7	Dibromofluoromethane	107%	106%	76-120%
17060-07-0	1,2-Dichloroethane-D4	99%	99%	73-122%
2037-26-5	Toluene-D8	98%	98%	84-119%
460-00-4	4-Bromofluorobenzene	104%	103%	78-117%

(a) High RPD possibly due to sample analyzed from different vials.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample:	VU9728-BFB	**Injection Date:**	03/03/17
Lab File ID:	U212475.D	**Injection Time:**	12:40
Instrument ID:	GCMSU		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	15956	18.4		Pass
75	30.0 - 60.0% of mass 95	40480	46.6		Pass
95	Base peak, 100% relative abundance	86874	100.0		Pass
96	5.0 - 9.0% of mass 95	5662	6.52		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	80800	93.0		Pass
175	5.0 - 9.0% of mass 174	6379	7.34	(7.89) [a]	Pass
176	95.0 - 101.0% of mass 174	78480	90.3	(97.1) [a]	Pass
177	5.0 - 9.0% of mass 176	5296	6.10	(6.75) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VU9728-IC9728	U212476.D	03/03/17	13:12	00:32	Initial cal 0.2
VU9728-IC9728	U212477.D	03/03/17	13:41	01:01	Initial cal 0.5
VU9728-IC9728	U212478.D	03/03/17	14:11	01:31	Initial cal 1
VU9728-IC9728	U212479.D	03/03/17	14:40	02:00	Initial cal 2
VU9728-IC9728	U212480.D	03/03/17	15:09	02:29	Initial cal 5
VU9728-IC9728	U212481.D	03/03/17	15:38	02:58	Initial cal 10
VU9728-IC9728	U212482.D	03/03/17	16:07	03:27	Initial cal 20
VU9728-ICC9728	U212483.D	03/03/17	16:36	03:56	Initial cal 50
VU9728-IC9728	U212484.D	03/03/17	17:05	04:25	Initial cal 100
VU9728-IC9728	U212485.D	03/03/17	17:34	04:54	Initial cal 200
VU9728-ICV9728	U212488.D	03/03/17	19:02	06:22	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample:	VU9765-BFB	**Injection Date:**	04/01/17
Lab File ID:	U213358.D	**Injection Time:**	09:18
Instrument ID:	GCMSU		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	13705	17.6		Pass
75	30.0 - 60.0% of mass 95	36168	46.5		Pass
95	Base peak, 100% relative abundance	77784	100.0		Pass
96	5.0 - 9.0% of mass 95	5266	6.77		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	72194	92.8		Pass
175	5.0 - 9.0% of mass 174	5630	7.24	(7.80) [a]	Pass
176	95.0 - 101.0% of mass 174	70650	90.8	(97.9) [a]	Pass
177	5.0 - 9.0% of mass 176	4487	5.77	(6.35) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VU9765-IC9728	U213360.D	04/01/17	10:34	01:16	Initial cal 0.5
VU9765-IC9728	U213361.D	04/01/17	11:04	01:46	Initial cal 1
VU9765-IC9728	U213362.D	04/01/17	11:33	02:15	Initial cal 2
VU9765-IC9728	U213363.D	04/01/17	12:02	02:44	Initial cal 5
VU9765-IC9728	U213364.D	04/01/17	12:31	03:13	Initial cal 10
VU9765-IC9728	U213365.D	04/01/17	13:01	03:43	Initial cal 20
VU9765-IC9728	U213366.D	04/01/17	13:30	04:12	Initial cal 50
VU9765-IC9728	U213367.D	04/01/17	13:59	04:41	Initial cal 100
VU9765-IC9728	U213368.D	04/01/17	14:28	05:10	Initial cal 200
VU9765-ICV9728	U213371.D	04/01/17	15:56	06:38	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample:	VU9776-BFB	**Injection Date:**	04/12/17
Lab File ID:	U213687.D	**Injection Time:**	07:32
Instrument ID:	GCMSU		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	16201	17.4		Pass
75	30.0 - 60.0% of mass 95	42163	45.3		Pass
95	Base peak, 100% relative abundance	93043	100.0		Pass
96	5.0 - 9.0% of mass 95	6085	6.54		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 120.0% of mass 95	86107	92.5		Pass
175	5.0 - 9.0% of mass 174	6727	7.23	(7.81) [a]	Pass
176	95.0 - 101.0% of mass 174	84171	90.5	(97.8) [a]	Pass
177	5.0 - 9.0% of mass 176	5887	6.33	(6.99) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
VU9776-CC9728	U213688.D	04/12/17	08:01	00:29	Continuing cal 20
VU9776-CC9728	U213689.D	04/12/17	08:48	01:16	Continuing cal 1
VU9776-MB	U213693.D	04/12/17	11:13	03:41	Method Blank
VU9776-BS	U213694.D	04/12/17	11:42	04:10	Blank Spike
[redacted]3	U213695.D	04/12/17	12:23	04:51	FDR-DW-15-122
[redacted]2	U213696.D	04/12/17	12:52	05:20	FDR-DW-15-113
[redacted]1	U213697.D	04/12/17	13:21	05:49	FDR-DW-15-102
[redacted]4	U213698.D	04/12/17	13:50	06:18	TRIP BLANK
[redacted]2DUP	U213699.D	04/12/17	14:20	06:48	Duplicate
[redacted]3MS	U213700.D	04/12/17	14:49	07:17	Matrix Spike
VU9776-ECC9728	U213701.D	04/12/17	15:28	07:56	Ending cal 50
JC40220-4MS	U213705.D	04/12/17	17:43	10:11	Matrix Spike
JC40220-4MSD	U213706.D	04/12/17	18:12	10:40	Matrix Spike Duplicate
JC40220-4	U213710.D	04/12/17	20:10	12:38	(used for QC only; not part of job [redacted]

Volatile Internal Standard Area Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Check Std: VU9776-CC9728 **Injection Date:** 04/12/17
Lab File ID: U213688.D **Injection Time:** 08:01
Instrument ID: GCMSU **Method:** SW846 8260C

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	220000	7.62	282718	9.83	418169	10.75	392027	14.07	212728	16.64
Upper Limit [a]	440000	8.12	565436	10.33	836338	11.25	784054	14.57	425456	17.14
Lower Limit [b]	110000	7.12	141359	9.33	209085	10.25	196014	13.57	106364	16.14

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VU9776-MB	230537	7.63	282282	9.83	411925	10.74	383099	14.07	203395	16.64
VU9776-BS	208550	7.62	273526	9.83	406659	10.74	381760	14.07	209808	16.64
[redacted]3	188665	7.63	283940	9.83	418668	10.75	386434	14.07	205475	16.64
[redacted]2	218613	7.62	290548	9.82	427945	10.74	398280	14.07	210427	16.64
[redacted]1	218645	7.62	289698	9.83	424287	10.75	397525	14.07	208507	16.64
[redacted]4	214848	7.64	289593	9.83	422949	10.74	395019	14.07	202277	16.64
[redacted]2DUP	214156	7.62	283279	9.83	416499	10.74	388300	14.07	203519	16.64
[redacted]3MS	209510	7.62	275957	9.82	411853	10.75	387711	14.07	212157	16.64
VU9776-ECC9728	189397	7.62	272978	9.83	409752	10.74	380425	14.07	210138	16.64

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Volatile Surrogate Recovery Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Method: SW846 8260C **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
[redacted]1	U213697.D	106	98	98	104
[redacted]2	U213696.D	106	99	98	103
[redacted]3	U213695.D	107	97	99	103
[redacted]4	U213698.D	106	98	100	105
[redacted]2DUP	U213699.D	107	99	98	104
[redacted]3MS	U213700.D	107	97	98	101
VU9776-BS	U213694.D	107	97	98	101
VU9776-MB	U213693.D	107	99	99	102

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	76-120%
S2 = 1,2-Dichloroethane-D4	73-122%
S3 = Toluene-D8	84-119%
S4 = 4-Bromofluorobenzene	78-117%

Initial Calibration Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9728-ICC9728
Lab FileID: U212483.D

Response Factor Report MSU

Method : [redacted]MU9728.M (RTE Integrator)
Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
Last Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

Calibration Files
5 =U212480.D 2 =U212479.D 20 =U212482.D 50 =U212483.D
100 =U212484.D 1 =U212478.D 200 =U212485.D 10 =U212481.D
0.5 =U212477.D 0.2 =U212476.D = =

Compound	5	2	20	50	100	1	200	10	0.5	0.2	Avg	%RSD
1) I Tert Butyl Alcohol-d9	----------ISTD----------											
2) tertiary butyl alcohol	1.394	1.381	1.344	1.389	1.388	1.412	1.397	1.436	1.144		1.365	6.33
3) Ethanol											0.000	-1.00
4) 1,4-dioxane	0.101	0.097	0.105	0.108	0.113	0.089	0.121	0.109			0.105	9.26
5) I pentafluorobenzene	----------ISTD----------											
6) chlorotrifluoroethene											0.000	-1.00
7) chlorodifluoromethane	0.420	0.371	0.402	0.453	0.443	0.395	0.450	0.406			0.417	7.03
8) dichlorodifluoromethane	0.637	0.602	0.659	0.721	0.715	0.470	0.714	0.630			0.643	12.89
9) chloromethane	0.805	0.806	0.837	0.860	0.862	0.836	0.827	0.809	0.899		0.838	3.73
10) vinyl chloride	0.795	0.728	0.800	0.855	0.848	0.717	0.824	0.777	0.770		0.790	6.09
11) bromomethane	0.477	0.474	0.481	0.451	0.425	0.511	0.358	0.483	0.482		0.460	9.81
12) chloroethane	0.385	0.383	0.391	0.389	0.258	0.368		0.384	0.312		0.359	13.46
13) trichlorofluoromethane	0.719	0.669	0.743	0.804	0.798	0.525	0.790	0.723	0.612		0.709	13.17
14) vinyl bromide	0.705	0.675	0.737	0.765	0.762	0.700	0.729	0.722	0.700	0.779	0.727	4.60
15) ethyl ether	0.301	0.286	0.312	0.317	0.313	0.286	0.314	0.316	0.213		0.295	11.30
16) 2-chloropropane	0.742	0.767	0.764	0.841	0.867	0.890	0.911	0.793	0.794		0.819	7.37
17) acrolein	0.120	0.111	0.120	0.118	0.113		0.112	0.116			0.116	3.34
18) freon 113	0.376		0.378	0.417	0.401		0.404	0.365			0.390	5.16
19) 1,1-dichloroethene	0.475	0.484	0.481	0.512	0.503	0.501	0.503	0.489	0.471	0.554	0.498	4.83
20) acetone	0.061	0.065	0.059	0.061	0.056	0.068	0.054	0.060	0.069		0.062	8.35
21) acetonitrile	0.095	0.102	0.092	0.094	0.085		0.082	0.096			0.092	7.44
22) iodomethane	0.909	0.883	0.933	0.978	0.961	0.930	0.958	0.935	0.779		0.918	6.48
23) carbon disulfide												

1.501 1.534 1.526 1.622 1.570 1.643 1.558 1.550 1.485 1.977 1.597 8.92

24) methylene chloride
0.506 0.545 0.541 0.547 0.535 0.575 0.536 0.528 0.486 0.533 4.76

25) methyl acetate
0.547 0.543 0.530 0.542 0.505 0.674 0.499 0.548 0.548 9.86

26) methyl tert butyl ether
1.534 1.551 1.622 1.644 1.593 1.685 1.598 1.594 1.567 1.531 1.592 3.08

27) trans-1,2-dichloroethene
0.507 0.508 0.505 0.527 0.514 0.551 0.510 0.507 0.473 0.511 4.01

28) hexane
0.730 0.657 0.709 0.771 0.742 0.703 0.759 0.705 0.857 0.737 7.64

29) di-isopropyl ether
1.881 1.827 1.878 1.901 1.829 1.931 1.798 1.882 1.831 1.862 2.31

30) ethyl tert-butyl ether
1.746 1.706 1.727 1.762 1.710 1.713 1.707 1.726 1.674 1.719 1.48

31) 2-butanone
0.078 0.072 0.079 0.080 0.075 0.074 0.073 0.078 0.065 0.075 6.49

32) 1,1-dichloroethane
0.958 0.966 0.984 0.990 0.971 1.009 0.962 0.972 0.871 0.893 0.958 4.45

33) chloroprene
0.850 0.764 0.819 0.853 0.830 0.735 0.824 0.825 0.793 0.810 4.84

34) acrylonitrile
0.227 0.208 0.260 0.260 0.244 0.189 0.245 0.252 0.236 10.92

35) vinyl acetate
0.103 0.087 0.116 0.118 0.112 0.113 0.112 0.109 9.75

36) ethyl acetate
0.107 0.094 0.112 0.112 0.104 0.100 0.111 0.106 6.49

37) 2,2-dichloropropane
0.707 0.714 0.690 0.711 0.687 0.773 0.664 0.712 0.740 0.711 4.44

38) cis-1,2-dichloroethene
0.559 0.558 0.568 0.571 0.561 0.604 0.557 0.568 0.512 0.553 0.561 4.00

39) methyl acrylate
0.091 0.074 0.101 0.103 0.099 0.100 0.099 0.095 10.56

40) propionitrile
0.099 0.096 0.102 0.101 0.094 0.100 0.094 0.100 0.086 0.097 5.34

41) bromochloromethane
0.285 0.275 0.287 0.290 0.286 0.284 0.290 0.284 0.208 0.277 9.40

42) tetrahydrofuran
0.284 0.349 0.271 0.264 0.244 0.242 0.270 0.275 13.08

43) chloroform
0.897 0.938 0.902 0.911 0.897 1.059 0.892 0.902 1.037 0.937 6.87

44) tert-butyl Formate
0.555 0.522 0.562 0.581 0.555 0.554 0.546 0.570 0.503 0.550 4.38

45) iso-butyl alcohol
0.046 0.051 0.045 0.045 0.040 0.054 0.037 0.048 0.059 0.047 14.17

46) dibromofluoromethane (s)
0.417 0.419 0.425 0.421 0.421 0.417 0.416 0.416 0.417 0.418 0.419 0.71

47) methacrylonitrile
0.267 0.259 0.278 0.274 0.263 0.278 0.266 0.270 0.269 2.60

48) 1,1,1-trichloroethane
0.712 0.722 0.720 0.770 0.759 0.743 0.766 0.733 0.635 0.729 5.61

49) cyclohexane
0.688 0.571 0.647 0.719 0.689 0.556 0.737 0.659 0.688 0.661 9.36

50) 1,1-dichloropropene
0.709 0.718 0.713 0.754 0.749 0.688 0.752 0.741 0.619 0.716 5.99

51) carbon tetrachloride
0.666 0.660 0.676 0.721 0.719 0.688 0.729 0.689 0.581 0.609 0.674 7.15

52) tert amyl alcohol
0.053 0.057 0.053 0.053 0.047 0.056 0.044 0.053 0.043 0.051 10.02

53) isopropyl acetate

0.136 0.123 0.138 0.142 0.133 0.134 0.142 0.135 4.90

54) I 1,4-difluorobenzene ----------ISTD----------

55) 1,2-dichloroethane-d4 (s)
0.352 0.352 0.347 0.342 0.335 0.350 0.342 0.355 0.348 0.350 0.347 1.78

56) iso-octane
1.285 1.251 1.247 1.373 1.289 1.261 1.340 1.225 1.444 1.302 5.46

57) n-butyl alcohol
0.019 0.019 0.020 0.020 0.018 0.020 0.014 0.020 0.019 0.019 10.05

58) benzene
1.469 1.478 1.464 1.479 1.435 1.578 1.428 1.496 1.419 1.633 1.488 4.55

59) tert-amyl methyl ether
1.200 1.159 1.158 1.166 1.122 1.271 1.128 1.196 1.201 1.178 3.86

60) heptane
0.279 0.265 0.272 0.299 0.285 0.259 0.299 0.271 0.310 0.282 6.20

61) 1,2-dichloroethane
0.505 0.505 0.511 0.506 0.488 0.526 0.489 0.511 0.472 0.502 3.16

62) ethyl acrylate
0.576 0.557 0.593 0.587 0.556 0.598 0.558 0.587 0.533 0.572 3.79

63) trichloroethene
0.371 0.369 0.375 0.390 0.383 0.383 0.385 0.385 0.351 0.377 0.377 2.98

64) methylcyclohexane
0.583 0.558 0.584 0.637 0.615 0.540 0.628 0.582 0.585 0.590 5.36

65) 2-nitropropane
0.008 0.010 0.009 0.009 0.008 0.009 6.81

66) 2-chloroethyl vinyl ether
0.255 0.239 0.264 0.276 0.265 0.250 0.264 0.267 0.236 0.355 0.267 12.53

67) methyl methacrylate
0.120 0.112 0.122 0.123 0.118 0.108 0.118 0.119 0.118 4.36

68) 1,2-dichloropropane
0.396 0.397 0.403 0.402 0.392 0.428 0.393 0.406 0.389 0.401 2.96

69) dibromomethane
0.239 0.237 0.251 0.250 0.244 0.242 0.249 0.246 0.196 0.240 7.06

70) bromodichloromethane
0.497 0.502 0.515 0.525 0.518 0.538 0.530 0.507 0.468 0.497 0.510 3.96

71) epichlorohydrin
0.054 0.056 0.054 0.054 0.050 0.062 0.050 0.055 0.061 0.055 7.44

72) cis-1,3-dichloropropene
0.646 0.655 0.673 0.682 0.670 0.680 0.682 0.662 0.570 0.665 0.659 5.07

73) 4-methyl-2-pentanone
0.196 0.190 0.195 0.190 0.176 0.197 0.173 0.194 0.187 0.220 0.192 6.72

74) 3-methyl-1-butanol
0.032 0.031 0.032 0.032 0.028 0.034 0.026 0.034 0.034 0.032 9.10

75) I chlorobenzene-d5 ----------ISTD----------

76) toluene-d8 (s)
1.266 1.253 1.246 1.232 1.243 1.252 1.245 1.256 1.256 1.244 1.249 0.75

77) toluene
0.984 0.992 0.981 1.002 0.997 1.080 1.004 0.993 0.901 1.015 0.995 4.37

78) ethyl methacrylate
0.612 0.629 0.631 0.636 0.617 0.603 0.628 0.627 0.571 0.613 0.617 3.09

79) trans-1,3-dichloropropene
0.645 0.644 0.652 0.658 0.646 0.674 0.656 0.650 0.550 0.601 0.638 5.66

80) 1,1,2-trichloroethane
0.327 0.333 0.332 0.335 0.330 0.348 0.335 0.326 0.313 0.355 0.334 3.53

81) 2-hexanone
0.223 0.216 0.215 0.213 0.198 0.218 0.191 0.222 0.204 0.231 0.213 5.79

82) tetrachloroethene
0.367 0.359 0.357 0.377 0.370 0.361 0.373 0.367 0.327 0.325 0.358 5.02

83) 1,3-dichloropropane

```
      0.640 0.632 0.634 0.640 0.622 0.678 0.629 0.648 0.589 0.556  0.627    5.31
 84)  butyl acetate
      0.366 0.361 0.356 0.356 0.340 0.391 0.337 0.375 0.369        0.361    4.60
 85)  dibromochloromethane
      0.451 0.441 0.464 0.476 0.474 0.463 0.492 0.457 0.398        0.457    5.83
 86)  1,2-dibromoethane
      0.427 0.423 0.441 0.445 0.440 0.444 0.454 0.431 0.369 0.394  0.427    6.14
 87)  3,3-dimethyl-1-Butanol
      0.065 0.065 0.066 0.066 0.058 0.072 0.053 0.070 0.074        0.065    9.78
 88)  n-butyl ether
      1.713 1.692 1.748 1.775 1.758 1.814 1.770 1.745 1.615 1.821  1.745    3.47
 89)  chlorobenzene
      1.119 1.148 1.143 1.169 1.152 1.235 1.164 1.159 1.111 1.253  1.165    3.92
 90)  1,1,1,2-tetrachloroethane
      0.422 0.429 0.422 0.431 0.430 0.439 0.440 0.422 0.360 0.359  0.415    7.25
 91)  ethylbenzene
      1.925 1.913 1.903 1.959 1.922 2.076 1.924 1.959 1.827 2.055  1.946    3.75
 92)  m,p-xylene
      0.739 0.743 0.738 0.765 0.753 0.813 0.763 0.753 0.690 0.746  0.750    4.07
 93)  o-xylene
      0.733 0.720 0.743 0.761 0.755 0.781 0.768 0.750 0.720 0.788  0.752    3.12
 94)  styrene
      1.267 1.239 1.289 1.311 1.293 1.350 1.312 1.283 1.153 1.296  1.279    4.15
 95)  butyl acrylate
      0.893 0.893 0.926 0.940 0.918 0.986 0.932 0.912 0.868 0.923  0.919    3.49
 96)  bromoform
      0.350 0.349 0.371 0.387 0.387 0.373 0.403 0.354 0.327        0.367    6.48
 97)  isopropylbenzene
      1.939 1.919 1.922 1.999 1.976 2.055 1.999 1.966 1.827 2.154  1.976    4.43
 98)  cis-1,4-dichloro-2-butene
      0.191 0.174 0.201 0.202 0.197 0.185 0.206 0.193 0.131        0.187   12.27
 99)  cyclohexanone
                                                                   0.000   -1.00

100) I   1,4-dichlorobenzene-d ----------------ISTD---------------------
101)  4-bromofluorobenzene (s)
      0.868 0.862 0.872 0.875 0.879 0.876 0.897 0.866 0.873 0.862  0.873    1.18
102)  bromobenzene
      0.965 0.964 0.991 0.997 0.990 1.056 1.015 0.983 0.935 0.880  0.978    4.81
103)  1,1,2,2-tetrachloroethane
      1.044 1.054 1.076 1.072 1.053 1.179 1.074 1.065 1.014 1.067  1.070    3.98
104)  trans-1,4-dichloro-2-butene
      0.298 0.286 0.312 0.318 0.309 0.293 0.317 0.298 0.255        0.298    6.55
105)  1,2,3-trichloropropane
      0.278 0.276 0.280 0.282 0.273 0.283 0.278 0.275 0.248        0.275    3.80
106)  n-propylbenzene
      4.136 4.179 4.101 4.218 4.181 4.340 4.186 4.148 3.937 4.885  4.231    5.93
107)  2-chlorotoluene
      0.867 0.900 0.858 0.889 0.878 0.931 0.899 0.865 0.763 0.936  0.879    5.52
108)  4-chlorotoluene
      2.530 2.552 2.556 2.606 2.579 2.776 2.646 2.580 2.416 2.948  2.619    5.61
109)  1,3,5-trimethylbenzene
      2.889 2.922 2.905 3.002 2.992 3.175 3.018 2.950 2.738 3.337  2.993    5.49
110)  tert-butylbenzene
      2.559 2.556 2.520 2.652 2.649 2.715 2.675 2.583 2.407 3.133  2.645    7.29
111)  1,2,4-trimethylbenzene
      2.972 2.894 3.004 3.059 3.016 3.230 3.061 3.029 2.848 3.413  3.053    5.34
112)  sec-butylbenzene
      3.761 3.754 3.722 3.940 3.885 3.987 3.919 3.793 3.578 4.403  3.874    5.73
113)  1,3-dichlorobenzene
```

Initial Calibration Summary

Job Number: [redacted] **Sample:** VU9728-ICC9728
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** U212483.D
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

```
       1.850 1.832 1.850 1.894 1.867 1.969 1.893 1.863 1.740 2.027  1.878    4.14
114)  p-isopropyltoluene
       3.277 3.318 3.299 3.440 3.399 3.496 3.398 3.344 3.052 4.060  3.408    7.59
115)  1,4-dichlorobenzene
       1.822 1.848 1.842 1.888 1.866 2.018 1.894 1.834 1.794 2.036  1.884    4.30
116)  benzyl chloride
       2.072 2.128 2.024 2.066 1.975 2.234 1.927 2.147 2.310        2.098    5.80
117)  1,2-dichlorobenzene
       1.746 1.784 1.770 1.803 1.792 1.930 1.778 1.757 1.678 1.861  1.790    3.77
118)  n-butylbenzene
       1.635 1.621 1.648 1.742 1.731 1.736 1.723 1.656 1.564 1.863  1.692    4.98
119)  1,2-dibromo-3-chloropropane
       0.262 0.253 0.277 0.279 0.267 0.266 0.269 0.268 0.173        0.257   12.65
120)  1,3,5-trichlorobenzene
       1.420 1.412 1.417 1.456 1.445 1.486 1.463 1.425 1.306 1.766  1.460    8.08
121)  2-ethylhexyl acrylate
                   0.586 0.673 0.727       0.751 0.499              0.647   16.14
122)  1,2,4-trichlorobenzene
       1.244 1.214 1.293 1.342 1.328 1.273 1.346 1.273 1.198 1.419  1.293    5.20
123)  hexachlorobutadiene
       0.720 0.688 0.682 0.731 0.710 0.762 0.731 0.680 0.656 0.808  0.717    6.24
124)  naphthalene
       2.878 2.770 2.973 3.048 2.949 2.956 2.903 2.934 2.688 3.245  2.935    5.12
125)  1,2,3-trichlorobenzene
       1.021 1.021 1.099 1.130 1.127 1.068 1.127 1.083 0.959 1.167  1.080    5.91
126)  hexachloroethane
       0.599 0.601 0.633 0.669 0.672 0.657 0.685 0.632 0.501        0.628    9.01
127)  2-methylnaphthalene  ** This compound does not meet initial calibration criteria
       0.606 0.565 0.776 0.813 0.779             0.732              0.712   14.33

128) I   pentafluorobenzene(a) ----------------ISTD---------------------
129)  Pentane
       1.147 0.940 1.147 0.982 0.976 0.999 0.958 1.132 0.882        1.018    9.68
 ---------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           MU9728.M          Mon Apr 03 10:59:00 2017
```

Initial Calibration Verification

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9728-ICV9728
Lab FileID: U212488.D

Evaluate Continuing Calibration Report

Data File : [redacted]U212488.D Vial: 16
Acq On : 3 Mar 2017 7:02 pm Operator: [redacted]
Sample : icv9728-50 Inst : MSU
Misc : ms13029,vu9728,w,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : [redacted]MU9728.M (RTE Integrator)
Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
Last Update : Mon Mar 06 15:00:53 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	100	0.01	7.68
2	M	tertiary butyl alcohol	1.365	1.395	-2.2	100	0.00	7.78
3		Ethanol		----------NA----------				
4	m	1,4-dioxane	0.105	0.102	2.9	94	0.00	11.50
5	I	pentafluorobenzene	1.000	1.000	0.0	101	0.00	9.83
6	M	chlorotrifluoroethene		----------NA----------				
7	M	chlorodifluoromethane	0.417	0.411	1.4	91	0.00	4.24
8	M	dichlorodifluoromethane	0.643	0.607	5.6	85	0.00	4.23
9	M	chloromethane	0.838	0.734	12.4	86	0.00	4.56
10	M	vinyl chloride	0.790	0.708	10.4	83	0.00	4.84
11	M	bromomethane	0.460	0.418	9.1	93	0.00	5.49
12	M	chloroethane	0.359	0.333	7.2	86	0.00	5.66
13	M	trichlorofluoromethane	0.709	0.745	-5.1	93	0.00	6.16
14		vinyl bromide	0.727	0.519	28.6	68	0.00	6.03
15	M	ethyl ether	0.295	0.326	-10.5	103	0.00	6.53
16		2-chloropropane	0.819	0.857	-4.6	102	0.00	6.75
17	M	acrolein	0.116	0.133	-14.7	113	0.00	6.81
18		freon 113	0.390	0.501	-28.5	121	0.00	6.94
19	M	1,1-dichloroethene	0.498	0.501	-0.6	98	0.00	6.98
20	M	acetone	0.062	0.061	1.6	101	0.00	7.04
21	M	acetonitrile	0.092	0.179	-94.6#	191	0.00	7.50
22	M	iodomethane	0.918	0.964	-5.0	99	0.00	7.27
23	M	carbon disulfide	1.597	1.675	-4.9	104	0.00	7.42
24	M	methylene chloride	0.533	0.546	-2.4	100	0.00	7.70
25	M	methyl acetate	0.548	0.530	3.3	98	0.00	7.48
26	M	methyl tert butyl ether	1.592	1.687	-5.9	103	0.00	7.99
27	M	trans-1,2-dichloroethene	0.511	0.516	-1.0	99	0.00	8.05
28		hexane	0.737	0.551	25.2	72	0.00	8.32
29	M	di-isopropyl ether	1.862	1.898	-1.9	100	0.00	8.56
30	M	ethyl tert-butyl ether	1.719	1.813	-5.5	103	0.00	9.02
31	M	2-butanone	0.075	0.082	-9.3	103	0.00	9.30
32	M	1,1-dichloroethane	0.958	0.989	-3.2	100	0.00	8.61
33	M	chloroprene	0.810	0.886	-9.4	104	0.00	8.71
34	M	acrylonitrile	0.236	0.283	-19.9	109	0.00	8.02
35	M	vinyl acetate	0.109	0.120	-10.1	102	0.00	8.58
36	M	ethyl acetate	0.106	0.112	-5.7	101	0.00	9.30
37	M	2,2-dichloropropane	0.711	0.694	2.4	98	0.00	9.34
38	M	cis-1,2-dichloroethene	0.561	0.583	-3.9	103	0.00	9.34
39	M	methyl acrylate	0.095	0.107	-12.6	104	0.00	9.39
40	M	propionitrile	0.097	0.103	-6.2	102	0.00	9.42
41	M	bromochloromethane	0.277	0.292	-5.4	101	0.00	9.65

Initial Calibration Verification

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9728-ICV9728
Lab FileID: U212488.D

42	M	tetrahydrofuran	0.275	0.270	1.8	103	0.00	9.68
43	M	chloroform	0.937	0.930	0.7	103	0.00	9.70
44		tert-butyl Formate	0.550	0.444	19.3	77	0.00	9.73
45	M	iso-butyl alcohol	0.047	0.042	10.6	94	0.00	10.13
46	S	dibromofluoromethane (s)	0.419	0.422	-0.7	101	0.00	9.90
47	M	methacrylonitrile	0.269	0.276	-2.6	101	0.00	9.59
48	M	1,1,1-trichloroethane	0.729	0.775	-6.3	101	0.00	9.95
49		cyclohexane	0.661	0.752	-13.8	105	0.00	10.01
50		1,1-dichloropropene	0.716	0.753	-5.2	100	0.00	10.12
51		carbon tetrachloride	0.674	0.727	-7.9	101	0.00	10.14
52	M	tert amyl alcohol	0.051	0.051	0.0	96	0.00	10.26
53		isopropyl acetate	0.135	0.139	-3.0	99	0.00	10.28
54	I	1,4-difluorobenzene	1.000	1.000	0.0	101	0.00	10.75
55	S	1,2-dichloroethane-d4 (s)	0.347	0.342	1.4	101	0.00	10.32
56		iso-octane	1.302	1.370	-5.2	101	0.00	10.37
57	M	n-butyl alcohol	0.019	0.018	5.3	94	0.00	10.89
58	M	benzene	1.488	1.464	1.6	100	0.00	10.38
59		tert-amyl methyl ether	1.178	1.210	-2.7	105	0.00	10.40
60	M	heptane	0.282	0.305	-8.2	103	0.00	10.53
61	M	1,2-dichloroethane	0.502	0.515	-2.6	103	0.00	10.41
62	M	ethyl acrylate	0.572	0.609	-6.5	105	0.00	11.08
63	M	trichloroethene	0.377	0.392	-4.0	102	0.00	11.09
64	M	methylcyclohexane	0.590	0.623	-5.6	99	0.00	11.30
65	M	2-nitropropane	0.009	0.010	-11.1	102	0.00	11.89
66	M	2-chloroethyl vinyl ether	0.267	0.289	-8.2	106	0.00	11.90
67	M	methyl methacrylate	0.118	0.124	-5.1	102	0.00	11.35
68	M	1,2-dichloropropane	0.401	0.413	-3.0	104	0.00	11.36
69	M	dibromomethane	0.240	0.254	-5.8	103	0.00	11.53
70	M	bromodichloromethane	0.510	0.527	-3.3	102	0.00	11.66
71		epichlorohydrin	0.055	0.053	3.6	99	0.00	12.04
72	M	cis-1,3-dichloropropene	0.659	0.683	-3.6	101	0.00	12.13
73	M	4-methyl-2-pentanone	0.192	0.195	-1.6	104	0.00	12.22
74	M	3-methyl-1-butanol	0.032	0.031	3.1	98	0.00	12.24
75	I	chlorobenzene-d5	1.000	1.000	0.0	100	0.00	14.07
76	S	toluene-d8 (s)	1.249	1.248	0.1	101	0.00	12.43
77		toluene	0.995	1.014	-1.9	101	0.00	12.51
78		ethyl methacrylate	0.617	0.636	-3.1	100	0.00	12.70
79		trans-1,3-dichloropropene	0.638	0.673	-5.5	102	0.00	12.72
80		1,1,2-trichloroethane	0.334	0.337	-0.9	101	0.00	12.95
81		2-hexanone	0.213	0.219	-2.8	103	0.00	13.12
82	M	tetrachloroethene	0.358	0.381	-6.4	101	0.00	13.13
83	M	1,3-dichloropropane	0.627	0.654	-4.3	102	0.00	13.15
84	M	butyl acetate	0.361	0.359	0.6	101	0.00	13.20
85	M	dibromochloromethane	0.457	0.477	-4.4	100	0.00	13.44
86	M	1,2-dibromoethane	0.427	0.442	-3.5	99	0.00	13.61
87		3,3-dimethyl-1-Butanol	0.065	0.065	0.0	98	0.00	13.31
88		n-butyl ether	1.745	1.862	-6.7	105	0.00	13.98
89	M	chlorobenzene	1.165	1.186	-1.8	101	0.00	14.10
90	M	1,1,1,2-tetrachloroethane	0.415	0.439	-5.8	102	0.00	14.17
91	M	ethylbenzene	1.946	1.970	-1.2	100	0.00	14.15
92	M	m,p-xylene	0.750	0.769	-2.5	100	0.00	14.27
93	M	o-xylene	0.752	0.760	-1.1	100	0.00	14.73
94	M	styrene	1.279	1.326	-3.7	101	0.00	14.75
95		butyl acrylate	0.919	1.015	-10.4	108	0.00	14.53
96	M	bromoform	0.367	0.397	-8.2	103	0.00	15.05
97		isopropylbenzene	1.976	1.990	-0.7	100	0.00	15.11
98		cis-1,4-dichloro-2-butene	0.187	0.203	-8.6	101	0.00	15.20
99		cyclohexanone		----------NA----------				

Initial Calibration Verification

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9728-ICV9728
Lab FileID: U212488.D

100	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	101	0.00	16.64
101	S	4-bromofluorobenzene (s)	0.873	0.880	-0.8	101	0.00	15.34
102	M	bromobenzene	0.978	1.000	-2.2	101	0.00	15.57
103	M	1,1,2,2-tetrachloroethane	1.070	1.083	-1.2	102	0.00	15.46
104	M	trans-1,4-dichloro-2-bute	0.298	0.326	-9.4	103	0.00	15.50
105	M	1,2,3-trichloropropane	0.275	0.288	-4.7	103	0.00	15.55
106	M	n-propylbenzene	4.231	4.202	0.7	100	0.00	15.56
107	M	2-chlorotoluene	0.879	0.892	-1.5	101	0.00	15.73
108	M	4-chlorotoluene	2.619	2.618	0.0	101	0.00	15.84
109	M	1,3,5-trimethylbenzene	2.993	2.991	0.1	100	0.00	15.72
110	M	tert-butylbenzene	2.645	2.655	-0.4	101	0.00	16.12
111	M	1,2,4-trimethylbenzene	3.053	3.097	-1.4	102	0.00	16.17
112	M	sec-butylbenzene	3.874	3.892	-0.5	99	0.00	16.36
113	M	1,3-dichlorobenzene	1.878	1.890	-0.6	100	0.00	16.58
114	M	p-isopropyltoluene	3.408	3.385	0.7	99	0.00	16.49
115	M	1,4-dichlorobenzene	1.884	1.908	-1.3	102	0.00	16.67
116	M	benzyl chloride	2.098	1.771	15.6	86	0.00	16.80
117	M	1,2-dichlorobenzene	1.790	1.826	-2.0	102	0.00	17.11
118	M	n-butylbenzene	1.692	1.709	-1.0	99	0.00	16.95
119	M	1,2-dibromo-3-chloropropa	0.257	0.280	-8.9	101	0.00	17.96
120		1,3,5-trichlorobenzene	1.460	2.421	-65.8#	167	0.00	18.16
121		2-ethylhexyl acrylate	0.647	0.749	-15.8	112	0.00	18.80
122	M	1,2,4-trichlorobenzene	1.293	1.327	-2.6	99	0.00	18.87
123	M	hexachlorobutadiene	0.717	0.706	1.5	97	0.00	18.99
124	M	naphthalene	2.935	3.015	-2.7	99	0.00	19.20
125	M	1,2,3-trichlorobenzene	1.080	1.142	-5.7	102	0.00	19.47
126	M	hexachloroethane	0.628	0.679	-8.1	102	0.00	17.39
127		2-methylnaphthalene		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
U212483.D MU9728.M Mon Mar 06 15:04:59 2017

6.8.2

6

Initial Calibration Verification

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9765-ICV9728
Lab FileID: U213371.D

Evaluate Continuing Calibration Report

Data File : [redacted]U213371.D Vial: 14
Acq On : 1 Apr 2017 3:56 pm Operator: [redacted]
Sample : icv9728-50 Inst : MSU
Misc : ms14105,vu9765,w,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : [redacted]MU9728.M (RTE Integrator)
Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
Last Update : Mon Apr 03 10:07:26 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	89	0.02	7.68
2	M	tertiary butyl alcohol		----------NA----------				
3		Ethanol		----------NA----------				
4	m	1,4-dioxane		----------NA----------				
5	I	pentafluorobenzene	1.000	1.000	0.0	85	0.00	9.83
6	M	chlorotrifluoroethene		----------NA----------				
7	M	chlorodifluoromethane		----------NA----------				
8	M	dichlorodifluoromethane		----------NA----------				
9	M	chloromethane		----------NA----------				
10	M	vinyl chloride		----------NA----------				
11	M	bromomethane		----------NA----------				
12	M	chloroethane		----------NA----------				
13	M	trichlorofluoromethane		----------NA----------				
14		vinyl bromide		----------NA----------				
15	M	ethyl ether		----------NA----------				
16		2-chloropropane		----------NA----------				
17	M	acrolein		----------NA----------				
18		freon 113		----------NA----------				
19	M	1,1-dichloroethene		----------NA----------				
20	M	acetone		----------NA----------				
21	M	acetonitrile		----------NA----------				
22	M	iodomethane		----------NA----------				
23	M	carbon disulfide		----------NA----------				
24	M	methylene chloride		----------NA----------				
25	M	methyl acetate		----------NA----------				
26	M	methyl tert butyl ether		----------NA----------				
27	M	trans-1,2-dichloroethene		----------NA----------				
28		hexane		----------NA----------				
29	M	di-isopropyl ether		----------NA----------				
30	M	ethyl tert-butyl ether		----------NA----------				
31	M	2-butanone		----------NA----------				
32	M	1,1-dichloroethane		----------NA----------				
33	M	chloroprene		----------NA----------				
34	M	acrylonitrile		----------NA----------				
35	M	vinyl acetate		----------NA----------				
36	M	ethyl acetate		----------NA----------				
37	M	2,2-dichloropropane		----------NA----------				
38	M	cis-1,2-dichloroethene		----------NA----------				
39	M	methyl acrylate		----------NA----------				
40	M	propionitrile		----------NA----------				
41	M	bromochloromethane		----------NA----------				

Initial Calibration Verification

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9765-ICV9728
Lab FileID: U213371.D

42	M	tetrahydrofuran			----------NA----------				
43	M	chloroform			----------NA----------				
44		tert-butyl Formate			----------NA----------				
45	M	iso-butyl alcohol			----------NA----------				
46	S	dibromofluoromethane (s)	0.419	0.449	-7.2	91	0.00	9.90	
47	M	methacrylonitrile			----------NA----------				
48	M	1,1,1-trichloroethane			----------NA----------				
49		cyclohexane			----------NA----------				
50		1,1-dichloropropene			----------NA----------				
51		carbon tetrachloride			----------NA----------				
52	M	tert amyl alcohol			----------NA----------				
53		isopropyl acetate			----------NA----------				
54	I	1,4-difluorobenzene	1.000	1.000	0.0	88	0.00	10.75	
55	S	1,2-dichloroethane-d4 (s)	0.347	0.343	1.2	89	0.00	10.32	
56		iso-octane			----------NA----------				
57	M	n-butyl alcohol			----------NA----------				
58	M	benzene			----------NA----------				
59		tert-amyl methyl ether			----------NA----------				
60	M	heptane			----------NA----------				
61	M	1,2-dichloroethane			----------NA----------				
62	M	ethyl acrylate			----------NA----------				
63	M	trichloroethene			----------NA----------				
64	M	methylcyclohexane			----------NA----------				
65	M	2-nitropropane			----------NA----------				
66	M	2-chloroethyl vinyl ether			----------NA----------				
67	M	methyl methacrylate			----------NA----------				
68	M	1,2-dichloropropane			----------NA----------				
69	M	dibromomethane			----------NA----------				
70	M	bromodichloromethane			----------NA----------				
71		epichlorohydrin			----------NA----------				
72	M	cis-1,3-dichloropropene			----------NA----------				
73	M	4-methyl-2-pentanone			----------NA----------				
74	M	3-methyl-1-butanol			----------NA----------				
75	I	chlorobenzene-d5	1.000	1.000	0.0	89	0.00	14.07	
76	S	toluene-d8 (s)	1.249	1.257	-0.6	91	0.00	12.43	
77		toluene			----------NA----------				
78		ethyl methacrylate			----------NA----------				
79		trans-1,3-dichloropropene			----------NA----------				
80		1,1,2-trichloroethane			----------NA----------				
81		2-hexanone			----------NA----------				
82	M	tetrachloroethene			----------NA----------				
83	M	1,3-dichloropropane			----------NA----------				
84	M	butyl acetate			----------NA----------				
85	M	dibromochloromethane			----------NA----------				
86	M	1,2-dibromoethane			----------NA----------				
87		3,3-dimethyl-1-Butanol			----------NA----------				
88		n-butyl ether			----------NA----------				
89	M	chlorobenzene			----------NA----------				
90	M	1,1,1,2-tetrachloroethane			----------NA----------				
91	M	ethylbenzene			----------NA----------				
92	M	m,p-xylene			----------NA----------				
93	M	o-xylene			----------NA----------				
94	M	styrene			----------NA----------				
95		butyl acrylate			----------NA----------				
96	M	bromoform			----------NA----------				
97		isopropylbenzene			----------NA----------				
98		cis-1,4-dichloro-2-butene			----------NA----------				
99		cyclohexanone			----------NA----------				

Initial Calibration Verification

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9765-ICV9728
Lab FileID: U213371.D

100	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	85	0.00	16.64
101	S	4-bromofluorobenzene (s)	0.873	0.890	-1.9	87	0.00	15.35
102	M	bromobenzene	----------NA----------					
103	M	1,1,2,2-tetrachloroethane	----------NA----------					
104	M	trans-1,4-dichloro-2-bute	----------NA----------					
105	M	1,2,3-trichloropropane	----------NA----------					
106	M	n-propylbenzene	----------NA----------					
107	M	2-chlorotoluene	----------NA----------					
108	M	4-chlorotoluene	----------NA----------					
109	M	1,3,5-trimethylbenzene	----------NA----------					
110	M	tert-butylbenzene	----------NA----------					
111	M	1,2,4-trimethylbenzene	----------NA----------					
112	M	sec-butylbenzene	----------NA----------					
113	M	1,3-dichlorobenzene	----------NA----------					
114	M	p-isopropyltoluene	----------NA----------					
115	M	1,4-dichlorobenzene	----------NA----------					
116	M	benzyl chloride	----------NA----------					
117	M	1,2-dichlorobenzene	----------NA----------					
118	M	n-butylbenzene	----------NA----------					
119	M	1,2-dibromo-3-chloropropa	----------NA----------					
120		1,3,5-trichlorobenzene	----------NA----------					
121		2-ethylhexyl acrylate	----------NA----------					
122	M	1,2,4-trichlorobenzene	----------NA----------					
123	M	hexachlorobutadiene	----------NA----------					
124	M	naphthalene	----------NA----------					
125	M	1,2,3-trichlorobenzene	----------NA----------					
126	M	hexachloroethane	----------NA----------					
127		2-methylnaphthalene	----------NA----------					
128	I	pentafluorobenzene(a)	1.000	1.000	0.0	100	0.00	9.83
129	M	Pentane	1.018	1.301	-27.8	132	0.00	6.25

(#) = Out of Range SPCC's out = 0 CCC's out = 0
U212483.D MU9728.M Mon Apr 03 10:11:30 2017

Continuing Calibration Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9776-CC9728
Lab FileID: U213688.D

Evaluate Continuing Calibration Report

Data File : [redacted]U\vu9775-9776\U213688.D Vial: 3
Acq On : 12 Apr 2017 8:01 am Operator: [redacted]
Sample : CC9728-20 Inst : MSU
Misc : ms14578,vu9776,w,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : [redacted]MU9728.M (RTE Integrator)
Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
Last Update : Mon Apr 03 10:07:26 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	105	-0.04	7.62
2	M	tertiary butyl alcohol	1.365	1.223	10.4	95	-0.05	7.73
3		Ethanol		----------NA----------				
4	m	1,4-dioxane	0.105	0.094	10.5	93	-0.03	11.47
5	I	pentafluorobenzene	1.000	1.000	0.0	105	0.00	9.83
6	M	chlorotrifluoroethene		----------NA----------				
7	M	chlorodifluoromethane	0.417	0.604	-44.8#	158	0.00	4.25
8	M	dichlorodifluoromethane	0.643	0.495	23.0#	79	0.00	4.22
9	M	chloromethane	0.838	0.797	4.9	100	0.00	4.58
10	M	vinyl chloride	0.790	0.761	3.7	100	0.02	4.86
11	M	bromomethane	0.460	0.487	-5.9	106	0.00	5.50
12	M	chloroethane	0.359	0.405	-12.8	109	0.00	5.66
13	M	trichlorofluoromethane	0.709	0.700	1.3	99	0.00	6.16
14		vinyl bromide	0.727	0.738	-1.5	105	0.00	6.04
15	M	ethyl ether	0.295	0.328	-11.2	110	0.00	6.53
16		2-chloropropane	0.819	0.872	-6.5	120	0.00	6.75
17	M	acrolein	0.116	0.131	-12.9	115	0.00	6.81
18		freon 113	0.390	0.364	6.7	101	0.00	6.94
19	M	1,1-dichloroethene	0.498	0.506	-1.6	110	0.00	6.99
20	M	acetone	0.062	0.062	0.0	110	-0.02	7.02
21	M	acetonitrile	0.092	0.087	5.4	99	-0.03	7.47
22	M	iodomethane	0.918	0.952	-3.7	107	0.00	7.26
23	M	carbon disulfide	1.597	1.657	-3.8	114	0.01	7.43
24	M	methylene chloride	0.533	0.551	-3.4	107	0.00	7.69
25	M	methyl acetate	0.548	0.527	3.8	104	0.00	7.47
26	M	methyl tert butyl ether	1.592	1.625	-2.1	105	0.00	7.99
27	M	trans-1,2-dichloroethene	0.511	0.541	-5.9	112	0.00	8.05
28		hexane	0.737	0.707	4.1	105	0.00	8.32
29	M	di-isopropyl ether	1.862	1.811	2.7	101	0.00	8.56
30	M	ethyl tert-butyl ether	1.719	1.713	0.3	104	0.00	9.02
31	M	2-butanone	0.075	0.086	-14.7	115	0.00	9.29
32	M	1,1-dichloroethane	0.958	1.010	-5.4	108	0.00	8.61
33	M	chloroprene	0.810	0.778	4.0	100	0.00	8.71
34	M	acrylonitrile	0.236	0.268	-13.6	108	0.00	8.01
35	M	vinyl acetate	0.109	0.115	-5.5	105	0.00	8.58
36	M	ethyl acetate	0.106	0.114	-7.5	106	-0.01	9.29
37	M	2,2-dichloropropane	0.711	0.727	-2.3	111	0.00	9.33
38	M	cis-1,2-dichloroethene	0.561	0.591	-5.3	109	0.00	9.33
39	M	methyl acrylate	0.095	0.104	-9.5	108	0.00	9.39
40	M	propionitrile	0.097	0.115	-18.6	118	0.00	9.41
41	M	bromochloromethane	0.277	0.297	-7.2	108	0.00	9.65

Continuing Calibration Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9776-CC9728
Lab FileID: U213688.D

42	M	tetrahydrofuran	0.275	0.289	-5.1	112	0.00	9.68
43	M	chloroform	0.937	0.937	0.0	109	0.00	9.69
44		tert-butyl Formate	0.550	0.551	-0.2	103	0.00	9.72
45	M	iso-butyl alcohol	0.047	0.040	14.9	94	0.00	10.12
46	S	dibromofluoromethane (s)	0.419	0.445	-6.2	110	0.00	9.90
47	M	methacrylonitrile	0.269	0.286	-6.3	108	0.00	9.58
48	M	1,1,1-trichloroethane	0.729	0.736	-1.0	107	0.00	9.94
49		cyclohexane	0.661	0.734	-11.0	119	0.00	10.02
50		1,1-dichloropropene	0.716	0.745	-4.1	110	0.00	10.12
51		carbon tetrachloride	0.674	0.695	-3.1	108	0.00	10.14
52	M	tert amyl alcohol	0.051	0.053	-3.9	104	-0.01	10.24
53		isopropyl acetate	0.135	0.138	-2.2	105	0.00	10.28
54	I	1,4-difluorobenzene	1.000	1.000	0.0	111	0.00	10.75
55	S	1,2-dichloroethane-d4 (s)	0.347	0.340	2.0	108	0.00	10.32
56		iso-octane	1.302	1.257	3.5	111	0.00	10.36
57	M	n-butyl alcohol	0.019	0.017	10.5	95	-0.01	10.87
58	M	benzene	1.488	1.467	1.4	111	0.00	10.38
59		tert-amyl methyl ether	1.178	1.135	3.7	108	0.00	10.40
60	M	heptane	0.282	0.263	6.7	107	0.00	10.53
61	M	1,2-dichloroethane	0.502	0.479	4.6	104	0.00	10.41
62	M	ethyl acrylate	0.572	0.636	-11.2	119	0.00	11.08
63	M	trichloroethene	0.377	0.374	0.8	110	0.00	11.09
64	M	methylcyclohexane	0.590	0.582	1.4	110	0.00	11.30
65	M	2-nitropropane	0.009	0.008	11.1	106	0.00	11.88
66	M	2-chloroethyl vinyl ether	0.267	0.255	4.5	107	0.00	11.89
67	M	methyl methacrylate	0.118	0.118	0.0	107	0.00	11.35
68	M	1,2-dichloropropane	0.401	0.400	0.2	110	0.00	11.36
69	M	dibromomethane	0.240	0.250	-4.2	110	0.00	11.53
70	M	bromodichloromethane	0.510	0.507	0.6	109	0.00	11.66
71		epichlorohydrin	0.055	0.050	9.1	102	0.00	12.03
72	M	cis-1,3-dichloropropene	0.659	0.658	0.2	108	0.00	12.13
73	M	4-methyl-2-pentanone	0.192	0.201	-4.7	114	0.00	12.22
74	M	3-methyl-1-butanol	0.032	0.026	18.8	89	0.00	12.24
75	I	chlorobenzene-d5	1.000	1.000	0.0	110	0.00	14.07
76	S	toluene-d8 (s)	1.249	1.240	0.7	110	0.00	12.43
77		toluene	0.995	0.963	3.2	108	0.00	12.50
78		ethyl methacrylate	0.617	0.613	0.6	107	0.00	12.69
79		trans-1,3-dichloropropene	0.638	0.641	-0.5	108	0.00	12.72
80		1,1,2-trichloroethane	0.334	0.333	0.3	110	0.00	12.95
81		2-hexanone	0.213	0.225	-5.6	115	0.00	13.12
82	M	tetrachloroethene	0.358	0.358	0.0	111	0.00	13.13
83	M	1,3-dichloropropane	0.627	0.634	-1.1	110	0.00	13.15
84	M	butyl acetate	0.361	0.335	7.2	104	0.00	13.19
85	M	dibromochloromethane	0.457	0.455	0.4	108	0.00	13.44
86	M	1,2-dibromoethane	0.427	0.433	-1.4	108	0.00	13.60
87		3,3-dimethyl-1-Butanol	0.065	0.047	27.7#	78	0.00	13.32
88		n-butyl ether	1.745	1.896	-8.7	120	0.00	13.98
89	M	chlorobenzene	1.165	1.095	6.0	106	0.00	14.10
90	M	1,1,1,2-tetrachloroethane	0.415	0.409	1.4	107	0.00	14.17
91	M	ethylbenzene	1.946	1.860	4.4	108	0.00	14.15
92	M	m,p-xylene	0.750	0.709	5.5	106	0.00	14.26
93	M	o-xylene	0.752	0.712	5.3	106	0.00	14.73
94	M	styrene	1.279	1.236	3.4	106	0.00	14.75
95		butyl acrylate	0.919	1.003	-9.1	119	0.00	14.53
96	M	bromoform	0.367	0.369	-0.5	110	0.00	15.05
97		isopropylbenzene	1.976	1.856	6.1	106	0.00	15.11
98		cis-1,4-dichloro-2-butene	0.187	0.217	-16.0	119	0.00	15.20
99		cyclohexanone		----------NA----------				

Continuing Calibration Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9776-CC9728
Lab FileID: U213688.D

100	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	106	0.00	16.64
101	S	4-bromofluorobenzene (s)	0.873	0.883	-1.1	107	0.00	15.34
102	M	bromobenzene	0.978	0.972	0.6	104	0.00	15.56
103	M	1,1,2,2-tetrachloroethane	1.070	1.117	-4.4	110	0.00	15.46
104	M	trans-1,4-dichloro-2-bute	0.298	0.294	1.3	100	0.00	15.50
105	M	1,2,3-trichloropropane	0.275	0.284	-3.3	108	0.00	15.54
106	M	n-propylbenzene	4.231	4.173	1.4	108	0.00	15.56
107	M	2-chlorotoluene	0.879	0.867	1.4	107	0.00	15.73
108	M	4-chlorotoluene	2.619	2.535	3.2	105	0.00	15.84
109	M	1,3,5-trimethylbenzene	2.993	2.889	3.5	106	0.00	15.72
110	M	tert-butylbenzene	2.645	2.525	4.5	106	0.00	16.12
111	M	1,2,4-trimethylbenzene	3.053	2.925	4.2	103	0.00	16.17
112	M	sec-butylbenzene	3.874	3.783	2.3	108	0.00	16.36
113	M	1,3-dichlorobenzene	1.878	1.823	2.9	105	0.00	16.58
114	M	p-isopropyltoluene	3.408	3.245	4.8	104	0.00	16.48
115	M	1,4-dichlorobenzene	1.884	1.804	4.2	104	0.00	16.67
116	M	benzyl chloride	2.098	2.129	-1.5	112	0.00	16.80
117	M	1,2-dichlorobenzene	1.790	1.720	3.9	103	0.00	17.11
118	M	n-butylbenzene	1.692	1.671	1.2	108	0.00	16.94
119	M	1,2-dibromo-3-chloropropa	0.257	0.250	2.7	96	0.00	17.96
120		1,3,5-trichlorobenzene	1.460	1.471	-0.8	110	0.00	18.15
121		2-ethylhexyl acrylate	0.647	0.083	87.2#	15#	0.00	18.80
122	M	1,2,4-trichlorobenzene	1.293	1.156	10.6	95	0.00	18.87
123	M	hexachlorobutadiene	0.717	0.678	5.4	105	0.00	18.99
124	M	naphthalene	2.935	2.526	13.9	90	0.00	19.20
125	M	1,2,3-trichlorobenzene	1.080	0.925	14.4	89	0.00	19.47
126	M	hexachloroethane	0.628	0.608	3.2	102	0.00	17.39
127		2-methylnaphthalene	0.712	0.332	53.4#	45#	0.00	20.53
128	I	pentafluorobenzene(a)	1.000	1.000	0.0	124	0.00	9.83
129	M	Pentane		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
U212482.D MU9728.M Wed Apr 12 16:10:46 2017

Continuing Calibration Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9776-CC9728
Lab FileID: U213689.D

Sensitivity check for dichlorodifluoromethane

Data File : [redacted]U\vu9775-9776\U213689.D Vial: 4
Acq On : 12 Apr 2017 8:48 am Operator: [redacted]
Sample : CC9728-1 Inst : MSU
Misc : ms14578,vu9776,w,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : [redacted]MU9728.M (RTE Integrator)
Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
Last Update : Mon Apr 03 10:07:26 2017
Response via : Multiple Level Calibration

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	98	-0.03	7.63
2	M	tertiary butyl alcohol		----------	NA	----------		
3		Ethanol		----------	NA	----------		
4	m	1,4-dioxane		----------	NA	----------		
5	I	pentafluorobenzene	1.000	1.000	0.0	104	0.00	9.83
6	M	chlorotrifluoroethene		----------	NA	----------		
7	M	chlorodifluoromethane		----------	NA	----------		
8	M	dichlorodifluoromethane	0.643	0.427	33.6	95	-0.02	4.21
9	M	chloromethane		----------	NA	----------		
10	M	vinyl chloride		----------	NA	----------		
11	M	bromomethane		----------	NA	----------		
12	M	chloroethane		----------	NA	----------		
13	M	trichlorofluoromethane		----------	NA	----------		
14		vinyl bromide		----------	NA	----------		
15	M	ethyl ether		----------	NA	----------		
16		2-chloropropane		----------	NA	----------		
17	M	acrolein		----------	NA	----------		
18		freon 113		----------	NA	----------		
19	M	1,1-dichloroethene		----------	NA	----------		
20	M	acetone		----------	NA	----------		
21	M	acetonitrile		----------	NA	----------		
22	M	iodomethane		----------	NA	----------		
23	M	carbon disulfide		----------	NA	----------		
24	M	methylene chloride		----------	NA	----------		
25	M	methyl acetate		----------	NA	----------		
26	M	methyl tert butyl ether		----------	NA	----------		
27	M	trans-1,2-dichloroethene		----------	NA	----------		
28		hexane		----------	NA	----------		
29	M	di-isopropyl ether		----------	NA	----------		
30	M	ethyl tert-butyl ether		----------	NA	----------		
31	M	2-butanone		----------	NA	----------		
32	M	1,1-dichloroethane		----------	NA	----------		
33	M	chloroprene		----------	NA	----------		
34	M	acrylonitrile		----------	NA	----------		
35	M	vinyl acetate		----------	NA	----------		
36	M	ethyl acetate		----------	NA	----------		
37	M	2,2-dichloropropane		----------	NA	----------		
38	M	cis-1,2-dichloroethene		----------	NA	----------		
39	M	methyl acrylate		----------	NA	----------		
40	M	propionitrile		----------	NA	----------		
41	M	bromochloromethane		----------	NA	----------		
42	M	tetrahydrofuran		----------	NA	----------		
43	M	chloroform		----------	NA	----------		
44		tert-butyl Formate		----------	NA	----------		

Continuing Calibration Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9776-CC9728
Lab FileID: U213689.D

45	M	iso-butyl alcohol			----------NA----------				
46	S	dibromofluoromethane (s)	0.419	0.452	-7.9	113	0.00	9.90	
47	M	methacrylonitrile			----------NA----------				
48	M	1,1,1-trichloroethane			----------NA----------				
49		cyclohexane			----------NA----------				
50		1,1-dichloropropene			----------NA----------				
51		carbon tetrachloride			----------NA----------				
52	M	tert amyl alcohol			----------NA----------				
53		isopropyl acetate			----------NA----------				
54	I	1,4-difluorobenzene	1.000	1.000	0.0	111	0.00	10.74	
55	S	1,2-dichloroethane-d4 (s)	0.347	0.338	2.6	107	0.00	10.32	
56		iso-octane			----------NA----------				
57	M	n-butyl alcohol			----------NA----------				
58	M	benzene			----------NA----------				
59		tert-amyl methyl ether			----------NA----------				
60	M	heptane			----------NA----------				
61	M	1,2-dichloroethane			----------NA----------				
62	M	ethyl acrylate			----------NA----------				
63	M	trichloroethene			----------NA----------				
64	M	methylcyclohexane			----------NA----------				
65	M	2-nitropropane			----------NA----------				
66	M	2-chloroethyl vinyl ether			----------NA----------				
67	M	methyl methacrylate			----------NA----------				
68	M	1,2-dichloropropane			----------NA----------				
69	M	dibromomethane			----------NA----------				
70	M	bromodichloromethane			----------NA----------				
71		epichlorohydrin			----------NA----------				
72	M	cis-1,3-dichloropropene			----------NA----------				
73	M	4-methyl-2-pentanone			----------NA----------				
74	M	3-methyl-1-butanol			----------NA----------				
75	I	chlorobenzene-d5	1.000	1.000	0.0	110	0.00	14.07	
76	S	toluene-d8 (s)	1.249	1.252	-0.2	110	0.00	12.43	
77		toluene			----------NA----------				
78		ethyl methacrylate			----------NA----------				
79		trans-1,3-dichloropropene			----------NA----------				
80		1,1,2-trichloroethane			----------NA----------				
81		2-hexanone			----------NA----------				
82	M	tetrachloroethene			----------NA----------				
83	M	1,3-dichloropropane			----------NA----------				
84	M	butyl acetate			----------NA----------				
85	M	dibromochloromethane			----------NA----------				
86	M	1,2-dibromoethane			----------NA----------				
87		3,3-dimethyl-1-Butanol			----------NA----------				
88		n-butyl ether			----------NA----------				
89	M	chlorobenzene			----------NA----------				
90	M	1,1,1,2-tetrachloroethane			----------NA----------				
91	M	ethylbenzene			----------NA----------				
92	M	m,p-xylene			----------NA----------				
93	M	o-xylene			----------NA----------				
94	M	styrene			----------NA----------				
95		butyl acrylate			----------NA----------				
96	M	bromoform			----------NA----------				
97		isopropylbenzene			----------NA----------				
98		cis-1,4-dichloro-2-butene			----------NA----------				
99		cyclohexanone			----------NA----------				
100	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	104	0.00	16.64	
101	S	4-bromofluorobenzene (s)	0.873	0.880	-0.8	105	0.00	15.35	

Continuing Calibration Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9776-CC9728
Lab FileID: U213689.D

102	M	bromobenzene			----------NA----------			
103	M	1,1,2,2-tetrachloroethane			----------NA----------			
104	M	trans-1,4-dichloro-2-bute			----------NA----------			
105	M	1,2,3-trichloropropane			----------NA----------			
106	M	n-propylbenzene			----------NA----------			
107	M	2-chlorotoluene			----------NA----------			
108	M	4-chlorotoluene			----------NA----------			
109	M	1,3,5-trimethylbenzene			----------NA----------			
110	M	tert-butylbenzene			----------NA----------			
111	M	1,2,4-trimethylbenzene			----------NA----------			
112	M	sec-butylbenzene			----------NA----------			
113	M	1,3-dichlorobenzene			----------NA----------			
114	M	p-isopropyltoluene			----------NA----------			
115	M	1,4-dichlorobenzene			----------NA----------			
116	M	benzyl chloride			----------NA----------			
117	M	1,2-dichlorobenzene			----------NA----------			
118	M	n-butylbenzene			----------NA----------			
119	M	1,2-dibromo-3-chloropropa			----------NA----------			
120		1,3,5-trichlorobenzene			----------NA----------			
121		2-ethylhexyl acrylate			----------NA----------			
122	M	1,2,4-trichlorobenzene			----------NA----------			
123	M	hexachlorobutadiene			----------NA----------			
124	M	naphthalene			----------NA----------			
125	M	1,2,3-trichlorobenzene			----------NA----------			
126	M	hexachloroethane			----------NA----------			
127		2-methylnaphthalene			----------NA----------			
128	I	pentafluorobenzene(a)	1.000	1.000	0.0	123	0.00	9.83
129	M	Pentane			----------NA----------			

(#) = Out of Range SPCC's out = 0 CCC's out = 0
U212478.D MU9728.M Wed Apr 12 16:11:45 2017

Continuing Calibration Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9776-ECC9728
Lab FileID: U213701.D

Evaluate Continuing Calibration Report

Data File : [redacted]U\vu9775-9776\U213701.D Vial: 16
Acq On : 12 Apr 2017 3:28 pm Operator: [redacted]
Sample : cc9728-50 Inst : MSU
Misc : ms14688,vu9776,w,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : [redacted]MU9728.M (RTE Integrator)
Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
Last Update : Mon Apr 03 10:07:26 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	93	-0.05	7.62
2	M	tertiary butyl alcohol	1.365	1.254	8.1	84	-0.05	7.73
3		Ethanol		----------NA----------				
4	m	1,4-dioxane	0.105	0.111	-5.7	96	-0.03	11.47
5	I	pentafluorobenzene	1.000	1.000	0.0	102	0.00	9.83
6	M	chlorotrifluoroethene		----------NA----------				
7	M	chlorodifluoromethane	0.417	0.618	-48.2	139	0.01	4.25
8	M	dichlorodifluoromethane	0.643	0.581	9.6	82	0.00	4.22
9	M	chloromethane	0.838	0.806	3.8	95	0.02	4.59
10	M	vinyl chloride	0.790	0.782	1.0	93	0.03	4.87
11	M	bromomethane	0.460	0.486	-5.7	110	0.00	5.49
12	M	chloroethane	0.359	0.408	-13.6	107	0.00	5.66
13	M	trichlorofluoromethane	0.709	0.751	-5.9	95	0.01	6.17
14		vinyl bromide	0.727	0.743	-2.2	99	0.00	6.04
15	M	ethyl ether	0.295	0.318	-7.8	102	0.00	6.53
16		2-chloropropane	0.819	0.824	-0.6	100	0.00	6.75
17	M	acrolein	0.116	0.134	-15.5	116	0.00	6.81
18		freon 113	0.390	0.399	-2.3	97	0.01	6.95
19	M	1,1-dichloroethene	0.498	0.491	1.4	98	0.00	6.99
20	M	acetone	0.062	0.055	11.3	91	-0.02	7.02
21	M	acetonitrile	0.092	0.084	8.7	91	-0.03	7.47
22	M	iodomethane	0.918	0.911	0.8	95	0.00	7.27
23	M	carbon disulfide	1.597	1.564	2.1	98	0.00	7.42
24	M	methylene chloride	0.533	0.551	-3.4	102	0.00	7.70
25	M	methyl acetate	0.548	0.483	11.9	91	0.00	7.47
26	M	methyl tert butyl ether	1.592	1.568	1.5	97	0.00	7.98
27	M	trans-1,2-dichloroethene	0.511	0.518	-1.4	100	0.00	8.05
28		hexane	0.737	0.760	-3.1	100	0.00	8.32
29	M	di-isopropyl ether	1.862	1.803	3.2	97	0.00	8.56
30	M	ethyl tert-butyl ether	1.719	1.749	-1.7	101	0.00	9.02
31	M	2-butanone	0.075	0.076	-1.3	97	0.00	9.29
32	M	1,1-dichloroethane	0.958	0.980	-2.3	101	0.00	8.61
33	M	chloroprene	0.810	0.785	3.1	94	0.00	8.70
34	M	acrylonitrile	0.236	0.246	-4.2	97	0.00	8.01
35	M	vinyl acetate	0.109	0.113	-3.7	98	0.00	8.58
36	M	ethyl acetate	0.106	0.104	1.9	95	0.00	9.30
37	M	2,2-dichloropropane	0.711	0.719	-1.1	103	0.00	9.33
38	M	cis-1,2-dichloroethene	0.561	0.577	-2.9	103	0.00	9.33
39	M	methyl acrylate	0.095	0.096	-1.1	96	0.00	9.38
40	M	propionitrile	0.097	0.095	2.1	95	0.00	9.41
41	M	bromochloromethane	0.277	0.290	-4.7	102	0.00	9.65

Continuing Calibration Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9776-ECC9728
Lab FileID: U213701.D

42	M	tetrahydrofuran	0.275	0.246	10.5	95	0.00	9.68
43	M	chloroform	0.937	0.900	3.9	101	0.00	9.69
44		tert-butyl Formate	0.550	0.547	0.5	96	0.00	9.72
45	M	iso-butyl alcohol	0.047	0.037	21.3	83	-0.02	10.12
46	S	dibromofluoromethane (s)	0.419	0.455	-8.6	110	0.00	9.89
47	M	methacrylonitrile	0.269	0.265	1.5	98	0.00	9.58
48	M	1,1,1-trichloroethane	0.729	0.728	0.1	96	0.00	9.94
49		cyclohexane	0.661	0.771	-16.6	109	0.00	10.01
50		1,1-dichloropropene	0.716	0.724	-1.1	98	0.00	10.12
51		carbon tetrachloride	0.674	0.687	-1.9	97	0.00	10.14
52	M	tert amyl alcohol	0.051	0.042	17.6	82	-0.02	10.24
53		isopropyl acetate	0.135	0.129	4.4	93	0.00	10.28
54	I	1,4-difluorobenzene	1.000	1.000	0.0	108	0.00	10.74
55	S	1,2-dichloroethane-d4 (s)	0.347	0.336	3.2	106	0.00	10.32
56		iso-octane	1.302	1.326	-1.8	104	0.00	10.37
57	M	n-butyl alcohol	0.019	0.016	15.8	87	-0.02	10.86
58	M	benzene	1.488	1.397	6.1	102	0.00	10.38
59		tert-amyl methyl ether	1.178	1.125	4.5	104	0.00	10.40
60	M	heptane	0.282	0.277	1.8	100	0.00	10.52
61	M	1,2-dichloroethane	0.502	0.456	9.2	97	0.00	10.40
62	M	ethyl acrylate	0.572	0.512	10.5	94	0.00	11.07
63	M	trichloroethene	0.377	0.364	3.4	100	0.00	11.09
64	M	methylcyclohexane	0.590	0.620	-5.1	105	0.00	11.30
65	M	2-nitropropane	0.009	0.007	22.2	80	0.00	11.88
66	M	2-chloroethyl vinyl ether	0.267	0.217	18.7	85	0.00	11.89
67	M	methyl methacrylate	0.118	0.108	8.5	94	0.00	11.35
68	M	1,2-dichloropropane	0.401	0.386	3.7	103	0.00	11.36
69	M	dibromomethane	0.240	0.238	0.8	102	0.00	11.53
70	M	bromodichloromethane	0.510	0.493	3.3	101	0.00	11.65
71		epichlorohydrin	0.055	0.045	18.2	89	0.00	12.03
72	M	cis-1,3-dichloropropene	0.659	0.637	3.3	100	0.00	12.13
73	M	4-methyl-2-pentanone	0.192	0.177	7.8	100	0.00	12.21
74	M	3-methyl-1-butanol	0.032	0.024	25.0	81	0.00	12.24
75	I	chlorobenzene-d5	1.000	1.000	0.0	106	0.00	14.07
76	S	toluene-d8 (s)	1.249	1.238	0.9	107	0.00	12.43
77		toluene	0.995	0.935	6.0	99	0.00	12.50
78		ethyl methacrylate	0.617	0.576	6.6	96	0.00	12.69
79		trans-1,3-dichloropropene	0.638	0.618	3.1	100	0.00	12.72
80		1,1,2-trichloroethane	0.334	0.319	4.5	101	0.00	12.95
81		2-hexanone	0.213	0.193	9.4	96	0.00	13.12
82	M	tetrachloroethene	0.358	0.346	3.4	97	0.00	13.13
83	M	1,3-dichloropropane	0.627	0.606	3.3	101	0.00	13.15
84	M	butyl acetate	0.361	0.312	13.6	93	0.00	13.19
85	M	dibromochloromethane	0.457	0.443	3.1	99	0.00	13.44
86	M	1,2-dibromoethane	0.427	0.421	1.4	100	0.00	13.61
87		3,3-dimethyl-1-Butanol	0.065	0.046	29.2	73	0.00	13.31
88		n-butyl ether	1.745	1.668	4.4	100	0.00	13.98
89	M	chlorobenzene	1.165	1.069	8.2	97	0.00	14.10
90	M	1,1,1,2-tetrachloroethane	0.415	0.402	3.1	99	0.00	14.17
91	M	ethylbenzene	1.946	1.810	7.0	98	0.00	14.15
92	M	m,p-xylene	0.750	0.698	6.9	97	0.00	14.26
93	M	o-xylene	0.752	0.701	6.8	98	0.00	14.73
94	M	styrene	1.279	1.220	4.6	99	0.00	14.75
95		butyl acrylate	0.919	0.861	6.3	97	0.00	14.53
96	M	bromoform	0.367	0.352	4.1	96	0.00	15.05
97		isopropylbenzene	1.976	1.837	7.0	97	0.00	15.11
98		cis-1,4-dichloro-2-butene	0.187	0.162	13.4	85	0.00	15.20
99		cyclohexanone	0.000	0.000	0.0	0#	0.03	15.34

Continuing Calibration Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: DSCP, 20th & Pattison Avenue, Philadelphia, PA

Sample: VU9776-ECC9728
Lab FileID: U213701.D

100	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	104	0.00	16.64
101	S	4-bromofluorobenzene (s)	0.873	0.879	-0.7	104	0.00	15.34
102	M	bromobenzene	0.978	0.936	4.3	97	0.00	15.56
103	M	1,1,2,2-tetrachloroethane	1.070	1.059	1.0	102	0.00	15.46
104	M	trans-1,4-dichloro-2-bute	0.298	0.271	9.1	88	0.00	15.50
105	M	1,2,3-trichloropropane	0.275	0.266	3.3	98	0.00	15.55
106	M	n-propylbenzene	4.231	4.039	4.5	99	0.00	15.56
107	M	2-chlorotoluene	0.879	0.838	4.7	98	0.00	15.73
108	M	4-chlorotoluene	2.619	2.485	5.1	99	0.00	15.84
109	M	1,3,5-trimethylbenzene	2.993	2.822	5.7	97	0.00	15.72
110	M	tert-butylbenzene	2.645	2.476	6.4	97	0.00	16.12
111	M	1,2,4-trimethylbenzene	3.053	2.894	5.2	98	0.00	16.17
112	M	sec-butylbenzene	3.874	3.710	4.2	98	0.00	16.36
113	M	1,3-dichlorobenzene	1.878	1.790	4.7	98	0.00	16.58
114	M	p-isopropyltoluene	3.408	3.189	6.4	96	0.00	16.48
115	M	1,4-dichlorobenzene	1.884	1.783	5.4	98	0.00	16.67
116	M	benzyl chloride	2.098	2.161	-3.0	108	0.00	16.80
117	M	1,2-dichlorobenzene	1.790	1.728	3.5	99	0.00	17.11
118	M	n-butylbenzene	1.692	1.664	1.7	99	0.00	16.95
119	M	1,2-dibromo-3-chloropropa	0.257	0.247	3.9	92	0.00	17.97
120		1,3,5-trichlorobenzene	1.460	1.503	-2.9	107	0.00	18.16
121		2-ethylhexyl acrylate	0.647	0.229	64.6#	35#	0.00	18.80
122	M	1,2,4-trichlorobenzene	1.293	1.236	4.4	95	0.00	18.87
123	M	hexachlorobutadiene	0.717	0.666	7.1	94	0.00	18.99
124	M	naphthalene	2.935	2.698	8.1	92	0.00	19.20
125	M	1,2,3-trichlorobenzene	1.080	1.024	5.2	94	0.00	19.47
126	M	hexachloroethane	0.628	0.602	4.1	93	0.00	17.39
127		2-methylnaphthalene	0.712	0.617	13.3	79	0.00	20.52
128	I	pentafluorobenzene(a)	1.000	1.000	0.0	120	0.00	9.83
129	M	Pentane		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
U212483.D MU9728.M Wed Apr 12 16:16:33 2017

GC/MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213697.D
Acq On : 12 Apr 2017 1:21 pm
Operator : [redacted]
Sample : [redacted]1
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Apr 12 16:15:12 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

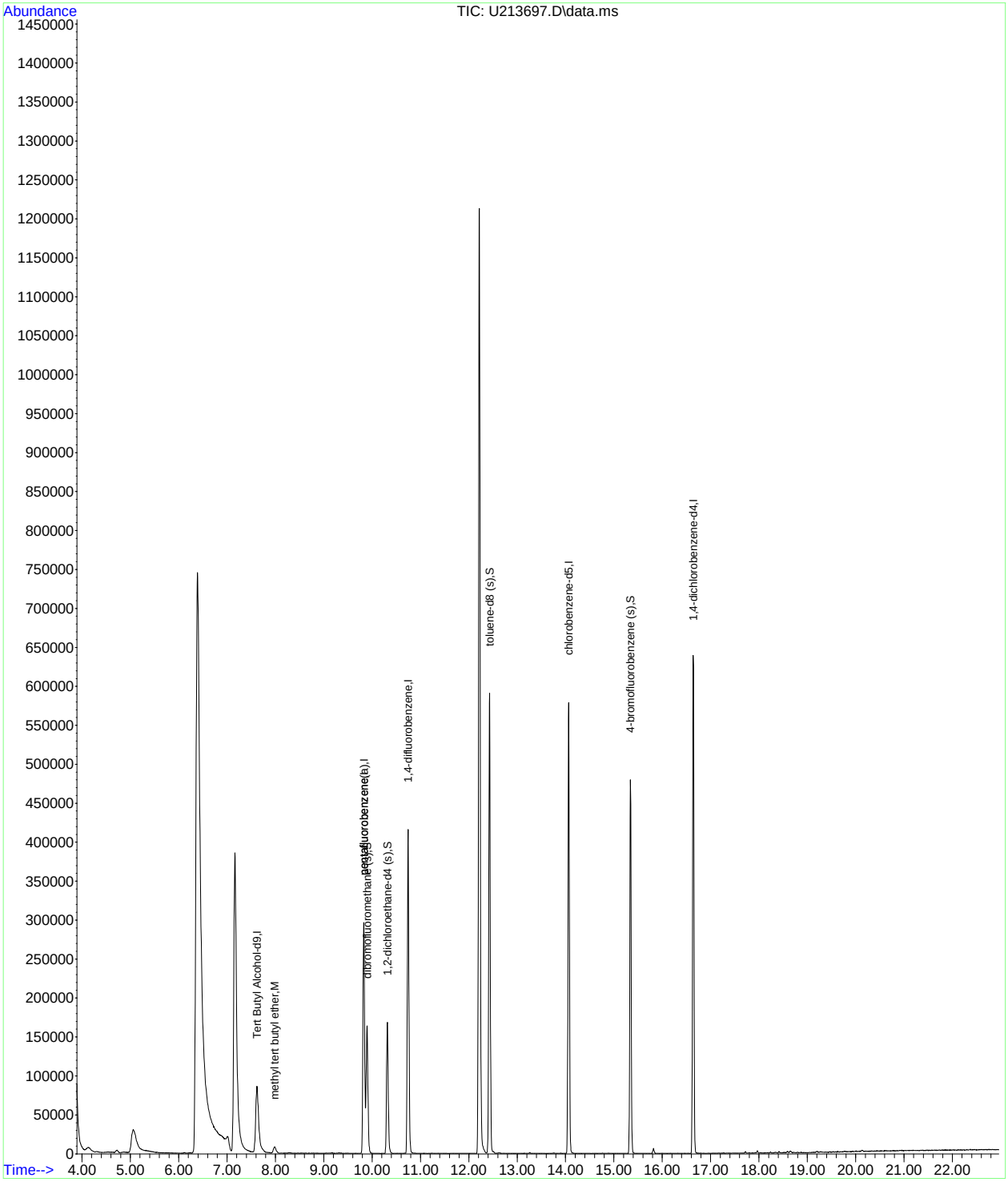
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.618	65	218645	500.00	ug/L	-0.05
5) pentafluorobenzene	9.830	168	289698	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.745	114	424287	50.00	ug/L	0.00
75) chlorobenzene-d5	14.066	117	397525	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.645	152	208507	50.00	ug/L	0.00
128) pentafluorobenzene(a)	9.830	168	289698	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.898	113	128060	52.79	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 105.58%			
55) 1,2-dichloroethane-d4 (s)	10.316	65	145088	49.22	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 98.44%			
76) toluene-d8 (s)	12.429	98	485201	48.86	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 97.72%			
101) 4-bromofluorobenzene (s)	15.342	95	188992	51.91	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 103.82%			
Target Compounds						Qvalue
26) methyl tert butyl ether	7.984	73	14038	1.52	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

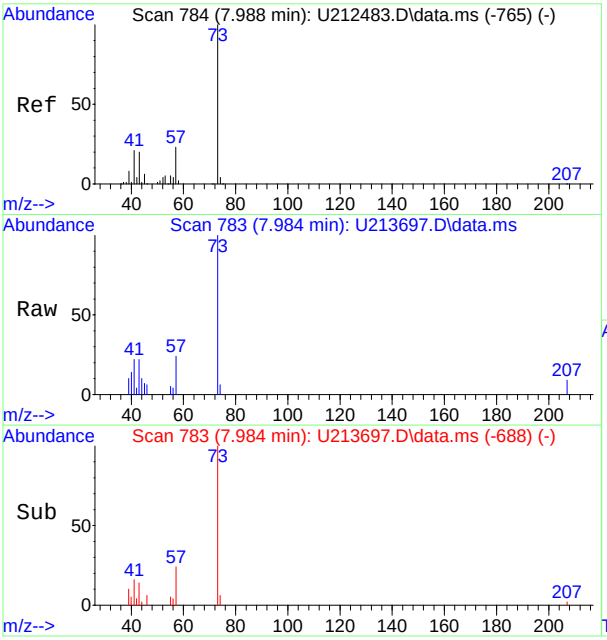
Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213697.D
Acq On : 12 Apr 2017 1:21 pm
Operator : [redacted]
Sample : [redacted]1
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Apr 12 16:15:12 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration



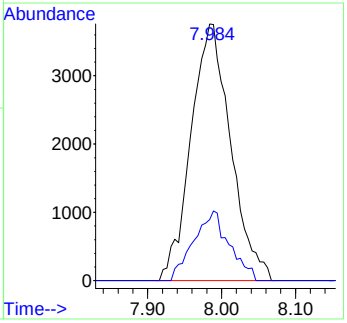
SGS ACCUTEST



#26
methyl tert butyl ether
Concen: 1.52 ug/L
RT: 7.984 min Scan# 783
Delta R.T. -0.004 min
Lab File: U213697.D
Acq: 12 Apr 2017 1:21 pm

Tgt Ion: 73 Resp: 14038

Ion	Ratio	Lower	Upper
73	100		
57	23.7	0.0	52.9



7.1.1

7

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213696.D
Acq On : 12 Apr 2017 12:52 pm
Operator : [redacted]
Sample : [redacted]2
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 12 16:42:44 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

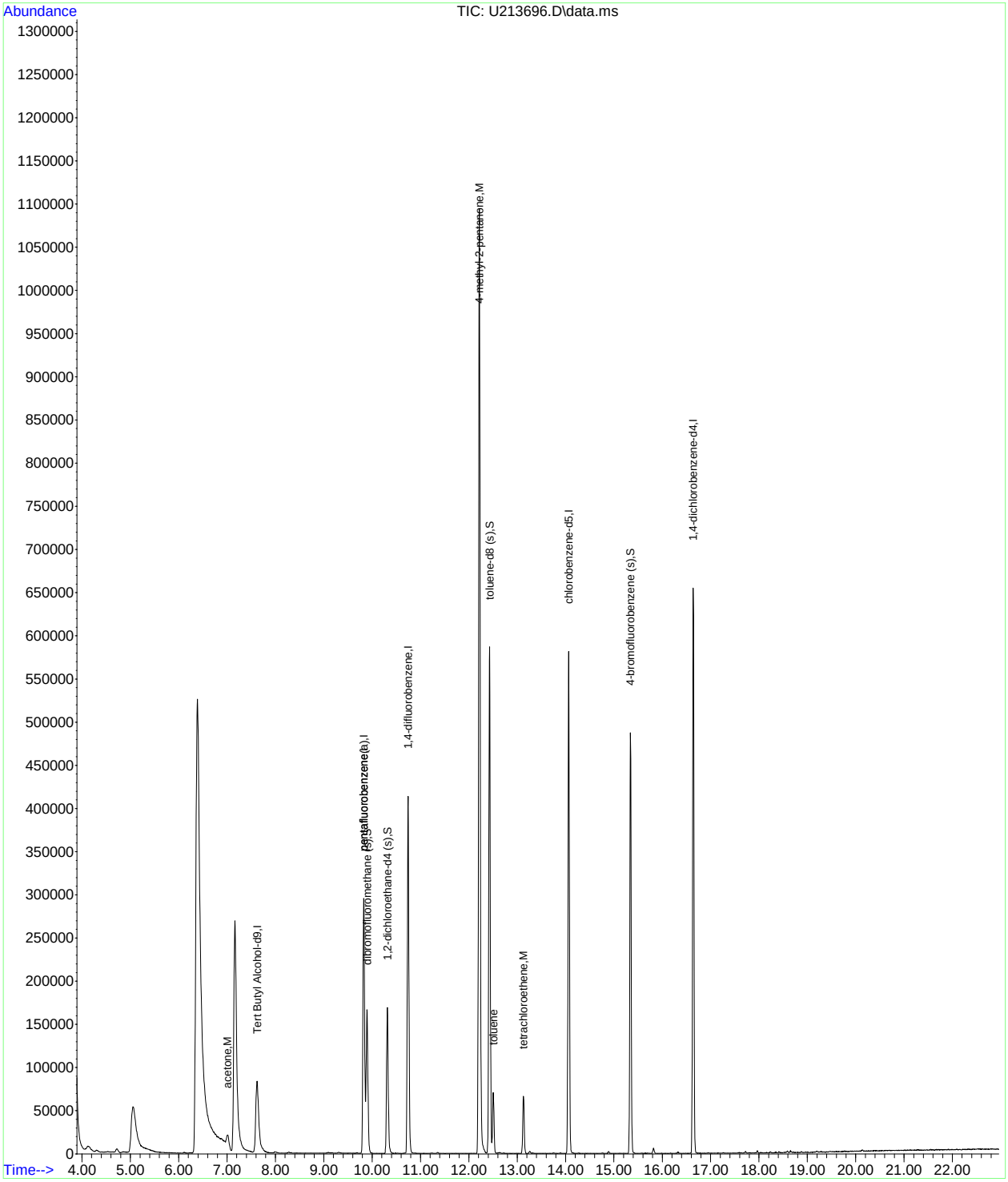
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.622	65	218613	500.00	ug/L	-0.04
5) pentafluorobenzene	9.824	168	290548	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.745	114	427945	50.00	ug/L	0.00
75) chlorobenzene-d5	14.066	117	398280	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.639	152	210427	50.00	ug/L	0.00
128) pentafluorobenzene(a)	9.824	168	290548	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.897	113	128923	52.99	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 105.98%			
55) 1,2-dichloroethane-d4 (s)	10.316	65	146817	49.38	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 98.76%			
76) toluene-d8 (s)	12.429	98	485860	48.83	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 97.66%			
101) 4-bromofluorobenzene (s)	15.342	95	188497	51.30	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 102.60%			
Target Compounds						Qvalue
20) acetone	7.005	58	8510	23.79	ug/L	95
73) 4-methyl-2-pentanone	12.219	58	388932	237.02	ug/L	94
77) toluene	12.507	92	37202	4.69	ug/L	100
82) tetrachloroethene	13.129	164	19714	6.91	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

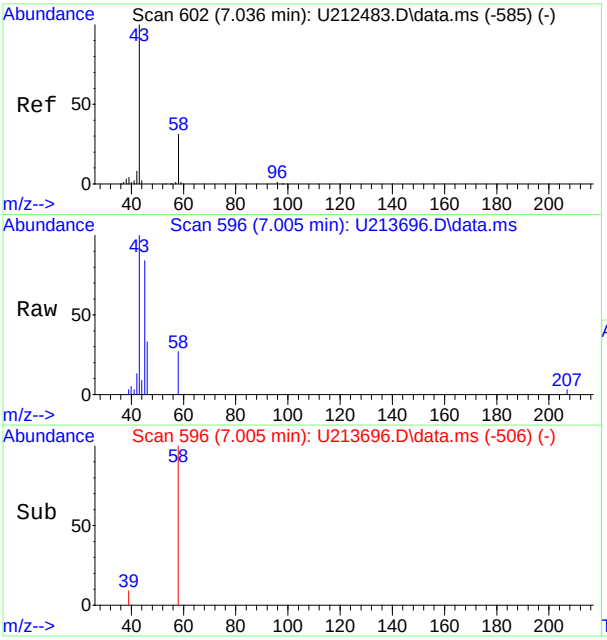
Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213696.D
Acq On : 12 Apr 2017 12:52 pm
Operator : [redacted]
Sample : [redacted]2
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 12 16:42:44 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration



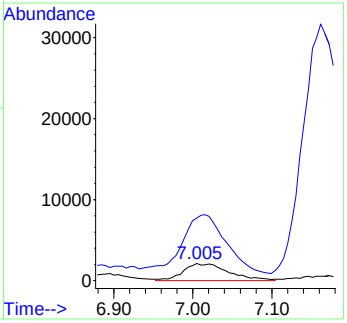
SGS ACCUTEST

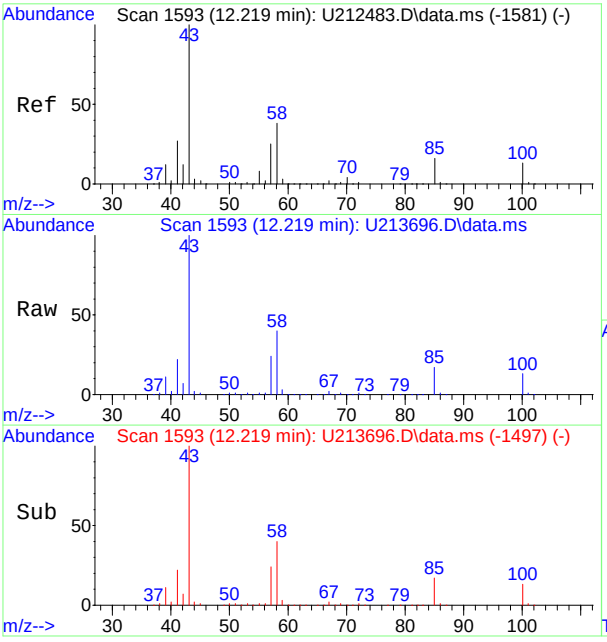


#20
acetone
Concen: 23.79 ug/L
RT: 7.005 min Scan# 596
Delta R.T. -0.030 min
Lab File: U213696.D
Acq: 12 Apr 2017 12:52 pm

Tgt Ion: 58 Resp: 8510

Ion	Ratio	Lower	Upper
58	100		
43	329.5	290.1	350.1

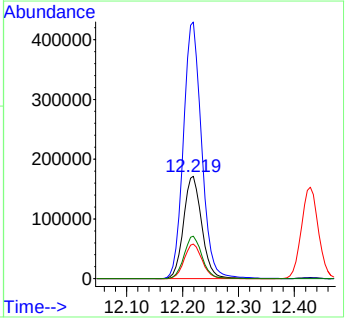


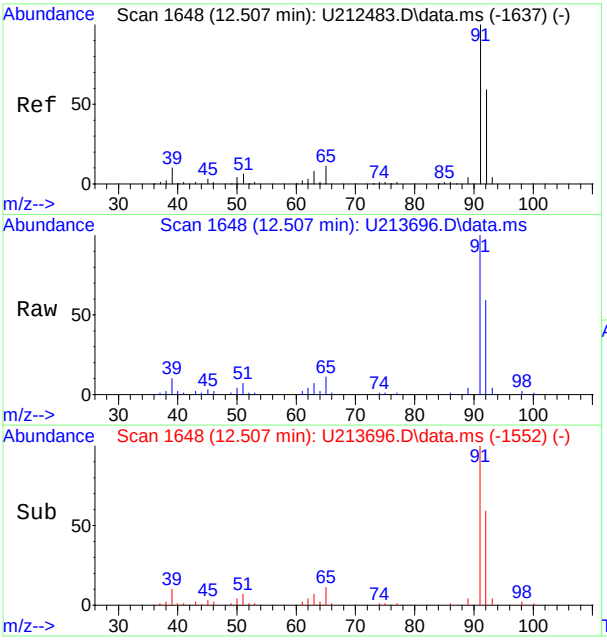


#73
4-methyl-2-pentanone
Concen: 237.02 ug/L
RT: 12.219 min Scan# 1593
Delta R.T. 0.001 min
Lab File: U213696.D
Acq: 12 Apr 2017 12:52 pm

Tgt Ion: 58 Resp: 388932

Ion	Ratio	Lower	Upper
58	100		
43	250.8	243.3	283.3
100	33.8	14.8	54.8
85	41.6	22.8	62.8

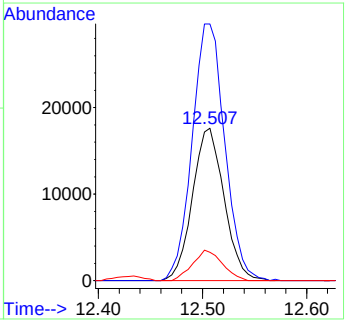


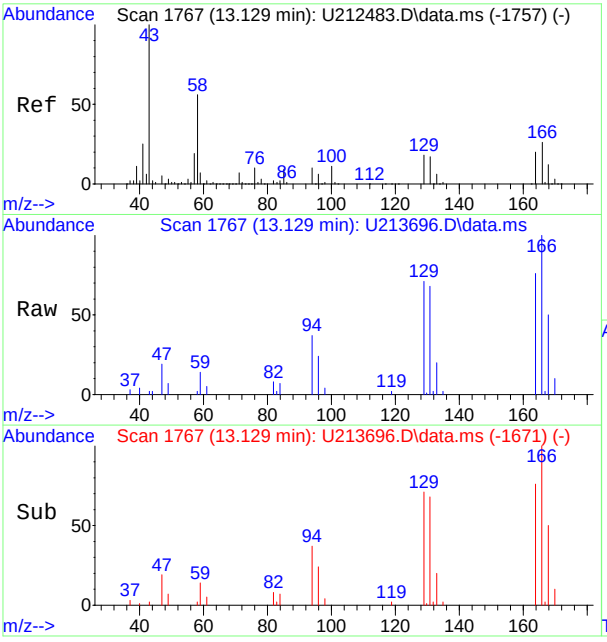


#77
toluene
Concen: 4.69 ug/L
RT: 12.507 min Scan# 1648
Delta R.T. 0.001 min
Lab File: U213696.D
Acq: 12 Apr 2017 12:52 pm

Tgt Ion: 92 Resp: 37202

Ion	Ratio	Lower	Upper
92	100		
91	168.2	148.6	188.6
65	18.6	0.0	39.2

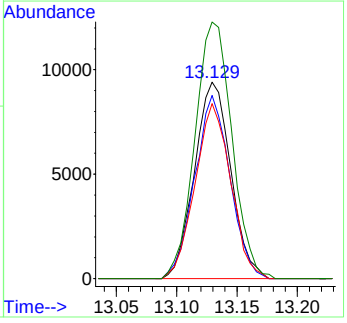




#82
tetrachloroethene
Concen: 6.91 ug/L
RT: 13.129 min Scan# 1767
Delta R.T. 0.001 min
Lab File: U213696.D
Acq: 12 Apr 2017 12:52 pm

Tgt Ion:164 Resp: 19714

Ion	Ratio	Lower	Upper
164	100		
129	93.3	60.1	120.1
131	89.1	56.1	116.1
166	130.7	101.2	161.2



Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213695.D
Acq On : 12 Apr 2017 12:23 pm
Operator : [redacted]
Sample : [redacted]3
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 12 16:14:09 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

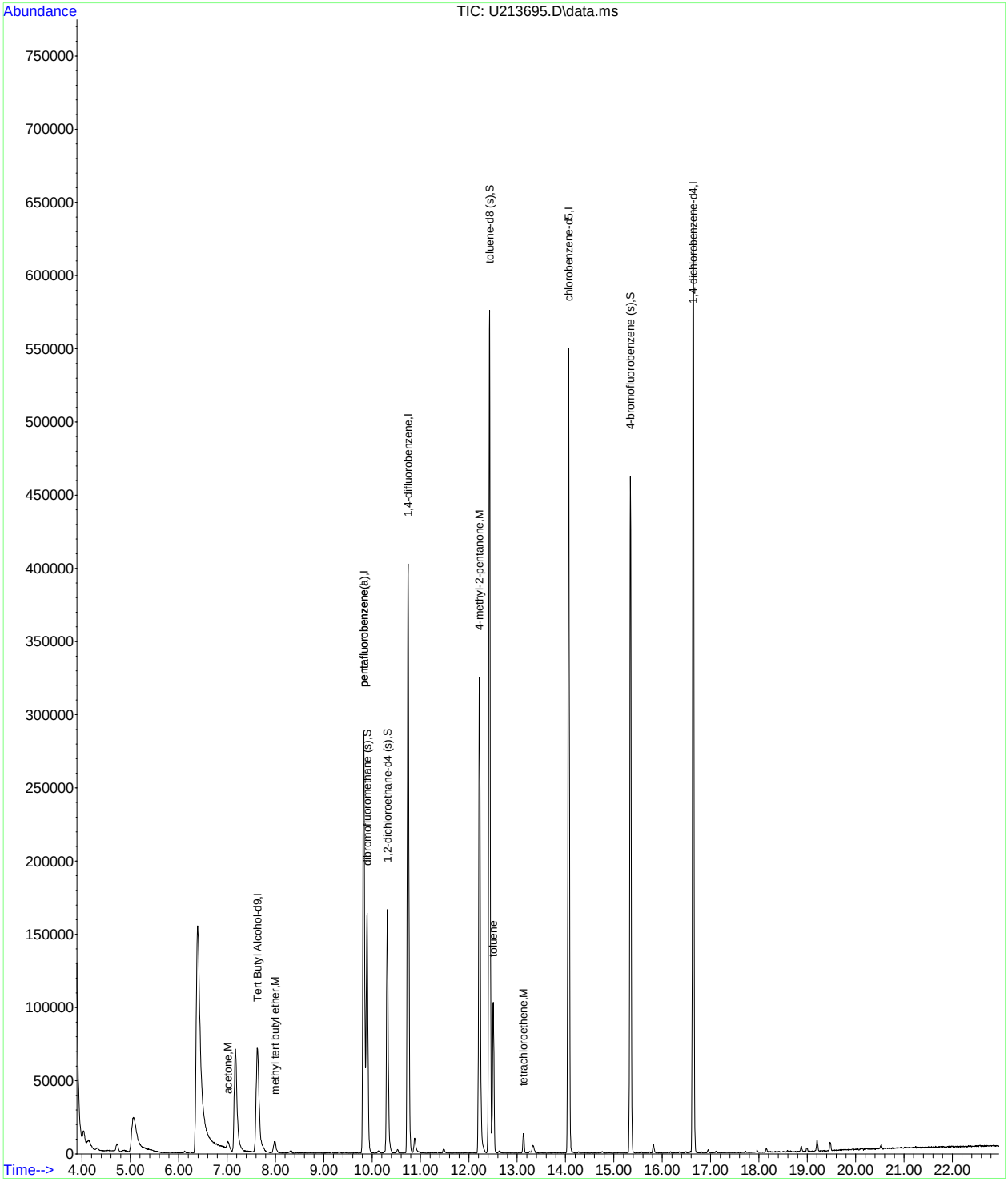
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.628	65	188665	500.00	ug/L	-0.03
5) pentafluorobenzene	9.830	168	283940	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.745	114	418668	50.00	ug/L	0.00
75) chlorobenzene-d5	14.067	117	386434	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.640	152	205475	50.00	ug/L	0.00
128) pentafluorobenzene(a)	9.830	168	283940	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.898	113	126981	53.41	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 106.82%			
55) 1,2-dichloroethane-d4 (s)	10.317	65	140639	48.35	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 96.70%			
76) toluene-d8 (s)	12.429	98	478576	49.57	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 99.14%			
101) 4-bromofluorobenzene (s)	15.343	95	184619	51.46	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 102.92%			
Target Compounds						Qvalue
20) acetone	7.016	58	4260	12.18	ug/L #	69
26) methyl tert butyl ether	7.994	73	14468	1.60	ug/L	95
73) 4-methyl-2-pentanone	12.220	58	116633	72.65	ug/L	92
77) toluene	12.503	92	54665	7.11	ug/L	96
82) tetrachloroethene	13.130	164	3652	1.32	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

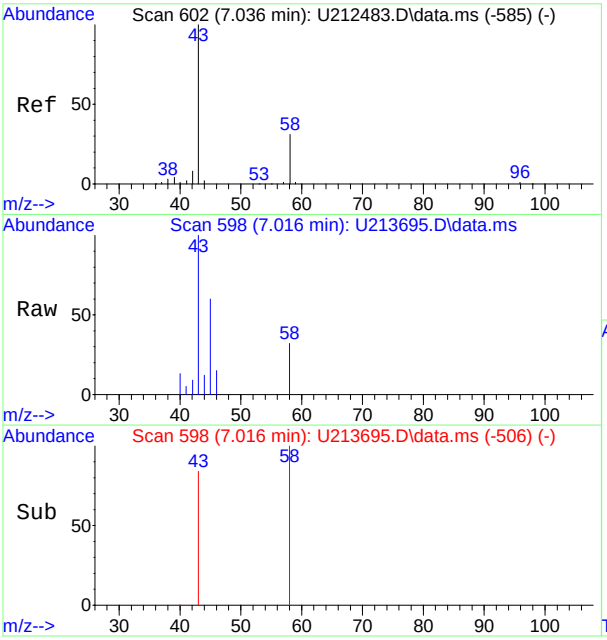
Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213695.D
Acq On : 12 Apr 2017 12:23 pm
Operator : [redacted]
Sample : [redacted]3
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 12 16:14:09 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration



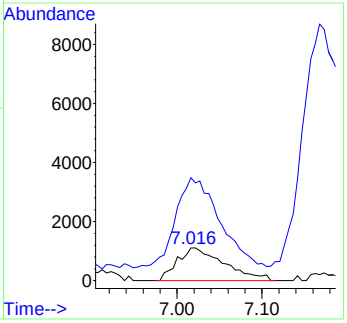
SGS ACCUTEST

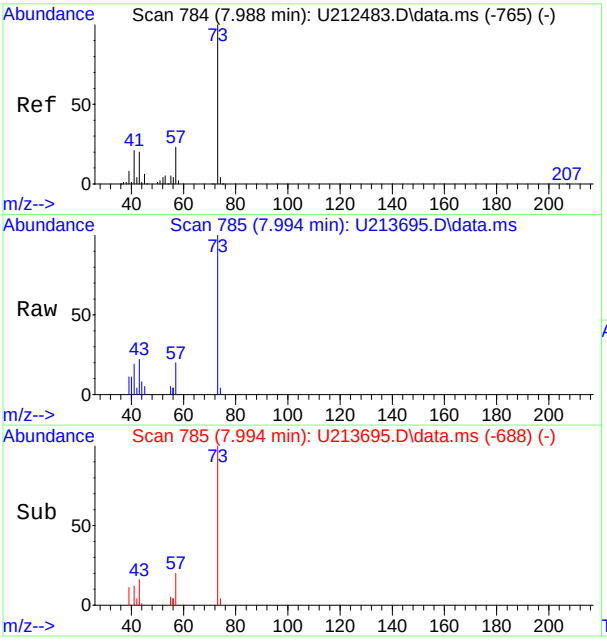


#20
acetone
Concen: 12.18 ug/L
RT: 7.016 min Scan# 598
Delta R.T. -0.019 min
Lab File: U213695.D
Acq: 12 Apr 2017 12:23 pm

Tgt Ion: 58 Resp: 4260

Ion	Ratio	Lower	Upper
58	100		
43	256.0	290.1	350.1#

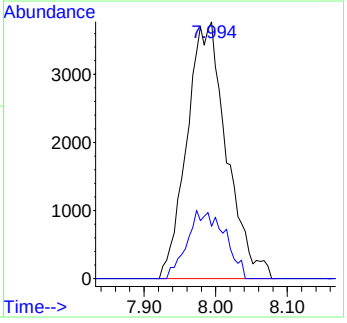


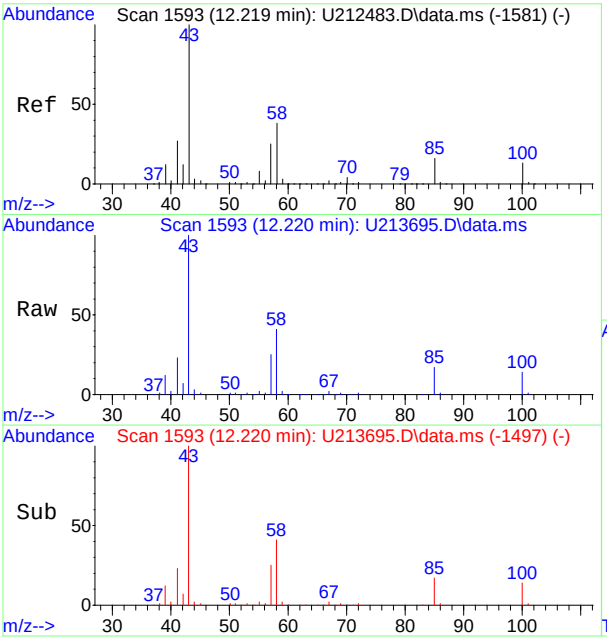


#26
methyl tert butyl ether
Concen: 1.60 ug/L
RT: 7.994 min Scan# 785
Delta R.T. 0.007 min
Lab File: U213695.D
Acq: 12 Apr 2017 12:23 pm

Tgt Ion: 73 Resp: 14468

Ion	Ratio	Lower	Upper
73	100		
57	20.4	0.0	52.9

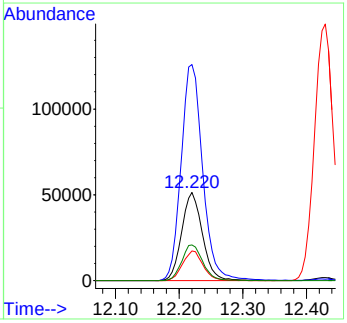


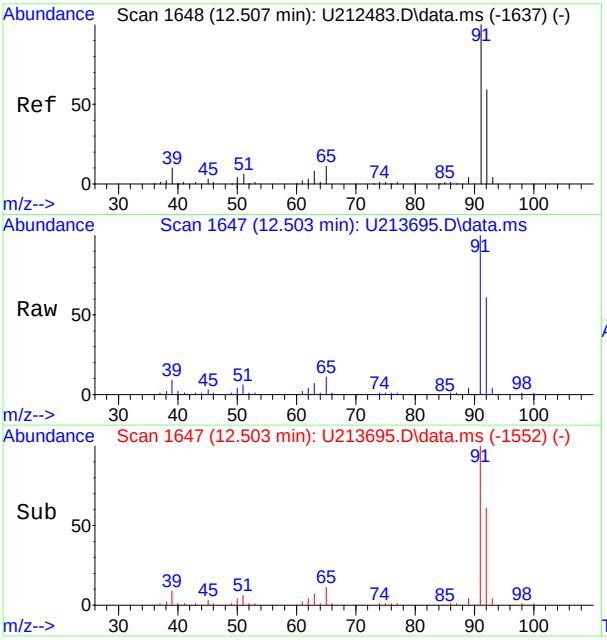


#73
4-methyl-2-pentanone
Concen: 72.65 ug/L
RT: 12.220 min Scan# 1593
Delta R.T. 0.002 min
Lab File: U213695.D
Acq: 12 Apr 2017 12:23 pm

Tgt Ion: 58 Resp: 116633

Ion	Ratio	Lower	Upper
58	100		
43	245.2	243.3	283.3
100	33.6	14.8	54.8
85	40.6	22.8	62.8

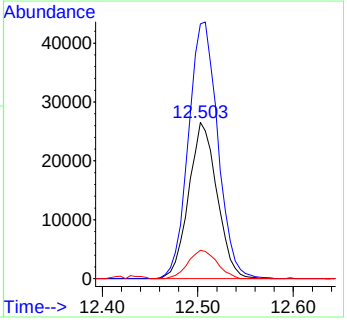


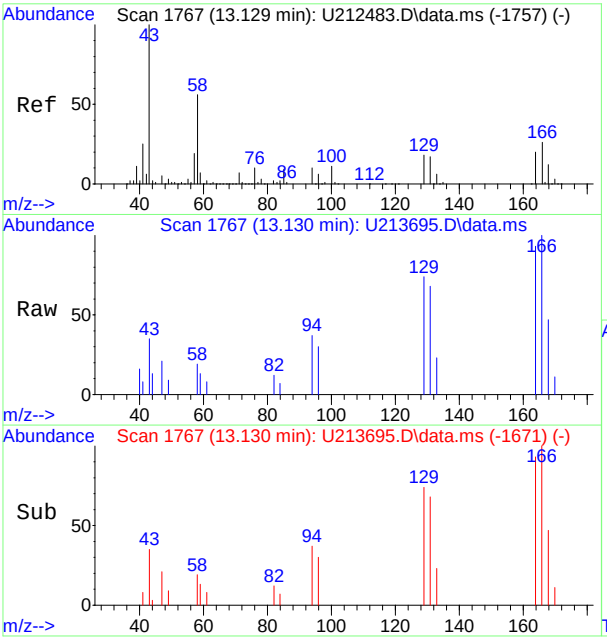


#77
toluene
Concen: 7.11 ug/L
RT: 12.503 min Scan# 1647
Delta R.T. -0.004 min
Lab File: U213695.D
Acq: 12 Apr 2017 12:23 pm

Tgt Ion: 92 Resp: 54665

Ion	Ratio	Lower	Upper
92	100		
91	163.2	148.6	188.6
65	18.2	0.0	39.2

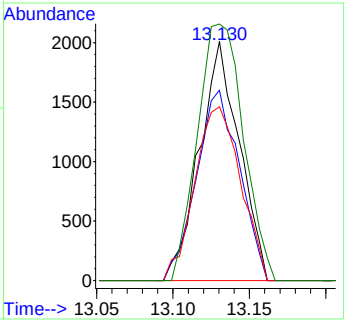




#82
tetrachloroethene
Concen: 1.32 ug/L
RT: 13.130 min Scan# 1767
Delta R.T. 0.002 min
Lab File: U213695.D
Acq: 12 Apr 2017 12:23 pm

Tgt Ion:164 Resp: 3652

Ion	Ratio	Lower	Upper
164	100		
129	79.7	60.1	120.1
131	72.7	56.1	116.1
166	107.3	101.2	161.2



7.1.3

7

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213698.D
Acq On : 12 Apr 2017 1:50 pm
Operator : [redacted]
Sample : [redacted]4
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 12 16:15:29 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

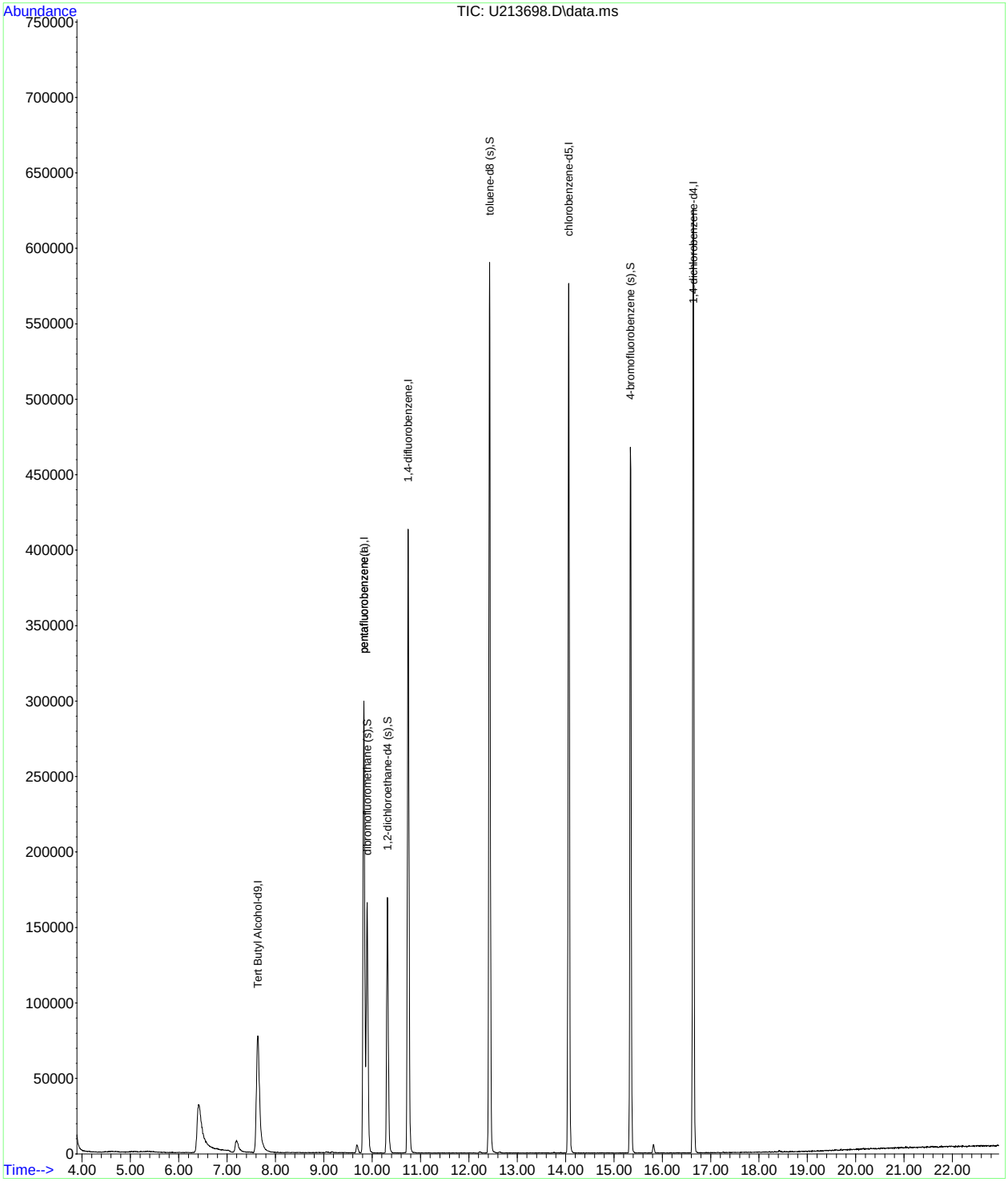
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.637	65	214848	500.00	ug/L	-0.03
5) pentafluorobenzene	9.829	168	289593	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.744	114	422949	50.00	ug/L	0.00
75) chlorobenzene-d5	14.065	117	395019	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.644	152	202277	50.00	ug/L	0.00
128) pentafluorobenzene(a)	9.829	168	289593	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.897	113	128793	53.11	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 106.22%			
55) 1,2-dichloroethane-d4 (s)	10.315	65	143941	48.99	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 97.98%			
76) toluene-d8 (s)	12.428	98	491270	49.78	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 99.56%			
101) 4-bromofluorobenzene (s)	15.341	95	185034	52.39	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 104.78%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213698.D
Acq On : 12 Apr 2017 1:50 pm
Operator : [redacted]
Sample : [redacted]4
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 12 16:15:29 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213693.D
Acq On : 12 Apr 2017 11:13 am
Operator : [redacted]
Sample : mb
Misc : ms14578,vu9776,w,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 12 16:13:05 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

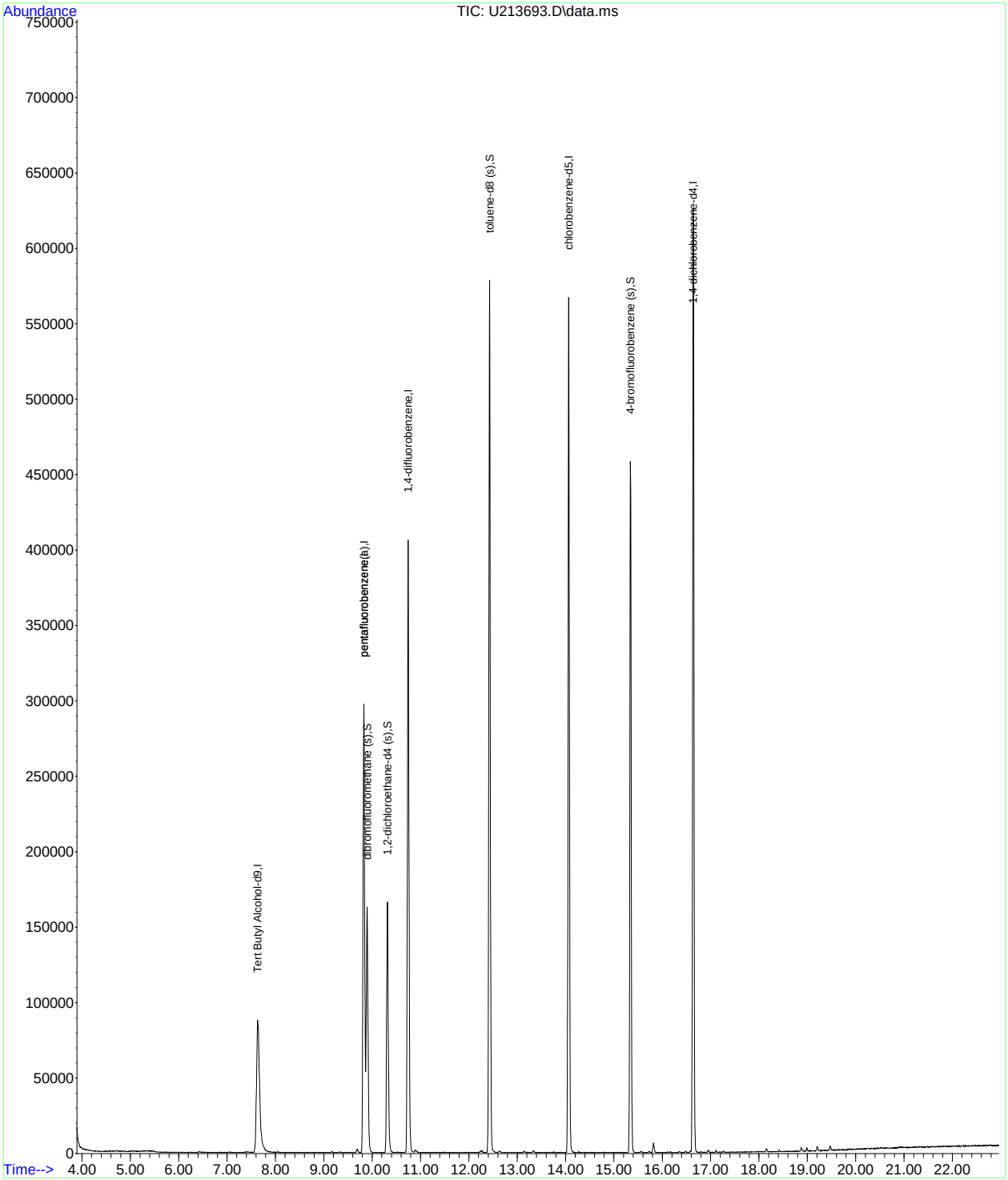
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.633	65	230537	500.00	ug/L	-0.03
5) pentafluorobenzene	9.829	168	282282	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.745	114	411925	50.00	ug/L	0.00
75) chlorobenzene-d5	14.066	117	383099	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.639	152	203395	50.00	ug/L	0.00
128) pentafluorobenzene(a)	9.829	168	282282	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.897	113	126703	53.60	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 107.20%			
55) 1,2-dichloroethane-d4 (s)	10.316	65	141346	49.39	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 98.78%			
76) toluene-d8 (s)	12.429	98	473146	49.44	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 98.88%			
101) 4-bromofluorobenzene (s)	15.342	95	181461	51.10	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 102.20%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213693.D
Acq On : 12 Apr 2017 11:13 am
Operator : [redacted]
Sample : mb
Misc : ms14578,vu9776,w,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 12 16:13:05 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213694.D
Acq On : 12 Apr 2017 11:42 am
Operator : [redacted]
Sample : bs
Misc : ms14578,vu9776,w,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 12 16:13:12 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.623	65	208550	500.00	ug/L		-0.04
5) pentafluorobenzene	9.830	168	273526	50.00	ug/L		0.00
54) 1,4-difluorobenzene	10.745	114	406659	50.00	ug/L		0.00
75) chlorobenzene-d5	14.066	117	381760	50.00	ug/L		0.00
100) 1,4-dichlorobenzene-d4	16.639	152	209808	50.00	ug/L		0.00
128) pentafluorobenzene(a)	9.830	168	273526	50.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	9.898	113	122281	53.39	ug/L		0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 106.78%				
55) 1,2-dichloroethane-d4 (s)	10.316	65	136764	48.41	ug/L		0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 96.82%				
76) toluene-d8 (s)	12.429	98	469719	49.25	ug/L		0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 98.50%				
101) 4-bromofluorobenzene (s)	15.342	95	184376	50.33	ug/L		0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 100.66%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.727	59	134507	236.25	ug/L		88
4) 1,4-dioxane	11.472	88	51172	1163.91	ug/L		97
7) chlorodifluoromethane	4.249	51	251929	110.32	ug/L		89
8) dichlorodifluoromethane	4.207	85	124636	35.41	ug/L		98
9) chloromethane	4.589	50	182516	39.81	ug/L		99
10) vinyl chloride	4.866	62	170652	39.47	ug/L		98
11) bromomethane	5.494	94	117298	46.58	ug/L		97
12) chloroethane	5.656	64	99463	50.70	ug/L		98
13) trichlorofluoromethane	6.163	101	182859	47.13	ug/L		95
14) vinyl bromide	6.043	106	235384	59.14	ug/L		98
15) ethyl ether	6.524	74	84267	52.17	ug/L	#	86
16) 2-chloropropane	6.749	43	205877	45.96	ug/L		97
17) acrolein	6.807	56	37214	58.72	ug/L		92
18) freon 113	6.937	151	103615	48.54	ug/L		95
19) 1,1-dichloroethene	6.990	96	119435	43.88	ug/L		95
20) acetone	7.016	58	84039	249.52	ug/L		100
21) acetonitrile	7.492	41	462633	917.69	ug/L		53
22) iodomethane	7.267	142	226716	45.13	ug/L		99
23) carbon disulfide	7.424	76	485426	55.58	ug/L		99
24) methylene chloride	7.691	84	140929	48.32	ug/L		98
25) methyl acetate	7.460	43	145301	48.43	ug/L		98
26) methyl tert butyl ether	7.983	73	872206	100.16	ug/L		90
27) trans-1,2-dichloroethene	8.046	96	133033	47.55	ug/L		98
28) hexane	8.323	57	153392	38.04	ug/L		98
29) di-isopropyl ether	8.559	45	502036	49.29	ug/L		99
30) ethyl tert-butyl ether	9.024	59	468577	49.83	ug/L		100
31) 2-butanone	9.291	72	117064	285.23	ug/L		93
32) 1,1-dichloroethane	8.606	63	258285	49.31	ug/L		98
33) chloroprene	8.705	53	211103	47.62	ug/L		98
34) acrylonitrile	8.010	53	76961	59.69	ug/L		99
35) vinyl acetate	8.580	86	32899	55.40	ug/L	#	95
36) ethyl acetate	9.296	45	31163	53.78	ug/L		85
37) 2,2-dichloropropane	9.333	77	189535	48.73	ug/L		99
38) cis-1,2-dichloroethene	9.333	96	156640	51.02	ug/L		98
39) methyl acrylate	9.385	85	29031	55.66	ug/L		93
40) propionitrile	9.406	54	288444	544.61	ug/L		90
41) bromochloromethane	9.647	128	77625	51.25	ug/L		97
42) tetrahydrofuran	9.678	42	74569	49.59	ug/L		99
43) chloroform	9.694	83	249342	48.63	ug/L		98
44) tert-butyl Formate	9.720	59	113311	37.68	ug/L		97
45) iso-butyl alcohol	10.117	43	113618	440.61	ug/L		96
47) methacrylonitrile	9.579	67	77001	52.25	ug/L		99
48) 1,1,1-trichloroethane	9.945	97	197254	49.47	ug/L		98
49) cyclohexane	10.013	84	207946	57.47	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213694.D
Acq On : 12 Apr 2017 11:42 am
Operator : [redacted]
Sample : bs
Misc : ms14578,vu9776,w,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 12 16:13:12 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
50) 1,1-dichloropropene	10.117	75	193319	49.36	ug/L		98
51) carbon tetrachloride	10.143	117	182931	49.62	ug/L		99
52) tert amyl alcohol	10.238	73	64659	231.36	ug/L		91
53) isopropyl acetate	10.279	87	38710	52.24	ug/L	#	87
56) iso-octane	10.368	57	515174	48.66	ug/L		98
57) n-butyl alcohol	10.865	56	356400	2331.38	ug/L		97
58) benzene	10.384	78	565996	46.77	ug/L		99
59) tert-amyl methyl ether	10.394	73	460573	48.08	ug/L		100
60) heptane	10.525	57	118971	51.85	ug/L		97
61) 1,2-dichloroethane	10.405	62	192713	47.23	ug/L		99
62) ethyl acrylate	11.080	55	239192	51.43	ug/L		99
63) trichloroethene	11.090	95	149655	48.83	ug/L		99
64) methylcyclohexane	11.305	83	231828	48.30	ug/L		98
65) 2-nitropropane	11.885	46	3197	44.54	ug/L	#	77
66) 2-chloroethyl vinyl ether	11.890	63	464482	213.74	ug/L		99
67) methyl methacrylate	11.346	100	47228	49.36	ug/L		92
68) 1,2-dichloropropane	11.362	63	163618	50.19	ug/L		98
69) dibromomethane	11.529	93	100397	51.54	ug/L		97
70) bromodichloromethane	11.660	83	205948	49.69	ug/L		99
71) epichlorohydrin	12.032	57	99906	222.89	ug/L		98
72) cis-1,3-dichloropropene	12.126	75	269108	50.24	ug/L		95
73) 4-methyl-2-pentanone	12.215	58	397493	254.92	ug/L		97
74) 3-methyl-1-butanol	12.236	55	216868	845.47	ug/L		99
77) toluene	12.507	92	363463	47.84	ug/L		98
78) ethyl methacrylate	12.691	69	230149	48.87	ug/L		100
79) trans-1,3-dichloropropene	12.717	75	247478	50.83	ug/L		100
80) 1,1,2-trichloroethane	12.952	83	127720	50.15	ug/L		99
81) 2-hexanone	13.125	58	411851	253.07	ug/L		98
82) tetrachloroethene	13.130	164	133945	48.96	ug/L		99
83) 1,3-dichloropropane	13.146	76	240972	50.36	ug/L		100
84) butyl acetate	13.193	56	134299	48.70	ug/L		98
85) dibromochloromethane	13.438	129	175740	50.32	ug/L		99
86) 1,2-dibromoethane	13.606	107	166945	51.24	ug/L		98
87) 3,3-dimethyl-1-Butanol	13.308	57	193815	387.99	ug/L		97
88) n-butyl ether	13.977	57	682505	51.22	ug/L		99
89) chlorobenzene	14.097	112	421045	47.32	ug/L		100
90) 1,1,1,2-tetrachloroethane	14.165	131	154951	48.85	ug/L		97
91) ethylbenzene	14.150	91	706053	47.52	ug/L		100
92) m,p-xylene	14.265	106	544429	95.03	ug/L		99
93) o-xylene	14.730	106	273650	47.67	ug/L		96
94) styrene	14.741	104	474448	48.58	ug/L		99
95) butyl acrylate	14.526	55	360524	51.37	ug/L		99
96) bromoform	15.055	173	145085	51.81	ug/L		100
97) isopropylbenzene	15.107	105	707396	46.90	ug/L		99
98) cis-1,4-dichloro-2-butene	15.196	88	79884	56.05	ug/L		95
102) bromobenzene	15.562	156	201641	49.15	ug/L		95
103) 1,1,2,2-tetrachloroethane	15.457	83	234462	52.23	ug/L		98
104) trans-1,4-dichloro-2-b...	15.504	53	67645	54.02	ug/L		95
105) 1,2,3-trichloropropane	15.546	110	60794	52.70	ug/L		96
106) n-propylbenzene	15.562	91	867332	48.85	ug/L		98
107) 2-chlorotoluene	15.734	126	179432	48.67	ug/L		99
108) 4-chlorotoluene	15.844	91	530718	48.29	ug/L		100
109) 1,3,5-trimethylbenzene	15.724	105	597363	47.57	ug/L		100
110) tert-butylbenzene	16.116	119	528043	47.58	ug/L		99
111) 1,2,4-trimethylbenzene	16.169	105	619816	48.39	ug/L		99
112) sec-butylbenzene	16.357	105	786487	48.38	ug/L		99
113) 1,3-dichlorobenzene	16.577	146	380855	48.32	ug/L		99
114) p-isopropyltoluene	16.482	119	664678	46.48	ug/L		99
115) 1,4-dichlorobenzene	16.671	146	384076	48.57	ug/L		100
116) benzyl chloride	16.796	91	434645	49.37	ug/L		97
117) 1,2-dichlorobenzene	17.110	146	369536	49.20	ug/L		99
118) n-butylbenzene	16.943	92	346842	48.85	ug/L		98
119) 1,2-dibromo-3-chloropr...	17.962	157	54889	50.87	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213694.D
Acq On : 12 Apr 2017 11:42 am
Operator : [redacted]
Sample : bs
Misc : ms14578,vu9776,w,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 12 16:13:12 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
120) 1,3,5-trichlorobenzene	18.151	180	293966	48.00	ug/L	99
121) 2-ethylhexyl acrylate	18.805	70	8371	3.08	ug/L	90
122) 1,2,4-trichlorobenzene	18.873	180	251449	46.34	ug/L	98
123) hexachlorobutadiene	18.993	225	135257	44.97	ug/L	98
124) naphthalene	19.202	128	565083	45.89	ug/L	99
125) 1,2,3-trichlorobenzene	19.474	180	205638	45.37	ug/L	99
126) hexachloroethane	17.392	201	127734	48.50	ug/L	100
127) 2-methylnaphthalene	20.525	142	47927	16.05	ug/L	98

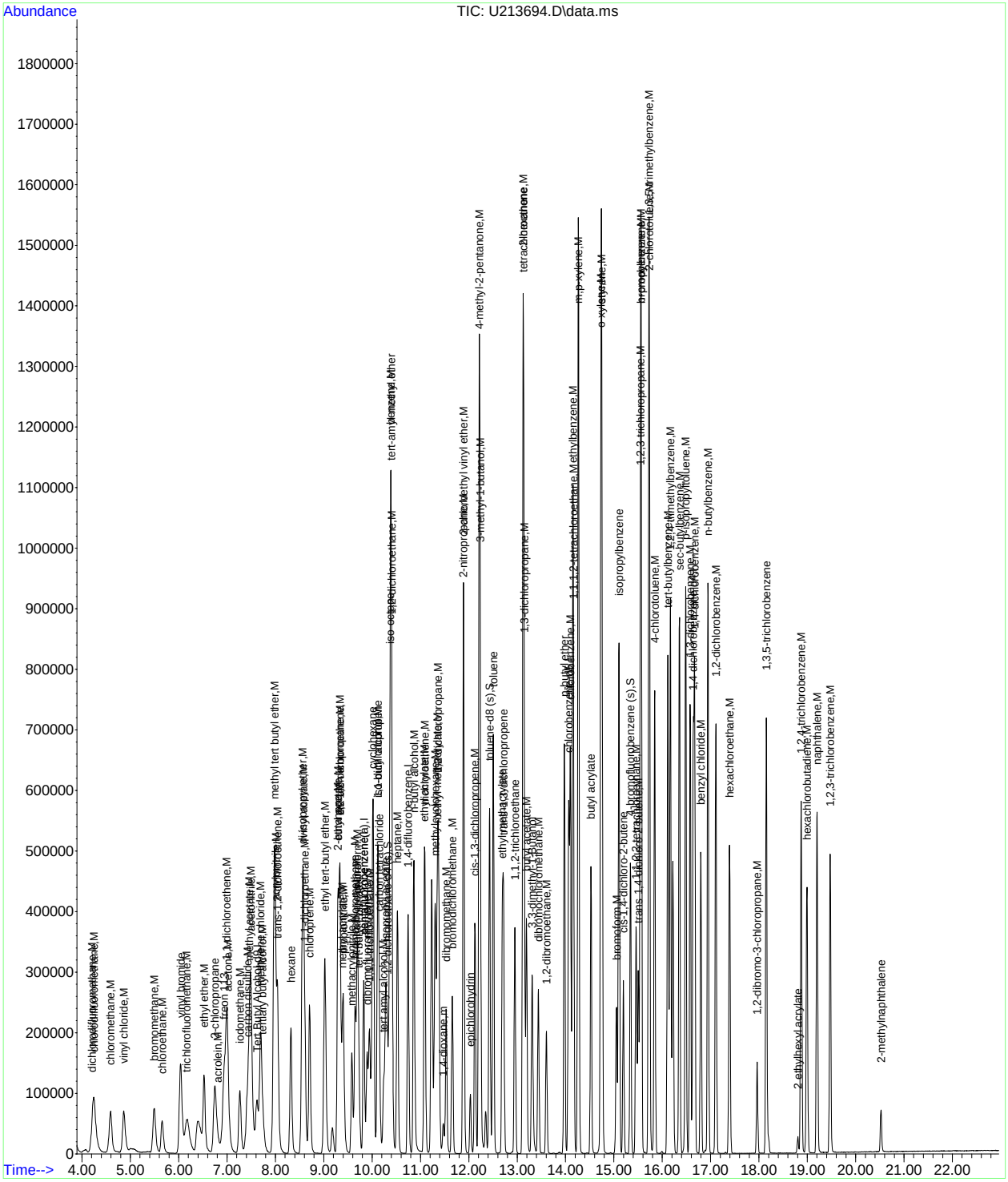
(#) = qualifier out of range (m) = manual integration (+) = signals summed

7.3.1
7

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213694.D
Acq On : 12 Apr 2017 11:42 am
Operator : [redacted]
Sample : bs
Misc : ms14578,vu9776,w,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 12 16:13:12 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration



SGS ACCUTEST

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213700.D
Acq On : 12 Apr 2017 2:49 pm
Operator : [redacted]
Sample : [redacted]3ms
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 12 16:16:10 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.618	65	209510	500.00	ug/L	-0.05
5) pentafluorobenzene	9.825	168	275957	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.746	114	411853	50.00	ug/L	0.00
75) chlorobenzene-d5	14.067	117	387711	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.640	152	212157	50.00	ug/L	0.00
128) pentafluorobenzene(a)	9.825	168	275957	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.893	113	123359	53.38	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 106.76%			
55) 1,2-dichloroethane-d4 (s)	10.317	65	138671	48.46	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 96.92%			
76) toluene-d8 (s)	12.430	98	472399	48.77	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 97.54%			
101) 4-bromofluorobenzene (s)	15.343	95	186320	50.30	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 100.60%			
Target Compounds						Qvalue
2) tertiary butyl alcohol	7.738	59	131302	229.57	ug/L	90
4) 1,4-dioxane	11.473	88	46913	1062.15	ug/L	98
7) chlorodifluoromethane	4.250	51	260071	112.88	ug/L	91
8) dichlorodifluoromethane	4.208	85	142391	40.09	ug/L	98
9) chloromethane	4.600	50	194649	42.08	ug/L	99
10) vinyl chloride	4.872	62	184489	42.29	ug/L	99
11) bromomethane	5.500	94	122857	48.36	ug/L	98
12) chloroethane	5.662	64	105862	53.49	ug/L	97
13) trichlorofluoromethane	6.174	101	199891	51.07	ug/L	94
14) vinyl bromide	6.038	106	251515	62.64	ug/L	99
15) ethyl ether	6.530	74	80315	49.29	ug/L	89
16) 2-chloropropane	6.750	43	211368	46.77	ug/L	95
17) acrolein	6.807	56	33061	51.71	ug/L	98
18) freon 113	6.943	151	114031	52.95	ug/L	98
19) 1,1-dichloroethene	6.990	96	126029	45.90	ug/L	95
20) acetone	7.011	58	82789	243.64	ug/L	96
21) acetonitrile	7.492	41	449627	884.03	ug/L	53
22) iodomethane	7.267	142	230246	45.43	ug/L	98
23) carbon disulfide	7.424	76	498763	56.60	ug/L	99
24) methylene chloride	7.696	84	142644	48.47	ug/L	98
25) methyl acetate	7.466	43	130271	43.04	ug/L	98
26) methyl tert butyl ether	7.984	73	859995	97.88	ug/L	91
27) trans-1,2-dichloroethene	8.047	96	138551	49.09	ug/L	98
28) hexane	8.324	57	164454	40.42	ug/L	100
29) di-isopropyl ether	8.559	45	484297	47.13	ug/L	94
30) ethyl tert-butyl ether	9.025	59	452066	47.65	ug/L	99
31) 2-butanone	9.292	72	109242	263.83	ug/L	95
32) 1,1-dichloroethane	8.606	63	264909	50.13	ug/L	99
33) chloroprene	8.706	53	216366	48.37	ug/L	98
34) acrylonitrile	8.010	53	72583	55.80	ug/L	97
35) vinyl acetate	8.580	86	30189	50.38	ug/L	97
36) ethyl acetate	9.297	45	28614	48.95	ug/L	91
37) 2,2-dichloropropane	9.333	77	199561	50.86	ug/L	98
38) cis-1,2-dichloroethene	9.333	96	159344	51.44	ug/L	95
39) methyl acrylate	9.386	85	27300	51.88	ug/L #	87
40) propionitrile	9.407	54	273385	511.63	ug/L	88
41) bromochloromethane	9.647	128	77828	50.93	ug/L	97
42) tetrahydrofuran	9.673	42	65282	43.03	ug/L	97
43) chloroform	9.694	83	253730	49.05	ug/L	98
44) tert-butyl Formate	9.726	59	42651	14.06	ug/L #	94
45) iso-butyl alcohol	10.113	43	104717	402.52	ug/L	98
47) methacrylonitrile	9.579	67	73783	49.63	ug/L	98
48) 1,1,1-trichloroethane	9.945	97	208502	51.83	ug/L	99
49) cyclohexane	10.013	84	224795	61.58	ug/L	96

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213700.D
Acq On : 12 Apr 2017 2:49 pm
Operator : [redacted]
Sample : [redacted]3ms
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 12 16:16:10 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
50)	1,1-dichloropropene	10.118	75	205774	52.08	ug/L		98
51)	carbon tetrachloride	10.144	117	196053	52.71	ug/L		98
52)	tert amyl alcohol	10.238	73	60197	213.50	ug/L		88
53)	isopropyl acetate	10.280	87	35931	48.07	ug/L	#	93
56)	iso-octane	10.369	57	578742	53.98	ug/L		98
57)	n-butyl alcohol	10.861	56	327662	2116.36	ug/L		98
58)	benzene	10.385	78	580541	47.37	ug/L		100
59)	tert-amyl methyl ether	10.395	73	443627	45.73	ug/L		98
60)	heptane	10.526	57	132589	57.06	ug/L		99
61)	1,2-dichloroethane	10.406	62	190162	46.02	ug/L		99
62)	ethyl acrylate	11.080	55	229823	48.80	ug/L		98
63)	trichloroethene	11.091	95	155316	50.03	ug/L		98
64)	methylcyclohexane	11.305	83	256717	52.81	ug/L		99
65)	2-nitropropane	11.891	46	1706	23.47	ug/L	#	66
67)	methyl methacrylate	11.352	100	45928	47.39	ug/L		99
68)	1,2-dichloropropane	11.363	63	165767	50.21	ug/L		96
69)	dibromomethane	11.535	93	99305	50.34	ug/L		100
70)	bromodichloromethane	11.656	83	205806	49.03	ug/L		99
71)	epichlorohydrin	12.032	57	76731	169.03	ug/L		98
72)	cis-1,3-dichloropropene	12.126	75	266498	49.12	ug/L		97
73)	4-methyl-2-pentanone	12.215	58	499663	316.40	ug/L		96
74)	3-methyl-1-butanol	12.236	55	200933	773.46	ug/L		96
77)	toluene	12.508	92	429235	55.63	ug/L		99
78)	ethyl methacrylate	12.691	69	226431	47.35	ug/L		98
79)	trans-1,3-dichloropropene	12.717	75	242084	48.96	ug/L		100
80)	1,1,2-trichloroethane	12.953	83	126274	48.82	ug/L		98
81)	2-hexanone	13.125	58	379624	229.69	ug/L		98
82)	tetrachloroethene	13.130	164	146810	52.84	ug/L		99
83)	1,3-dichloropropane	13.151	76	237833	48.94	ug/L		99
84)	butyl acetate	13.193	56	124572	44.48	ug/L		99
85)	dibromochloromethane	13.439	129	174269	49.13	ug/L		99
86)	1,2-dibromoethane	13.606	107	162489	49.11	ug/L		99
87)	3,3-dimethyl-1-Butanol	13.308	57	168593	332.32	ug/L		99
88)	n-butyl ether	13.978	57	692260	51.16	ug/L		99
89)	chlorobenzene	14.098	112	430761	47.67	ug/L		99
90)	1,1,1,2-tetrachloroethane	14.166	131	156960	48.72	ug/L		99
91)	ethylbenzene	14.150	91	729788	48.36	ug/L		99
92)	m,p-xylene	14.265	106	559356	96.14	ug/L		99
93)	o-xylene	14.731	106	279282	47.90	ug/L		97
94)	styrene	14.747	104	481360	48.53	ug/L		97
95)	butyl acrylate	14.527	55	359047	50.37	ug/L		99
96)	bromoform	15.055	173	140981	49.58	ug/L		99
97)	isopropylbenzene	15.107	105	740651	48.35	ug/L		100
98)	cis-1,4-dichloro-2-butene	15.196	88	70702	48.85	ug/L		98
102)	bromobenzene	15.562	156	204558	49.31	ug/L		95
103)	1,1,2,2-tetrachloroethane	15.458	83	228106	50.25	ug/L		99
104)	trans-1,4-dichloro-2-b...	15.505	53	60699	47.93	ug/L		92
105)	1,2,3-trichloropropane	15.547	110	58733	50.35	ug/L		98
106)	n-propylbenzene	15.562	91	905695	50.45	ug/L		98
107)	2-chlorotoluene	15.735	126	185157	49.66	ug/L		97
108)	4-chlorotoluene	15.845	91	541141	48.70	ug/L		99
109)	1,3,5-trimethylbenzene	15.725	105	623690	49.11	ug/L		99
110)	tert-butylbenzene	16.117	119	553524	49.32	ug/L		100
111)	1,2,4-trimethylbenzene	16.169	105	635889	49.09	ug/L		99
112)	sec-butylbenzene	16.352	105	833702	50.71	ug/L		99
113)	1,3-dichlorobenzene	16.577	146	385615	48.38	ug/L		99
114)	p-isopropyltoluene	16.483	119	699035	48.34	ug/L		99
115)	1,4-dichlorobenzene	16.671	146	386295	48.31	ug/L		98
116)	benzyl chloride	16.797	91	407489	45.77	ug/L		97
117)	1,2-dichlorobenzene	17.111	146	366967	48.32	ug/L		100
118)	n-butylbenzene	16.943	92	364955	50.84	ug/L		96
119)	1,2-dibromo-3-chloropr...	17.963	157	51593	47.29	ug/L		96
120)	1,3,5-trichlorobenzene	18.151	180	295329	47.69	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213700.D
Acq On : 12 Apr 2017 2:49 pm
Operator : [redacted]
Sample : [redacted]3ms
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 12 16:16:10 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

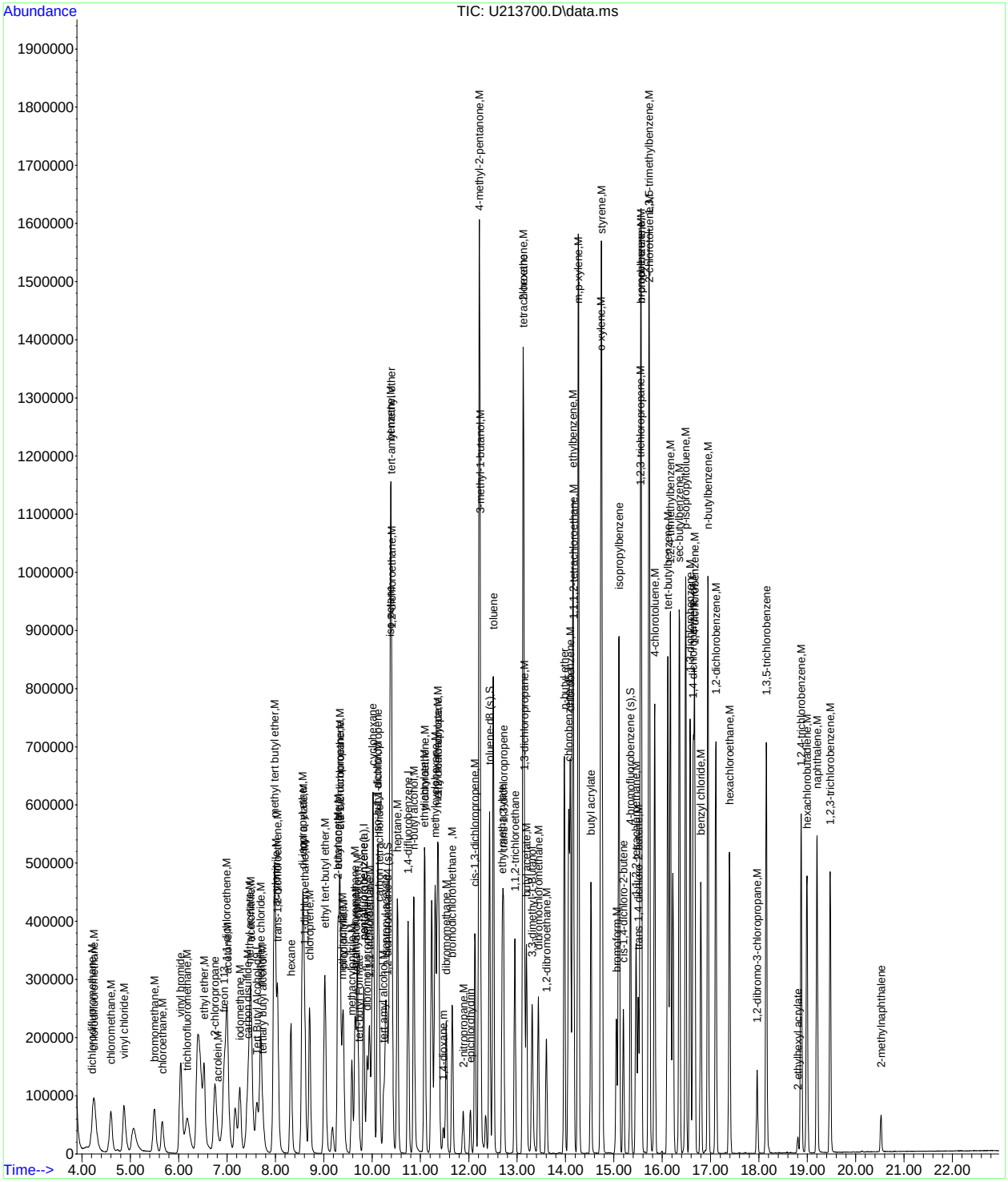
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) 2-ethylhexyl acrylate	18.805	70	8842	3.22	ug/L	89
122) 1,2,4-trichlorobenzene	18.873	180	248345	45.26	ug/L	99
123) hexachlorobutadiene	18.993	225	142610	46.89	ug/L	99
124) naphthalene	19.203	128	550673	44.23	ug/L	100
125) 1,2,3-trichlorobenzene	19.475	180	202181	44.11	ug/L	96
126) hexachloroethane	17.393	201	131481	49.37	ug/L	98
127) 2-methylnaphthalene	20.526	142	43099	14.27	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213700.D
Acq On : 12 Apr 2017 2:49 pm
Operator : [redacted]
Sample : [redacted]3ms
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 12 16:16:10 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration



SGS ACCUTEST

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213699.D
Acq On : 12 Apr 2017 2:20 pm
Operator : [redacted]
Sample : [redacted]2dup
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 12 16:42:31 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

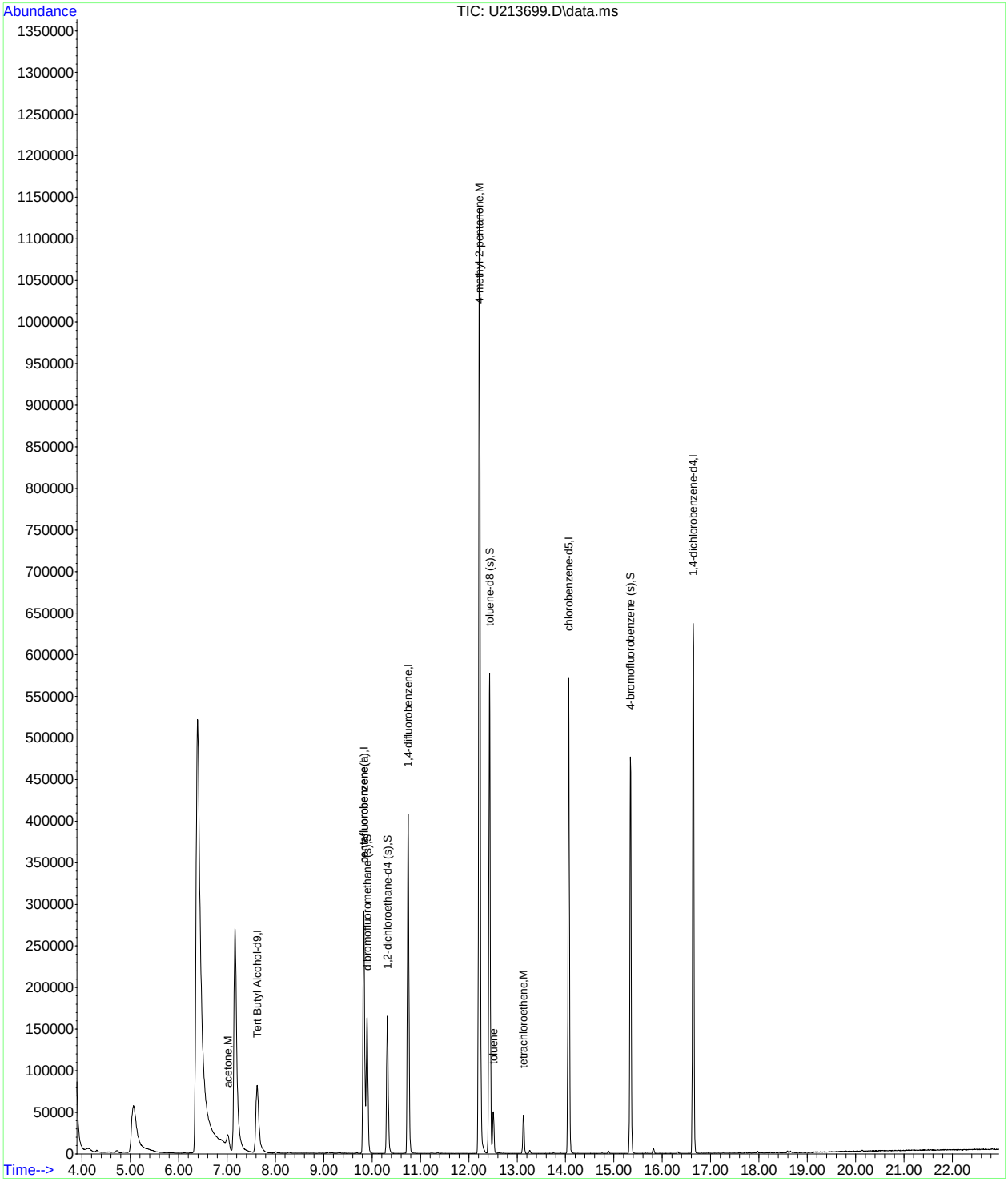
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.622	65	214156	500.00	ug/L	-0.04
5) pentafluorobenzene	9.830	168	283279	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.745	114	416499	50.00	ug/L	0.00
75) chlorobenzene-d5	14.066	117	388300	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.639	152	203519	50.00	ug/L	0.00
128) pentafluorobenzene(a)	9.830	168	283279	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.898	113	127259	53.65	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 107.30%			
55) 1,2-dichloroethane-d4 (s)	10.316	65	143712	49.67	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 99.34%			
76) toluene-d8 (s)	12.429	98	476002	49.07	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 98.14%			
101) 4-bromofluorobenzene (s)	15.342	95	184866	52.02	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 104.04%			
Target Compounds						Qvalue
20) acetone	7.016	58	10576	30.32	ug/L	92
73) 4-methyl-2-pentanone	12.220	58	401012	251.10	ug/L	92
77) toluene	12.507	92	26254	3.40	ug/L	91
82) tetrachloroethene	13.130	164	13594	4.89	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

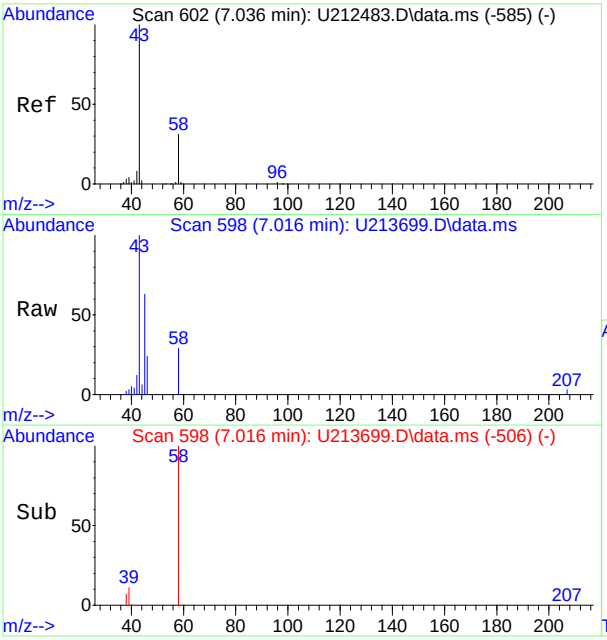
Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213699.D
Acq On : 12 Apr 2017 2:20 pm
Operator : [redacted]
Sample : [redacted]2dup
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 12 16:42:31 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration



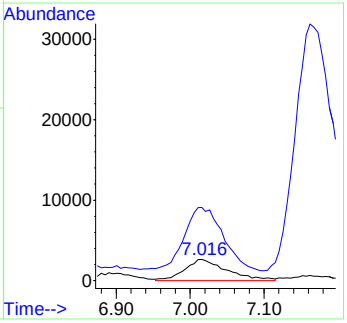
MU9728.M Wed Apr 12 16:42:34 2017 Page: 2

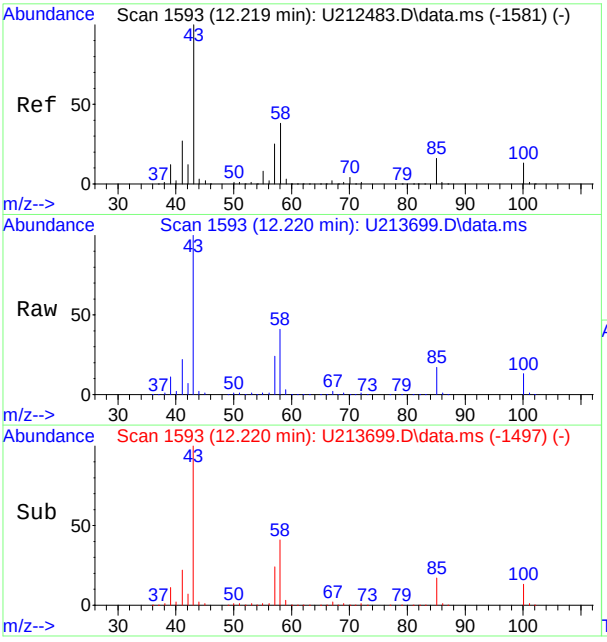


#20
acetone
Concen: 30.32 ug/L
RT: 7.016 min Scan# 598
Delta R.T. -0.019 min
Lab File: U213699.D
Acq: 12 Apr 2017 2:20 pm

Tgt Ion: 58 Resp: 10576

Ion	Ratio	Lower	Upper
58	100		
43	304.6	290.1	350.1

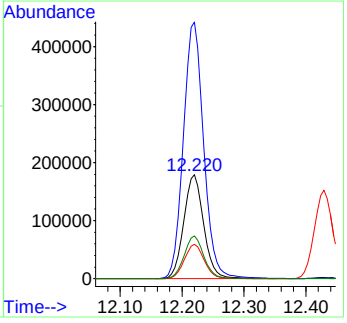


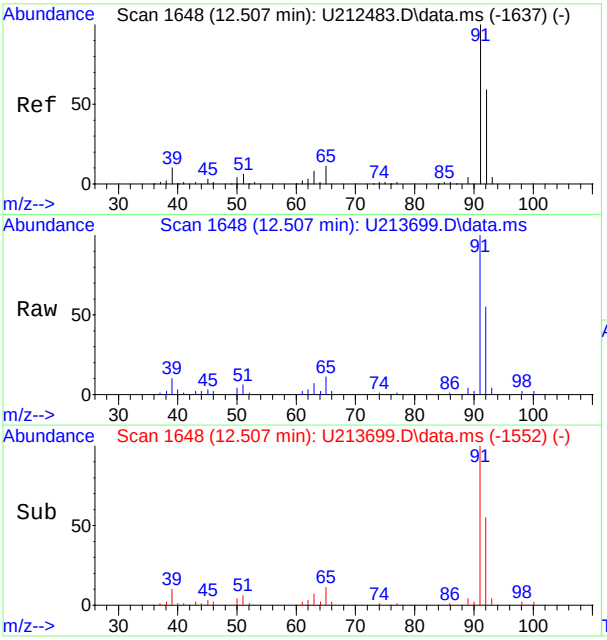


#73
4-methyl-2-pentanone
Concen: 251.10 ug/L
RT: 12.220 min Scan# 1593
Delta R.T. 0.002 min
Lab File: U213699.D
Acq: 12 Apr 2017 2:20 pm

Tgt Ion: 58 Resp: 401012

Ion	Ratio	Lower	Upper
58	100		
43	246.8	243.3	283.3
100	33.0	14.8	54.8
85	41.2	22.8	62.8

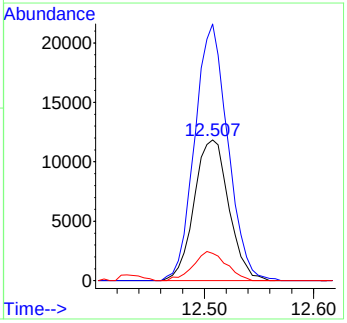


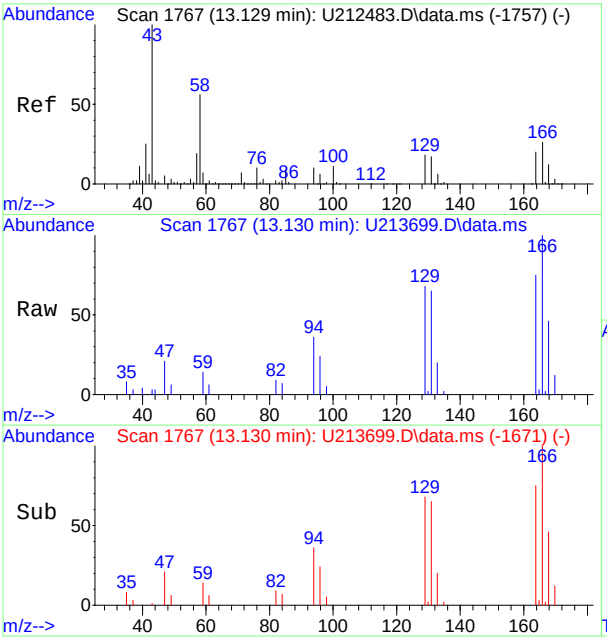


#77
toluene
Concen: 3.40 ug/L
RT: 12.507 min Scan# 1648
Delta R.T. 0.001 min
Lab File: U213699.D
Acq: 12 Apr 2017 2:20 pm

Tgt Ion: 92 Resp: 26254

Ion	Ratio	Lower	Upper
92	100		
91	182.6	148.6	188.6
65	19.3	0.0	39.2

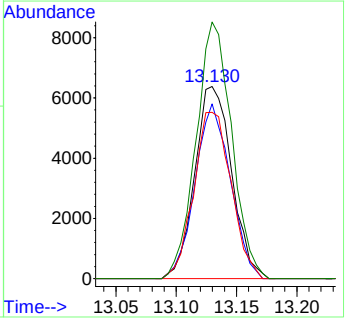




#82
tetrachloroethene
Concen: 4.89 ug/L
RT: 13.130 min Scan# 1767
Delta R.T. 0.002 min
Lab File: U213699.D
Acq: 12 Apr 2017 2:20 pm

Tgt Ion:164 Resp: 13594

Ion	Ratio	Lower	Upper
164	100		
129	90.9	60.1	120.1
131	86.6	56.1	116.1
166	133.6	101.2	161.2

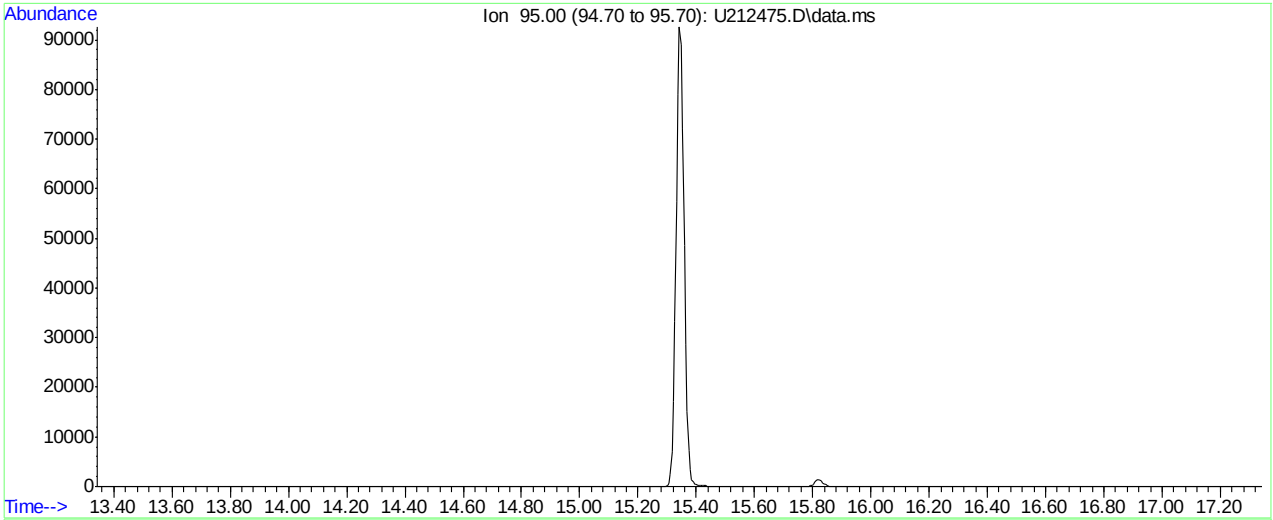


BFB

Data File : [redacted]D
Acq On : 3 Mar 2017 12:40 pm
Sample : bfb
Misc : ms13029,vu9728,w,,,,1
MS Integration Params: RTEINT.P

Vial: 3
Operator: [redacted]
Inst : MSU
Multiplr: 1.00

Method : [redacted]MU9728.M (RTE Integrator)
Title : SW-846 8260C, ZB624 60m x 250um x 1.40um



AutoFind: Scans 2189, 2190, 2191; Background Corrected with Scan 2179

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.4	15956	PASS
75	95	30	60	46.6	40480	PASS
95	95	100	100	100.0	86874	PASS
96	95	5	9	6.5	5662	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	93.0	80800	PASS
175	174	5	9	7.9	6379	PASS
176	174	95	101	97.1	78480	PASS
177	176	5	9	6.7	5296	PASS

U212475.D MU9728.M Mon Mar 06 08:27:09 2017

SGS ACCUTEST

Average of 15.338 to 15.348 min.: U212475.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	760	51.00	4622	68.00	7809	79.95	554
37.05	3963	52.05	237	69.00	7843	80.90	1823
38.05	3453	55.05	271	70.00	601	81.95	368
39.00	1402	56.05	1198	72.00	408	87.00	3560
43.10	52	57.00	2024	73.00	3441	88.00	3662
44.00	435	60.00	716	74.00	13487	90.95	263
45.00	811	61.00	3557	75.00	40480	92.00	2047
47.00	1056	62.00	3565	76.00	3454	93.00	3405
47.95	473	63.00	2537	77.00	535	94.00	9362
49.00	3346	64.05	263	78.00	406	95.00	86874
50.00	15956	67.00	256	78.90	1746	96.00	5662

Average of 15.338 to 15.348 min.: U212475.D\data.ms
bfb
Modified:subtracted

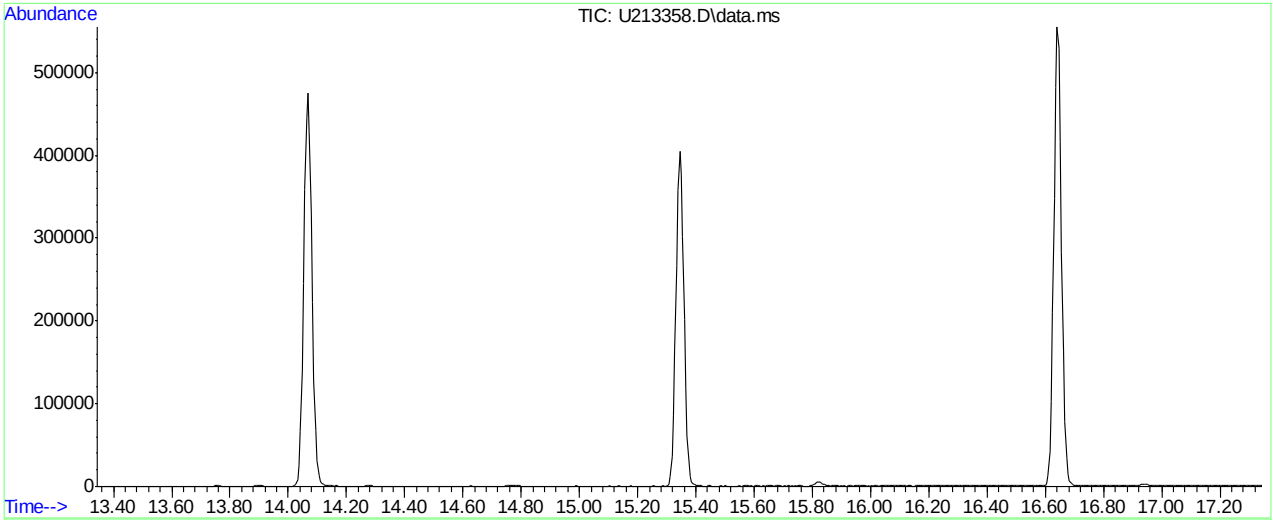
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
97.05	128	130.85	116	175.90	78480		
103.90	321	134.85	107	176.90	5296		
104.90	53	140.90	761	177.95	173		
105.90	332	142.90	820	207.00	110		
115.90	247	145.90	51				
116.90	445	147.85	202				
117.85	274	148.90	53				
118.95	360	154.95	264				
127.90	319	156.90	161				
128.90	55	173.90	80800				
129.90	270	174.90	6379				

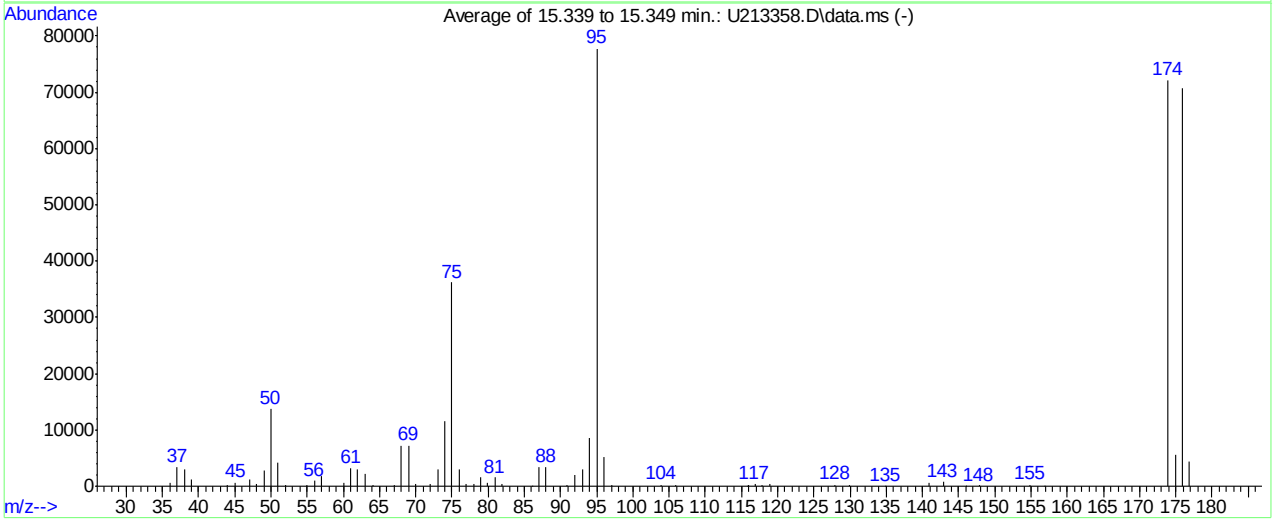
SGS ACCUTEST

BFB

Data File : [redacted]U213358.D Vial: 1
Acq On : 1 Apr 2017 9:18 am Operator: [redacted]
Sample : bfb Inst : MSU
Misc : ms14105,vu9765,w,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : [redacted]MU9728.M (RTE Integrator)
Title : SW-846 8260C, ZB624 60m x 250um x 1.40um





AutoFind: Scans 2189, 2190, 2191; Background Corrected with Scan 2179

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.6	13705	PASS
75	95	30	60	46.5	36168	PASS
95	95	100	100	100.0	77784	PASS
96	95	5	9	6.8	5266	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	92.8	72194	PASS
175	174	5	9	7.8	5630	PASS
176	174	95	101	97.9	70650	PASS
177	176	5	9	6.4	4487	PASS

U213358.D MU9728.M Mon Apr 03 10:16:54 2017

SGS ACCUTEST

Average of 15.339 to 15.349 min.: U213358.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	643	52.05	150	69.00	7218	80.90	1573
37.00	3433	55.00	183	69.95	501	81.90	350
38.05	2960	56.00	937	72.00	444	86.10	52
39.05	1148	57.00	1756	73.00	3092	86.95	3453
43.95	249	60.00	588	74.00	11526	87.95	3488
45.05	622	61.00	3267	75.00	36168	90.95	227
47.00	1194	62.00	3090	76.00	3077	92.00	1951
48.00	430	63.00	2213	77.00	507	93.00	2900
49.00	2811	64.05	214	78.00	382	94.00	8485
50.00	13705	67.00	113	78.90	1538	95.00	77784
51.00	4132	68.00	7080	79.95	528	96.00	5266

Average of 15.339 to 15.349 min.: U213358.D\data.ms
bfb
Modified:subtracted

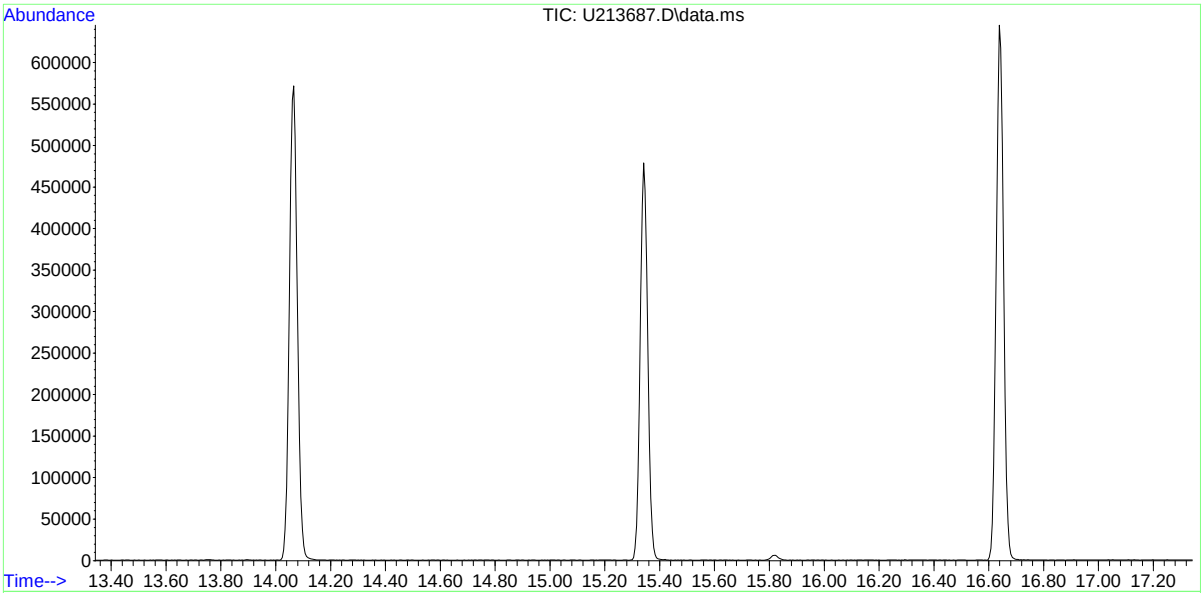
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
97.00	198	140.85	693				
103.90	275	142.90	706				
105.85	259	146.00	52				
115.80	69	147.85	183				
115.95	171	154.90	204				
116.85	398	156.80	56				
117.85	218	173.90	72194				
118.85	380	174.90	5630				
127.90	294	175.90	70650				
129.85	244	176.90	4487				
134.90	50						

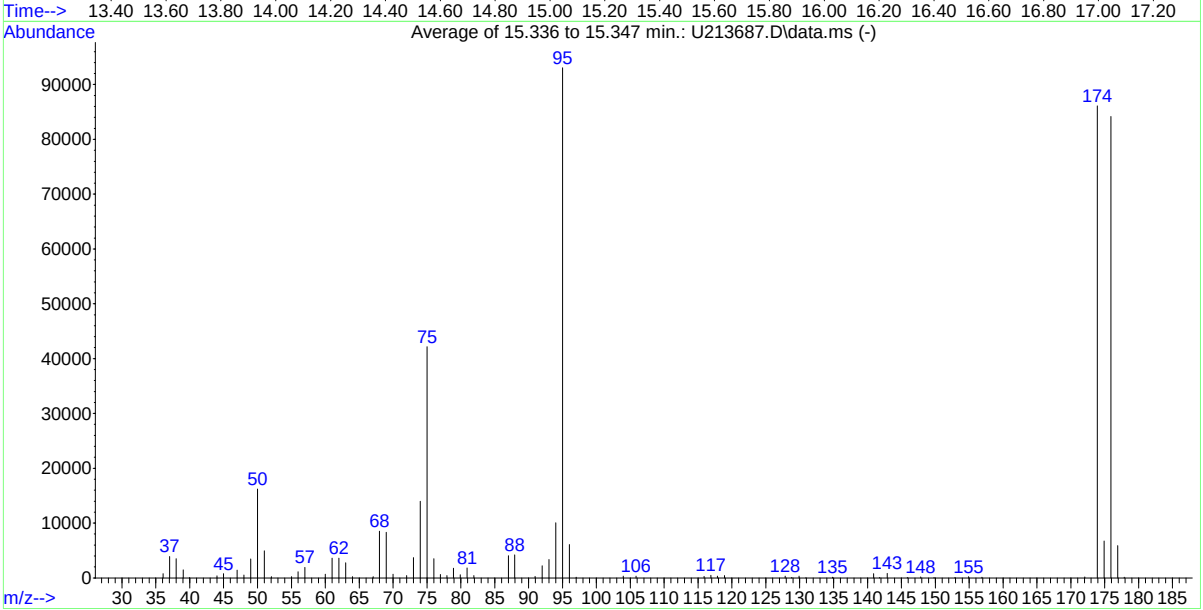
SGS ACCUTEST

BFB

Data File : [redacted]U\vu9775-9776\U213687.D Vial: 2
Acq On : 12 Apr 2017 7:32 am Operator: [redacted]
Sample : bfb Inst : MSU
Misc : ms14578,vu9776,w,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : [redacted]MU9728.M (RTE Integrator)
Title : SW-846 8260C, ZB624 60m x 250um x 1.40um





AutoFind: Scans 2189, 2190, 2191; Background Corrected with Scan 2179

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.4	16201	PASS
75	95	30	60	45.3	42163	PASS
95	95	100	100	100.0	93043	PASS
96	95	5	9	6.5	6085	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	92.5	86107	PASS
175	174	5	9	7.8	6727	PASS
176	174	95	101	97.8	84171	PASS
177	176	5	9	7.0	5887	PASS

U213687.D MU9728.M Wed Apr 12 16:10:19 2017

SGS ACCUTEST

Average of 15.336 to 15.347 min.: U213687.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.05	760	51.00	4936	68.00	8498	79.90	554
37.05	3883	52.05	247	69.00	8329	80.90	1792
38.00	3519	55.00	207	70.00	670	81.90	430
39.05	1468	56.00	1136	72.00	440	87.00	4047
39.95	43	57.00	1924	73.00	3690	87.95	4217
44.00	399	60.00	684	74.00	13958	90.95	267
45.00	779	61.00	3582	75.00	42163	92.00	2193
47.00	1408	62.00	3602	76.00	3513	93.00	3343
48.00	536	63.00	2748	77.00	600	94.00	10072
49.00	3438	64.00	206	77.95	433	95.00	93043
50.00	16201	67.05	223	78.90	1788	96.00	6085

Average of 15.336 to 15.347 min.: U213687.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
97.00	130	134.85	118	173.90	86107		
103.95	312	140.90	781	174.90	6727		
105.85	329	141.80	52	175.90	84171		
115.90	296	142.90	817	176.90	5887		
116.90	458	145.90	54	177.90	148		
117.85	313	147.85	154				
118.90	410	149.80	59				
127.85	318	152.90	53				
128.80	63	154.90	250				
129.90	316	156.90	106				
130.90	51	172.05	174				

Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu 03/06/17 15:57

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\
Data File : U212476.D
Acq On : 3 Mar 2017 1:12 pm
Operator : gabriela
Sample : ic9728-0.2
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 06 10:21:15 2017
Quant Method : C:\MSDCHEM\1\METHODS\MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:41:00 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.670	65	208593	500.00	ug/L	0.00
5) pentafluorobenzene	9.830	168	268929	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.750	114	379144	50.00	ug/L	0.00
75) chlorobenzene-d5	14.066	117	353029	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.645	152	197919	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.898	113	112474	49.68	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 99.36%			
55) 1,2-dichloroethane-d4 (s)	10.322	65	132605	51.14	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 102.28%			
76) toluene-d8 (s)	12.429	98	439053	50.49	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 100.98%			
101) 4-bromofluorobenzene (s)	15.343	95	170574	49.26	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 98.52%			
Target Compounds						Qvalue
14) vinyl bromide	6.022	106	838	0.20	ug/L #	81
19) 1,1-dichloroethene	6.980	96	596	0.22	ug/L #	55
23) carbon disulfide	7.414	76	2127	0.24	ug/L	77
26) methyl tert butyl ether	7.994	73	1647	0.19	ug/L	83
32) 1,1-dichloroethane	8.617	63	961	0.18	ug/L #	50
38) cis-1,2-dichloroethene	9.344	96	595	0.19	ug/L #	57
51) carbon tetrachloride	10.149	117	655	0.17	ug/L #	90
58) benzene	10.384	78	2476	0.22	ug/L	92
63) trichloroethene	11.096	95	572	0.19	ug/L	85
66) 2-chloroethyl vinyl ether	11.901	63	2694	1.29	ug/L	98
70) bromodichloromethane	11.655	83	753	0.19	ug/L	96
72) cis-1,3-dichloropropene	12.136	75	1009	0.19	ug/L	95
73) 4-methyl-2-pentanone	12.225	58	1669	1.16	ug/L #	84
77) toluene	12.508	92	1434	0.20	ug/L	99
78) ethyl methacrylate	12.707	69	865	0.19	ug/L	80
79) trans-1,3-dichloropropene	12.727	75	849	0.18	ug/L #	65
80) 1,1,2-trichloroethane	12.958	83	502	0.21	ug/L	87
81) 2-hexanone	13.141	58	1633	1.09	ug/L #	69
82) tetrachloroethene	13.130	164	459m	0.17	ug/L	
83) 1,3-dichloropropane	13.162	76	785	0.17	ug/L #	50
86) 1,2-dibromoethane	13.617	107	557	0.18	ug/L	78
88) n-butyl ether	13.977	57	2572	0.21	ug/L #	93
89) chlorobenzene	14.103	112	1770	0.21	ug/L	86
90) 1,1,1,2-tetrachloroethane	14.171	131	507	0.17	ug/L	89
91) ethylbenzene	14.150	91	2902	0.21	ug/L	94
92) m,p-xylene	14.270	106	2106	0.39	ug/L	90
93) o-xylene	14.731	106	1113	0.21	ug/L	88
94) styrene	14.746	104	1830	0.20	ug/L	91
95) butyl acrylate	14.532	55	1304	0.20	ug/L #	97
97) isopropylbenzene	15.107	105	3042	0.22	ug/L	94
102) bromobenzene	15.562	156	697	0.18	ug/L	95
103) 1,1,2,2-tetrachloroethane	15.463	83	845	0.20	ug/L	84
106) n-propylbenzene	15.562	91	3867	0.23	ug/L	96

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212476.D
Acq On : 3 Mar 2017 1:12 pm
Operator : [redacted]
Sample : ic9728-0.2
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 06 10:21:15 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:41:00 2017
Response via : Initial Calibration

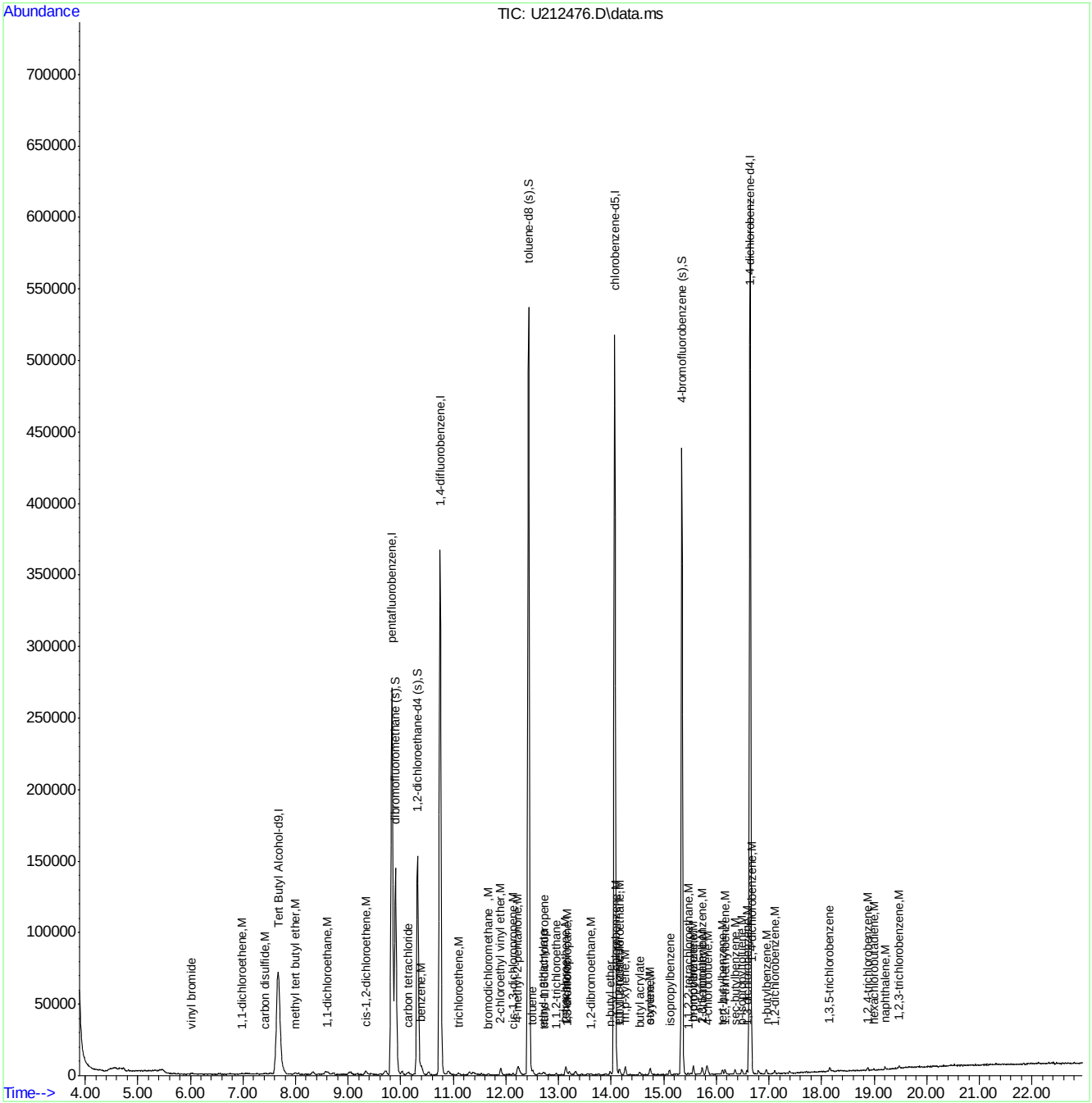
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
107) 2-chlorotoluene	15.740	126	741	0.21 ug/L #	64
108) 4-chlorotoluene	15.845	91	2334	0.23 ug/L	85
109) 1,3,5-trimethylbenzene	15.730	105	2642	0.22 ug/L	95
110) tert-butylbenzene	16.122	119	2480	0.24 ug/L	96
111) 1,2,4-trimethylbenzene	16.169	105	2702	0.22 ug/L	93
112) sec-butylbenzene	16.357	105	3486	0.22 ug/L	94
113) 1,3-dichlorobenzene	16.582	146	1605	0.21 ug/L	92
114) p-isopropyltoluene	16.488	119	3214	0.24 ug/L	98
115) 1,4-dichlorobenzene	16.676	146	1612	0.22 ug/L	82
117) 1,2-dichlorobenzene	17.116	146	1473	0.21 ug/L	85
118) n-butylbenzene	16.943	92	1475	0.21 ug/L	80
120) 1,3,5-trichlorobenzene	18.156	180	1398	0.24 ug/L	82
122) 1,2,4-trichlorobenzene	18.873	180	1123	0.21 ug/L	87
123) hexachlorobutadiene	18.993	225	640	0.22 ug/L	84
124) naphthalene	19.208	128	2569	0.21 ug/L	98
125) 1,2,3-trichlorobenzene	19.474	180	924	0.21 ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212476.D
Acq On : 3 Mar 2017 1:12 pm
Operator : [redacted]
Sample : ic9728-0.2
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 06 10:21:15 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:41:00 2017
Response via : Initial Calibration



MU9728.M Mon Mar 06 14:55:06 2017 Page: 3

Manual Integration Approval Summary

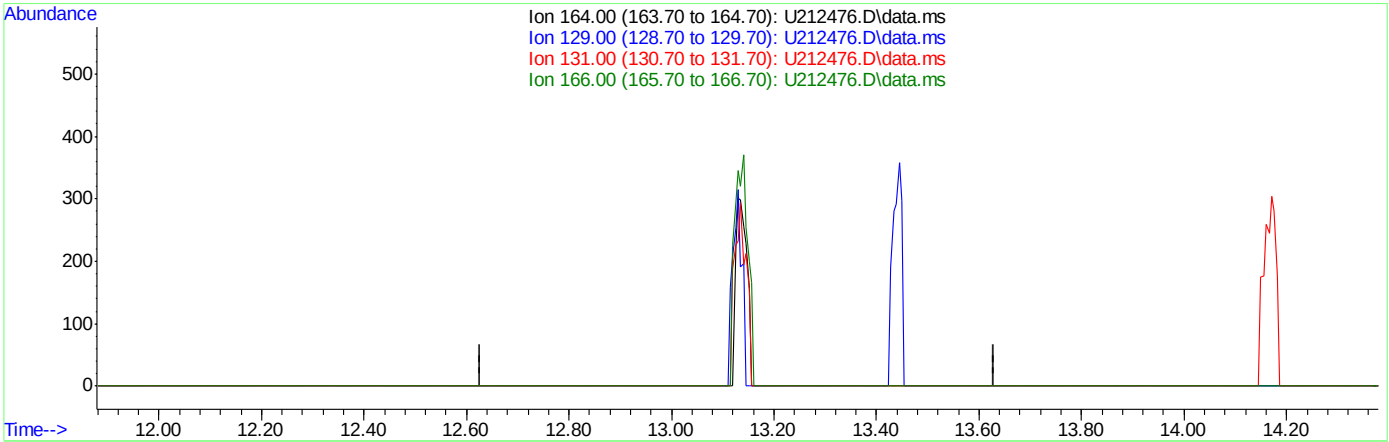
Sample Number:	VU9728-IC9728	**Method:**	SW846 8260C
Lab FileID:	U212476.D	**Analyst approved:**	03/06/17 11:19 [redacted]
Injection Time:	03/03/17 13:12	**Supervisor approved:**	03/06/17 15:57 [redacted]

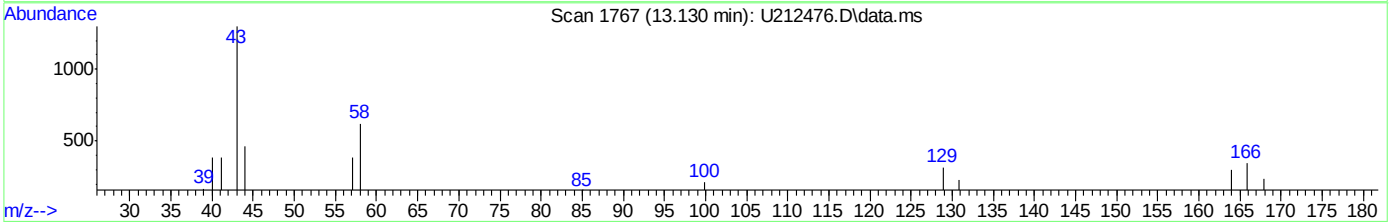
Parameter	CAS	Sig#	R.T. (min.)	Reason
Tetrachloroethene	127-18-4		13.13	Missed peak

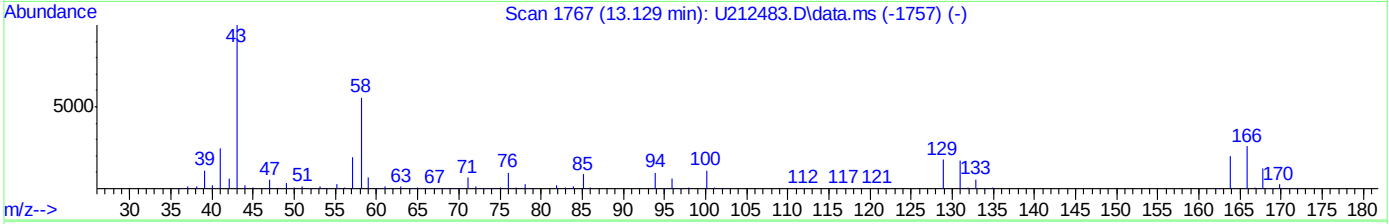
Quantitation Report (Qedit)

Data Path : [redacted]
Data File : U212476.D
Acq On : 3 Mar 2017 1:12 pm
Operator : [redacted]
Sample : ic9728-0.2
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 06 08:46:47 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:41:00 2017
Response via : Initial Calibration







TIC: U212476.D\data.ms

(82) tetrachloroethene (M)

13.129min (-13.129) 0.00ug/L

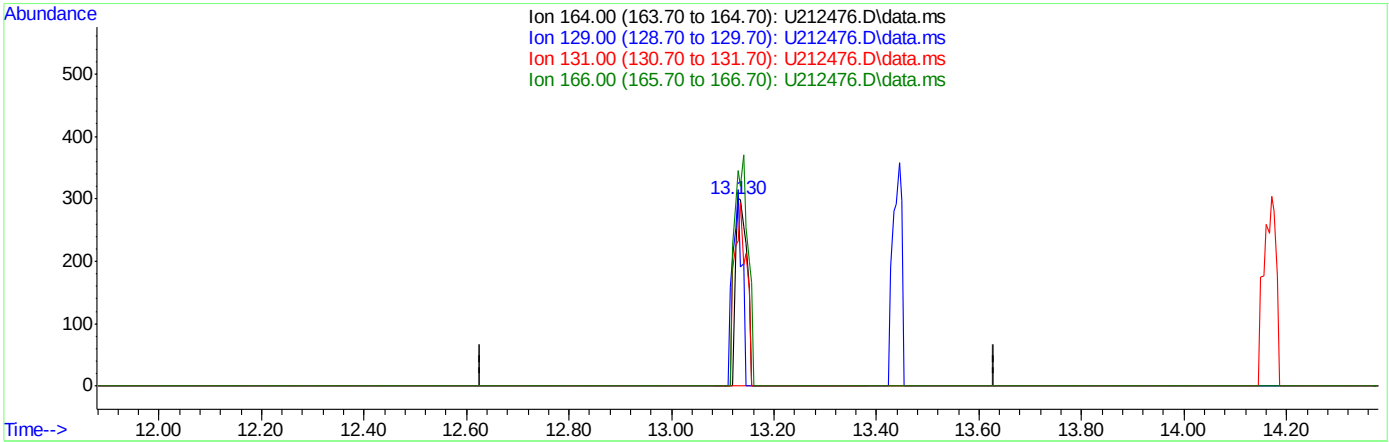
response 0

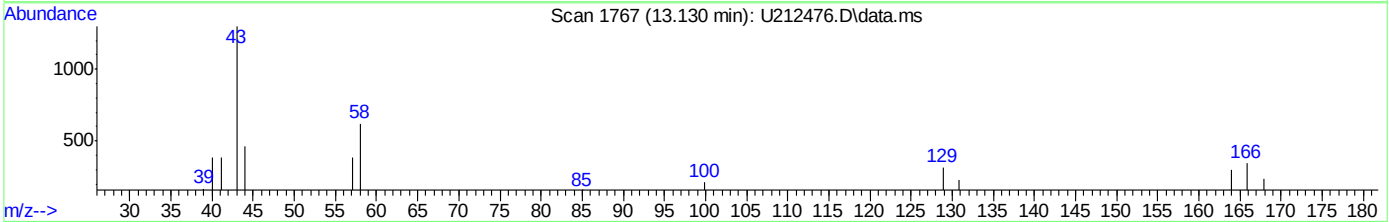
Ion	Exp%	Act%
164.00	100	0.00
129.00	90.10	0.00#
131.00	86.10	0.00#
166.00	131.20	0.00#

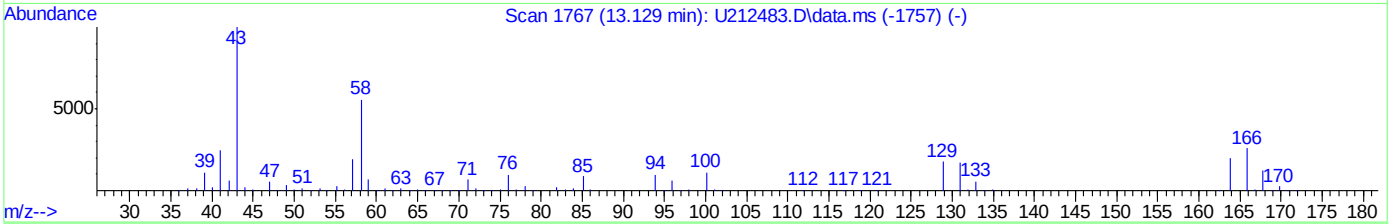
Quantitation Report (Qedit)

Data Path : [redacted]
Data File : U212476.D
Acq On : 3 Mar 2017 1:12 pm
Operator : [redacted]
Sample : ic9728-0.2
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 06 08:49:48 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:41:00 2017
Response via : Initial Calibration







TIC: U212476.D\data.ms

(82) tetrachloroethene (M)

13.130min (+0.001) 0.17ug/L m

response 459

Ion	Exp%	Act%
164.00	100	100
129.00	90.10	105.00
131.00	86.10	77.33
166.00	131.20	115.33

U212476.D edits: tetrachloroethene

Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu 03/06/17 15:57

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212477.D
Acq On : 3 Mar 2017 1:41 pm
Operator : [redacted]
Sample : ic9728-0.5
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 06 10:21:36 2017
Quant Method : C:\MSDCHEM\1\METHODS\MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:51:03 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Tert Butyl Alcohol-d9	7.669	65	215718	500.00	ug/L		0.00
5) pentafluorobenzene	9.829	168	271027	50.00	ug/L		0.00
54) 1,4-difluorobenzene	10.745	114	379175	50.00	ug/L		0.00
75) chlorobenzene-d5	14.066	117	352102	50.00	ug/L		0.00
100) 1,4-dichlorobenzene-d4	16.644	152	200094	50.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	9.897	113	113013	49.69	ug/L		0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 99.38%				
55) 1,2-dichloroethane-d4 (s)	10.316	65	131913	50.29	ug/L		0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 100.58%				
76) toluene-d8 (s)	12.429	98	442300	50.75	ug/L		0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 101.50%				
101) 4-bromofluorobenzene (s)	15.342	95	174723	50.28	ug/L		0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 100.56%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.774	59	1234	2.06	ug/L		69
9) chloromethane	4.542	50	2437	0.52	ug/L		92
10) vinyl chloride	4.824	62	2086	0.45	ug/L		75
11) bromomethane	5.488	94	1306	0.53	ug/L		85
12) chloroethane	5.666	64	846	0.40	ug/L	#	44
13) trichlorofluoromethane	6.163	101	1658m	0.38	ug/L		
14) vinyl bromide	6.027	106	1897	0.45	ug/L	#	82
15) ethyl ether	6.540	74	576	0.33	ug/L	#	36
16) 2-chloropropane	6.749	43	2152	0.47	ug/L	#	58
19) 1,1-dichloroethene	6.984	96	1277	0.44	ug/L		85
20) acetone	7.068	58	940m	2.83	ug/L		
22) iodomethane	7.261	142	2111	0.40	ug/L		76
23) carbon disulfide	7.418	76	4025	0.41	ug/L		71
24) methylene chloride	7.716	84	1317	0.44	ug/L		88
26) methyl tert butyl ether	7.988	73	4247	0.49	ug/L		94
27) trans-1,2-dichloroethene	8.056	96	1283	0.45	ug/L		84
28) hexane	8.318	57	2322	0.56	ug/L		88
29) di-isopropyl ether	8.569	45	4962	0.48	ug/L	#	62
30) ethyl tert-butyl ether	9.029	59	4537	0.48	ug/L		85
31) 2-butanone	9.327	72	875	2.01	ug/L	#	53
32) 1,1-dichloroethane	8.616	63	2362	0.46	ug/L		89
33) chloroprene	8.715	53	2148	0.46	ug/L		72
37) 2,2-dichloropropane	9.343	77	2005	0.52	ug/L		89
38) cis-1,2-dichloroethene	9.338	96	1388	0.46	ug/L		86
40) propionitrile	9.432	54	2318	4.22	ug/L		73
41) bromochloromethane	9.646	128	565	0.36	ug/L	#	61
43) chloroform	9.704	83	2811	0.57	ug/L		96
44) tert-butyl Formate	9.725	59	1362	0.43	ug/L	#	78
45) iso-butyl alcohol	10.143	43	1593	6.57	ug/L		84
48) 1,1,1-trichloroethane	9.950	97	1722	0.41	ug/L		86
49) cyclohexane	10.023	84	1864	0.48	ug/L	#	90
50) 1,1-dichloropropene	10.117	75	1677	0.41	ug/L		93
51) carbon tetrachloride	10.148	117	1575	0.44	ug/L	#	78

SGS ACCUTEST JC40923

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Operator : [redacted]
Sample : ic9728-0.5
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 06 10:21:36 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:51:03 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
52) tert amyl alcohol	10.263	73	579	2.03 ug/L		87
56) iso-octane	10.373	57	5475	0.53 ug/L		93
57) n-butyl alcohol	10.896	56	3660	20.03 ug/L		93
58) benzene	10.394	78	5382	0.46 ug/L		97
59) tert-amyl methyl ether	10.405	73	4553	0.52 ug/L		94
60) heptane	10.530	57	1176	0.52 ug/L		90
61) 1,2-dichloroethane	10.410	62	1791	0.47 ug/L		82
62) ethyl acrylate	11.095	55	2022	0.45 ug/L		74
63) trichloroethene	11.084	95	1330	0.46 ug/L	#	63
64) methylcyclohexane	11.309	83	2218	0.39 ug/L		79
66) 2-chloroethyl vinyl ether	11.900	63	4466	1.86 ug/L		98
68) 1,2-dichloropropane	11.377	63	1475	0.48 ug/L		87
69) dibromomethane	11.540	93	744	0.39 ug/L		75
70) bromodichloromethane	11.660	83	1774	0.46 ug/L		89
71) epichlorohydrin	12.052	57	1157	2.82 ug/L	#	55
72) cis-1,3-dichloropropene	12.136	75	2161	0.42 ug/L		94
73) 4-methyl-2-pentanone	12.225	58	3541	2.46 ug/L		94
74) 3-methyl-1-butanol	12.261	55	2612	1.26 ug/L		89
77) toluene	12.512	92	3172	0.45 ug/L		99
78) ethyl methacrylate	12.701	69	2011	0.46 ug/L		85
79) trans-1,3-dichloropropene	12.722	75	1935	0.44 ug/L		86
80) 1,1,2-trichloroethane	12.952	83	1102	0.45 ug/L		92
81) 2-hexanone	13.135	58	3591	2.30 ug/L		93
82) tetrachloroethene	13.129	164	1153m	0.47 ug/L		
83) 1,3-dichloropropane	13.150	76	2075	0.49 ug/L		88
84) butyl acetate	13.197	56	1298	0.52 ug/L	#	53
85) dibromochloromethane	13.438	129	1403	0.42 ug/L		94
86) 1,2-dibromoethane	13.605	107	1298	0.44 ug/L		87
87) 3,3-dimethyl-1-Butanol	13.318	57	2602	4.05 ug/L	#	89
88) n-butyl ether	13.982	57	5685	0.45 ug/L	#	98
89) chlorobenzene	14.102	112	3913	0.46 ug/L		88
90) 1,1,1,2-tetrachloroethane	14.170	131	1268	0.46 ug/L		84
91) ethylbenzene	14.149	91	6432	0.46 ug/L		96
92) m,p-xylene	14.270	106	4856	0.91 ug/L		99
93) o-xylene	14.735	106	2536	0.46 ug/L		92
94) styrene	14.756	104	4059	0.44 ug/L		95
95) butyl acrylate	14.536	55	3055	0.47 ug/L	#	97
96) bromoform	15.049	173	1153	0.42 ug/L		93
97) isopropylbenzene	15.106	105	6433	0.44 ug/L		95
98) cis-1,4-dichloro-2-butene	15.206	88	463	0.33 ug/L		90
102) bromobenzene	15.567	156	1871	0.50 ug/L		83
103) 1,1,2,2-tetrachloroethane	15.462	83	2028	0.47 ug/L		93
104) trans-1,4-dichloro-2-b...	15.499	53	511	0.40 ug/L		92
105) 1,2,3-trichloropropane	15.546	110	497	0.44 ug/L		93
106) n-propylbenzene	15.567	91	7877	0.43 ug/L		98
107) 2-chlorotoluene	15.734	126	1527	0.42 ug/L		98
108) 4-chlorotoluene	15.844	91	4835	0.44 ug/L		97
109) 1,3,5-trimethylbenzene	15.724	105	5479	0.43 ug/L		99
110) tert-butylbenzene	16.121	119	4816	0.42 ug/L		96
111) 1,2,4-trimethylbenzene	16.168	105	5699	0.44 ug/L		89

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Misc : ms13029,vu9728,w,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 06 10:21:36 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:51:03 2017
Response via : Initial Calibration

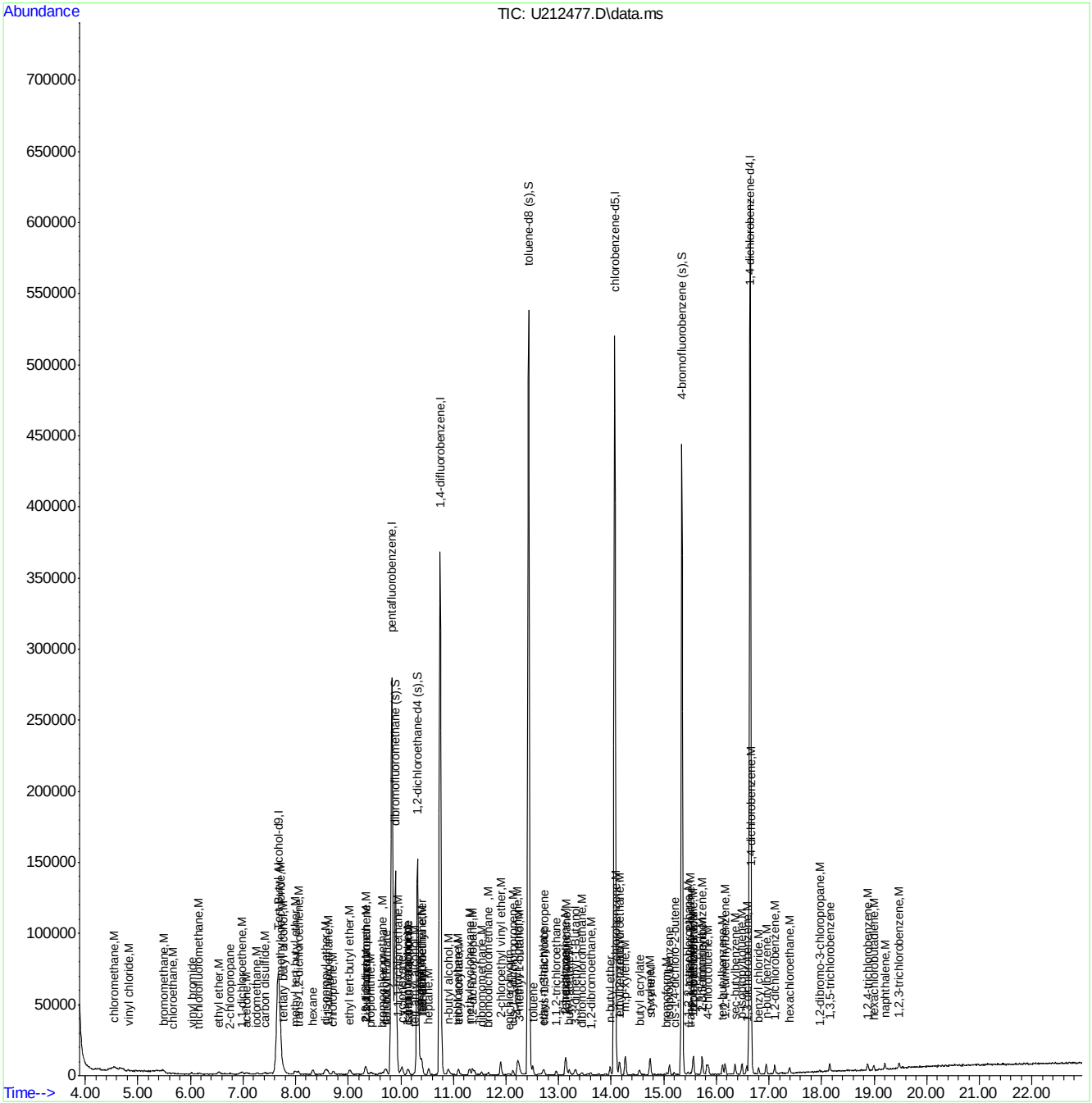
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
112) sec-butylbenzene	16.356	105	7160	0.43	ug/L	96
113) 1,3-dichlorobenzene	16.581	146	3481	0.44	ug/L	96
114) p-isopropyltoluene	16.487	119	6106	0.41	ug/L	96
115) 1,4-dichlorobenzene	16.670	146	3589	0.46	ug/L	92
116) benzyl chloride	16.801	91	4623	0.56	ug/L	99
117) 1,2-dichlorobenzene	17.110	146	3357	0.46	ug/L	93
118) n-butylbenzene	16.947	92	3130	0.43	ug/L	86
119) 1,2-dibromo-3-chloropr...	17.967	157	346	0.31	ug/L	92
120) 1,3,5-trichlorobenzene	18.161	180	2613	0.41	ug/L	99
122) 1,2,4-trichlorobenzene	18.877	180	2398	0.43	ug/L	94
123) hexachlorobutadiene	18.992	225	1313	0.43	ug/L	88
124) naphthalene	19.202	128	5379	0.43	ug/L	95
125) 1,2,3-trichlorobenzene	19.479	180	1918	0.42	ug/L	96
126) hexachloroethane	17.397	201	1002	0.37	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

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Operator : [redacted]
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SGS ACCUTEST

Manual Integration Approval Summary

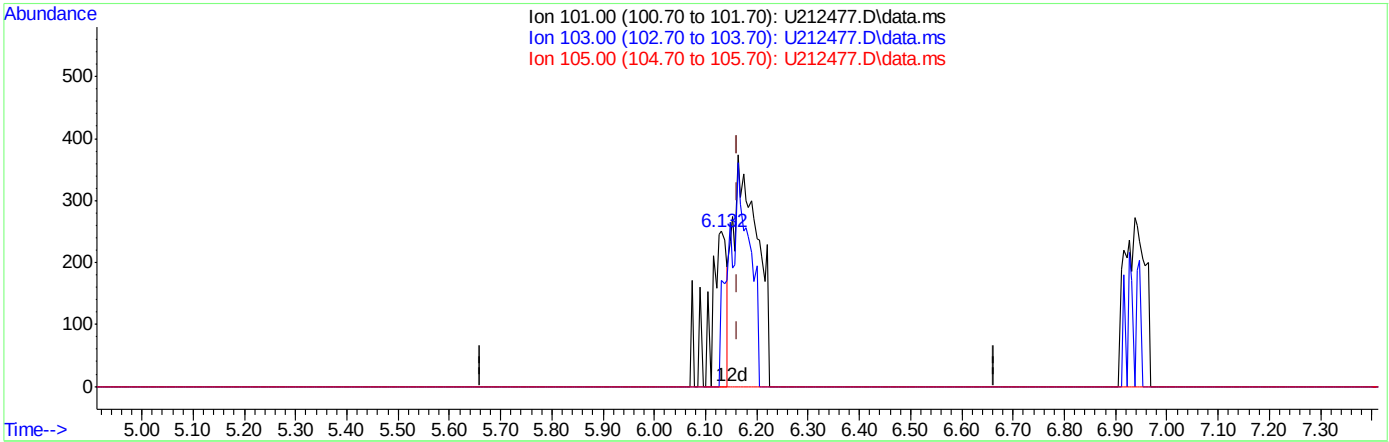
Sample Number:	VU9728-IC9728	**Method:**	SW846 8260C
Lab FileID:	U212477.D	**Analyst approved:**	03/06/17 11:19 [redacted]
Injection Time:	03/03/17 13:41	**Supervisor approved:**	03/06/17 15:57 [redacted]

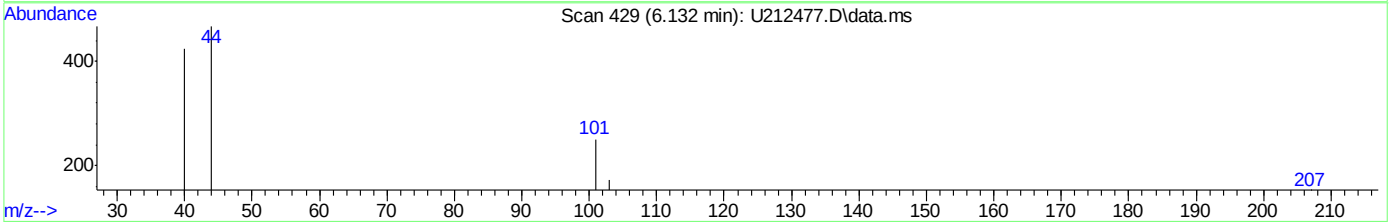
Parameter	CAS	Sig#	R.T. (min.)	Reason
Trichlorofluoromethane	75-69-4		6.16	Split peak
Acetone	67-64-1		7.07	Split peak
Tetrachloroethene	127-18-4		13.13	Missed peak

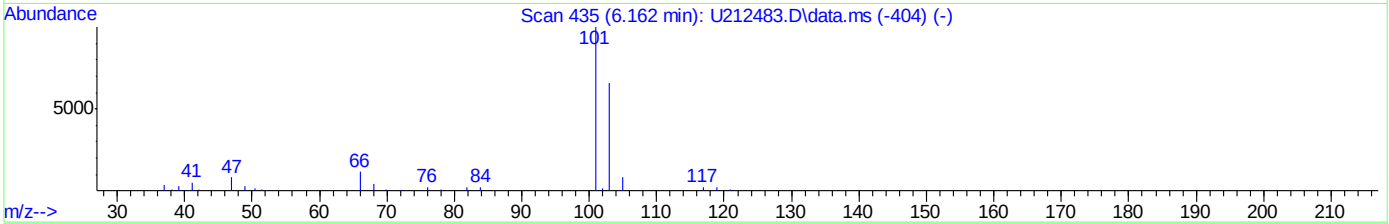
Quantitation Report (Qedit)

Data Path : [redacted]
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Operator : [redacted]
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TIC: U212477.D\data.ms

(13) trichlorofluoromethane (M)

6.132min (-0.031) 0.10ug/L

response 454

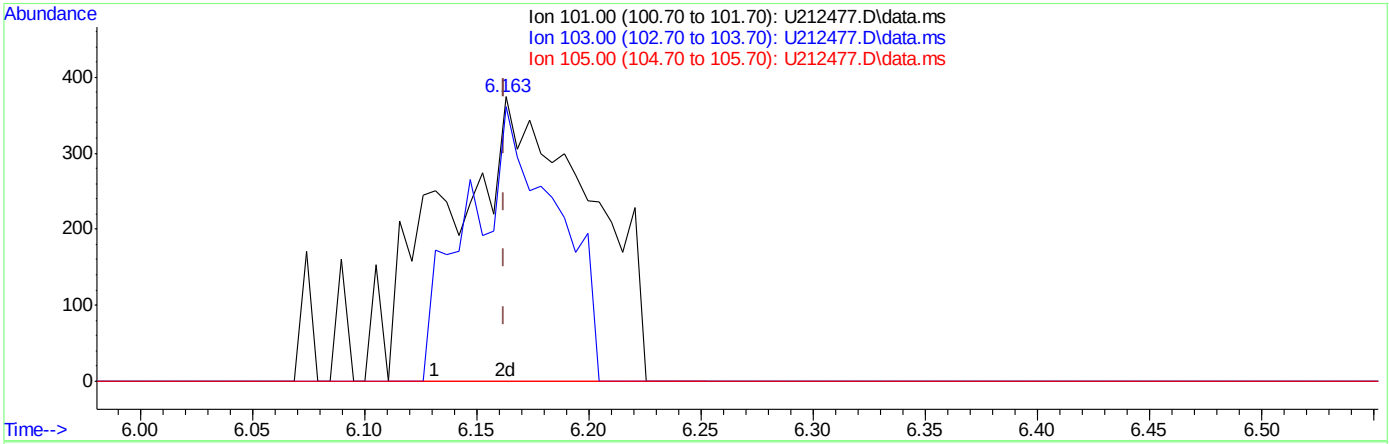
Ion	Exp%	Act%
101.00	100	100
103.00	66.40	68.80
105.00	11.00	0.00
0.00	0.00	0.00

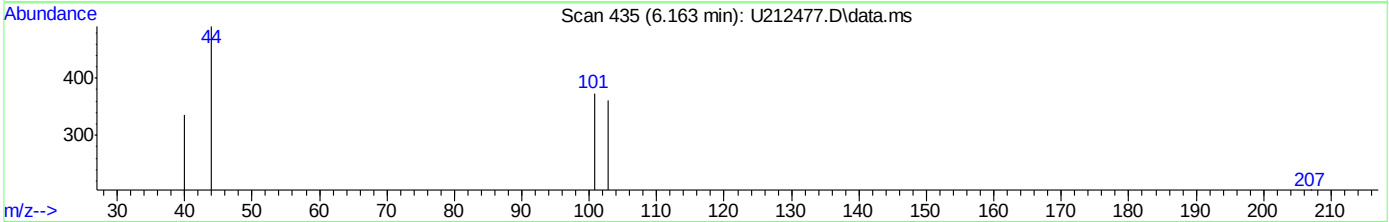
U212477.D edits: trichlorofluoromethane

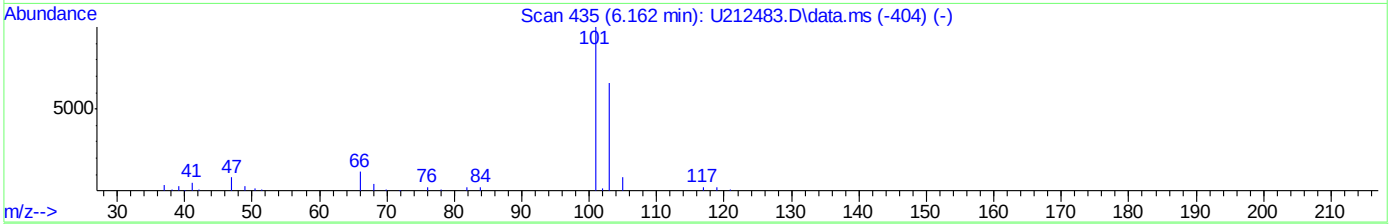
Quantitation Report (Qedit)

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TIC: U212477.D\data.ms

(13) trichlorofluoromethane (M)

6.163min (+0.001) 0.38ug/L m

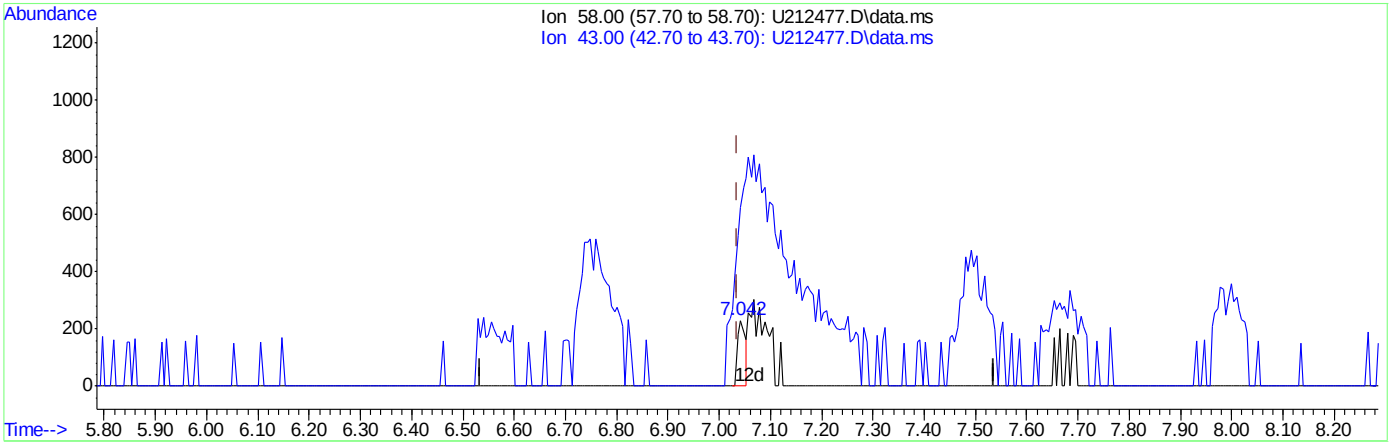
response 1658

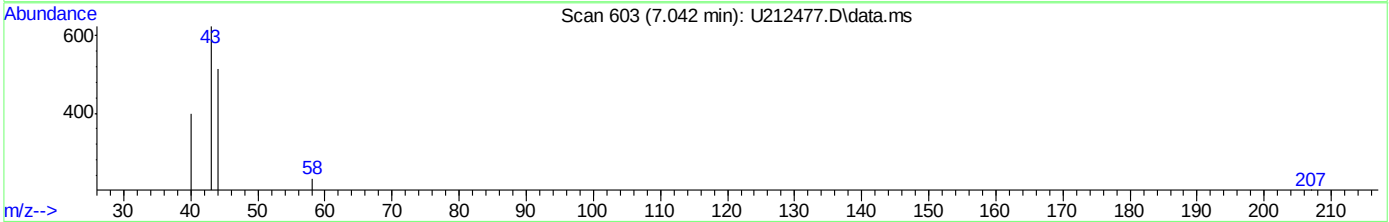
Ion	Exp%	Act%
101.00	100	100
103.00	66.40	96.79#
105.00	11.00	0.00
0.00	0.00	0.00

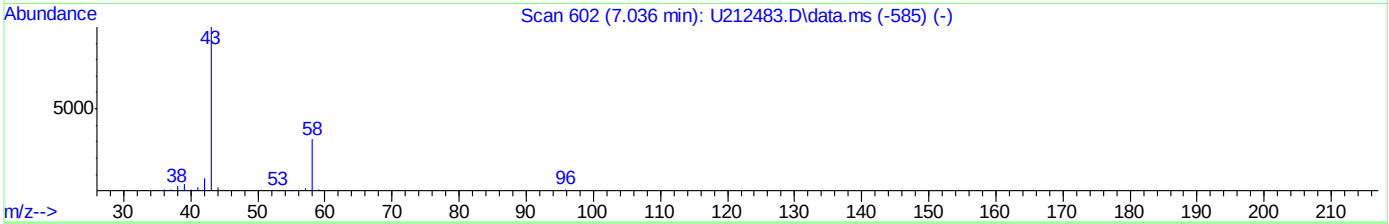
Quantitation Report (Qedit)

Data Path : [redacted]
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TIC: U212477.D\data.ms

(20) acetone (M)

7.042min (+0.006) 0.72ug/L

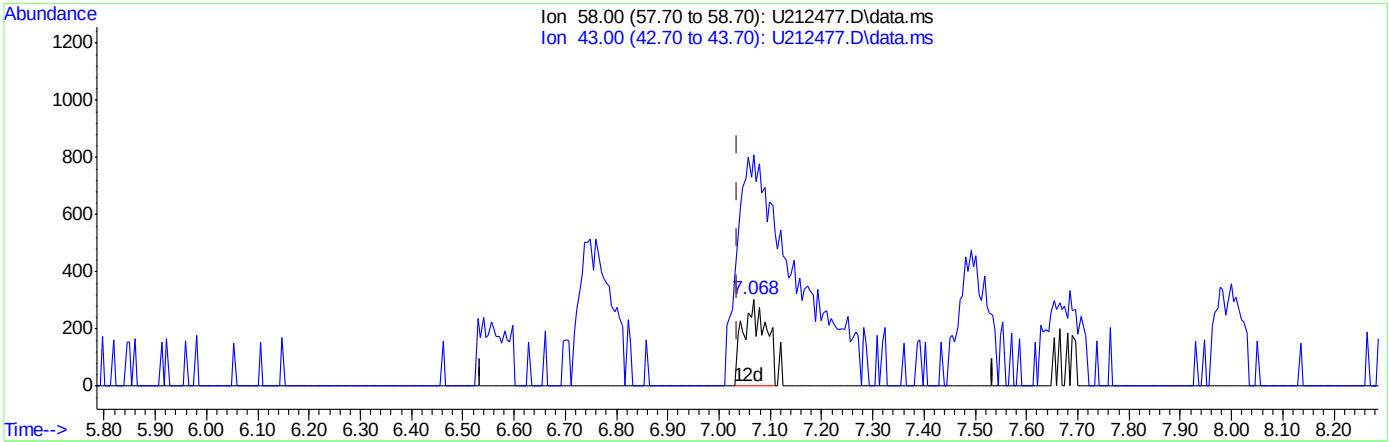
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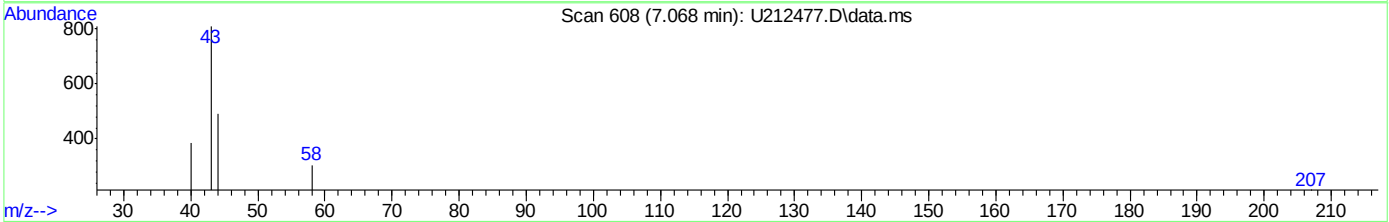
Ion	Exp%	Act%
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43.00	320.10	154.35#
0.00	0.00	0.00
0.00	0.00	0.00

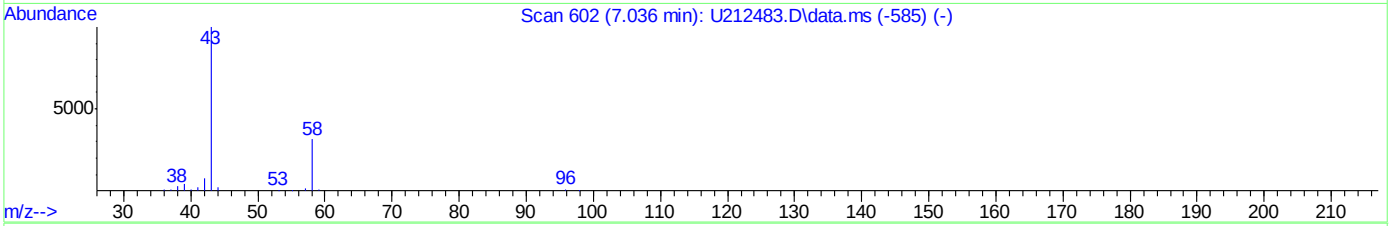
Quantitation Report (Qedit)

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TIC: U212477.D\data.ms

(20) acetone (M)

7.068min (+0.032) 2.83ug/L m

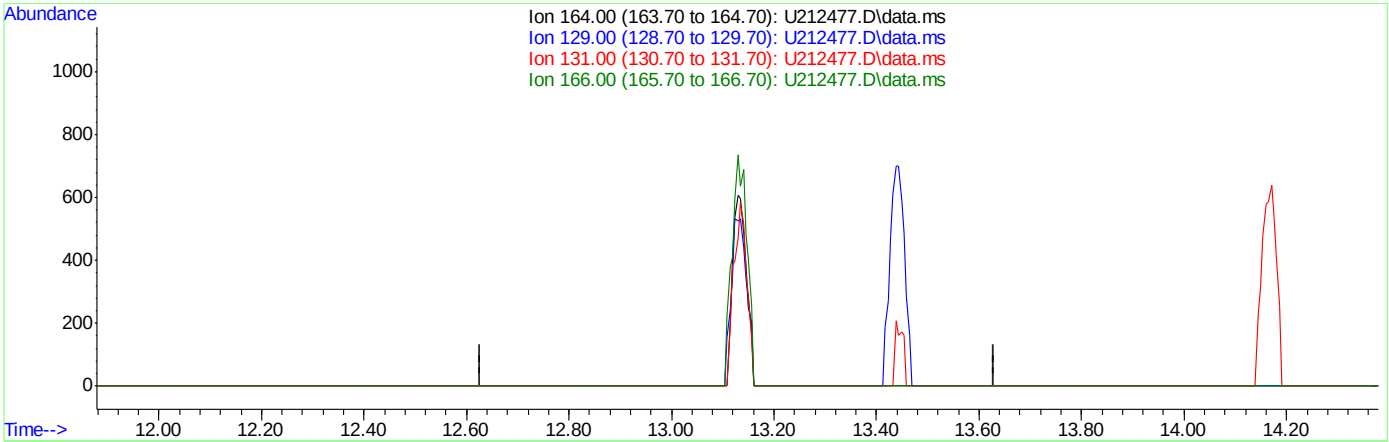
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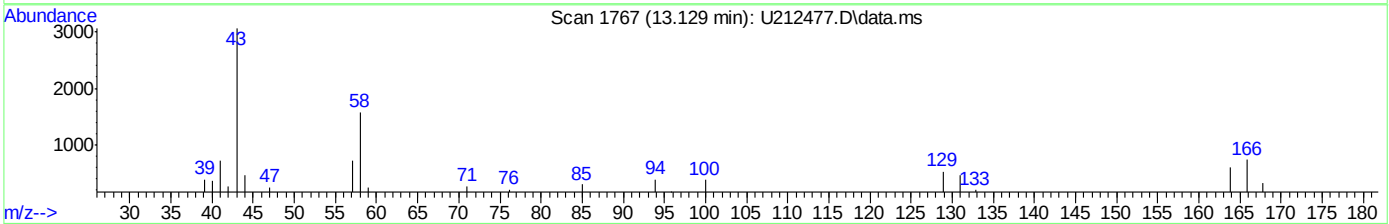
Ion	Exp%	Act%
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43.00	320.10	266.45#
0.00	0.00	0.00
0.00	0.00	0.00

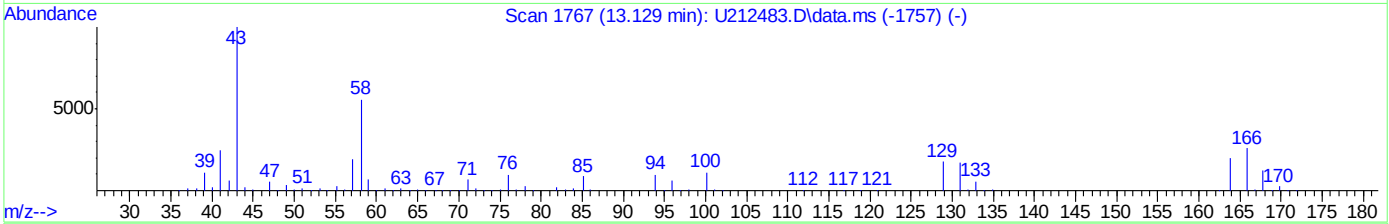
Quantitation Report (Qedit)

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Data File : U212477.D
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Operator : [redacted]
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TIC: U212477.D\data.ms

(82) tetrachloroethene (M)

13.129min (-13.129) 0.00ug/L

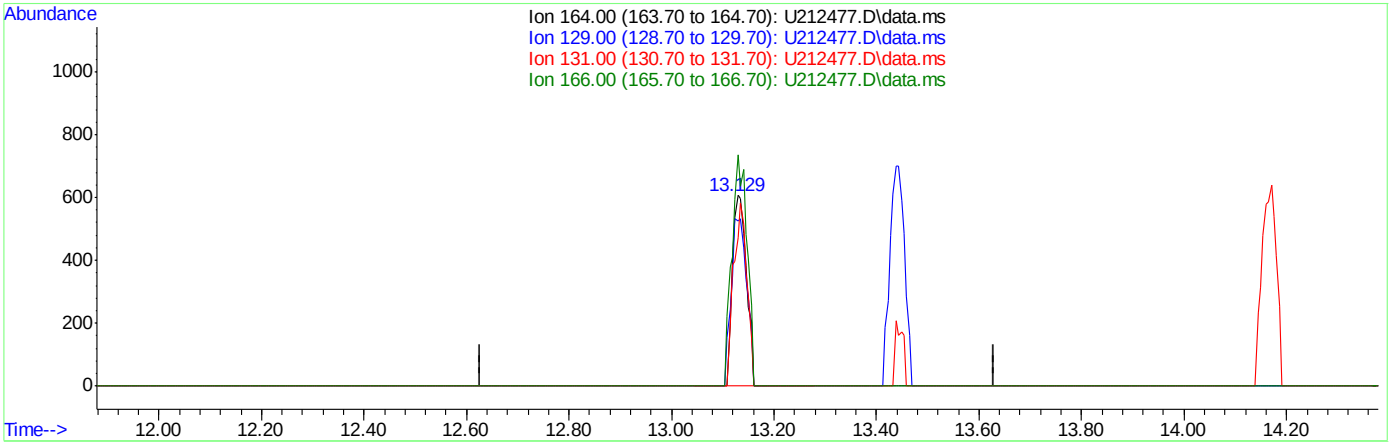
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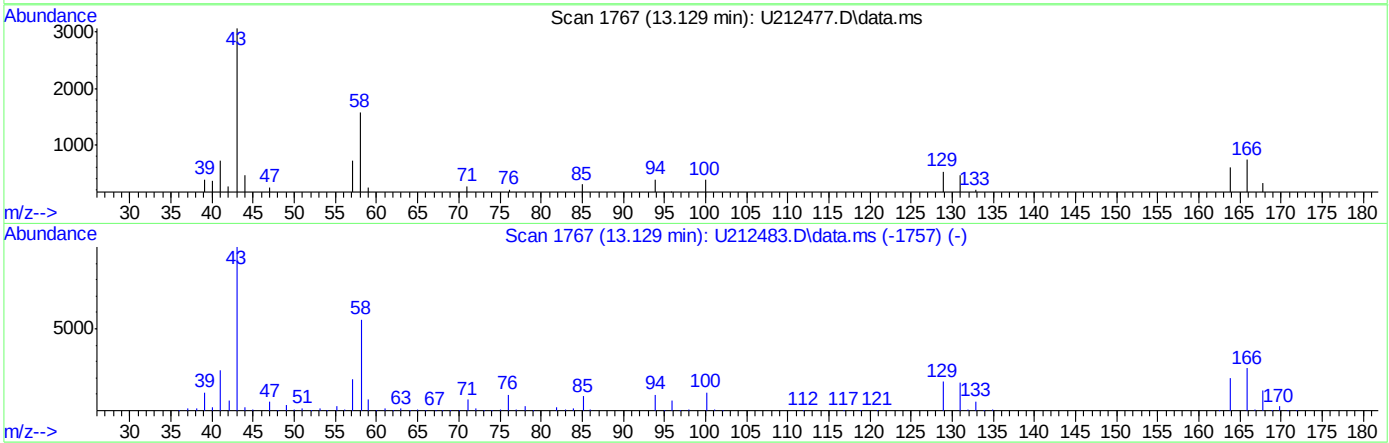
Ion	Exp%	Act%
164.00	100	0.00
129.00	90.10	0.00#
131.00	86.10	0.00#
166.00	131.20	0.00#

Quantitation Report (Qedit)

Data Path : [redacted]
Data File : U212477.D
Acq On : 3 Mar 2017 1:41 pm
Operator : [redacted]
Sample : ic9728-0.5
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 06 08:51:09 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:51:03 2017
Response via : Initial Calibration





TIC: U212477.D\data.ms

(82) tetrachloroethene (M)

13.129min (+0.001) 0.47ug/L m

response 1153

Ion	Exp%	Act%
164.00	100	100
129.00	90.10	86.66
131.00	86.10	77.92
166.00	131.20	121.42

Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu 03/06/17 15:57

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212478.D
Acq On : 3 Mar 2017 2:11 pm
Operator : [redacted]
Sample : ic9728-1
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 06 14:54:30 2017
Quant Method : [redacted]
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:58:53 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Tert Butyl Alcohol-d9	7.675	65	210274	500.00	ug/L		0.01
5) pentafluorobenzene	9.830	168	269751	50.00	ug/L		0.00
54) 1,4-difluorobenzene	10.745	114	376350	50.00	ug/L		0.00
75) chlorobenzene-d5	14.066	117	350964	50.00	ug/L		0.00
100) 1,4-dichlorobenzene-d4	16.645	152	198696	50.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	9.898	113	112438	49.77	ug/L		0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 99.54%				
55) 1,2-dichloroethane-d4 (s)	10.316	65	131842	50.54	ug/L		0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 101.08%				
76) toluene-d8 (s)	12.429	98	439305	50.32	ug/L		0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 100.64%				
101) 4-bromofluorobenzene (s)	15.342	95	174115	50.36	ug/L		0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 100.72%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.795	59	2970	5.08	ug/L		74
4) 1,4-dioxane	11.514	88	936	20.56	ug/L	#	71
7) chlorodifluoromethane	4.249	51	2131	0.87	ug/L		62
8) dichlorodifluoromethane	4.218	85	2537	0.65	ug/L	#	51
9) chloromethane	4.547	50	4511	0.95	ug/L		97
10) vinyl chloride	4.819	62	3869	0.88	ug/L		77
11) bromomethane	5.489	94	2759	1.10	ug/L		88
12) chloroethane	5.677	64	1986	1.05	ug/L		96
13) trichlorofluoromethane	6.174	101	2834	0.74	ug/L		88
14) vinyl bromide	6.022	106	3779	0.94	ug/L	#	97
15) ethyl ether	6.540	74	1542	1.08	ug/L		87
16) 2-chloropropane	6.755	43	4799	1.09	ug/L	#	84
19) 1,1-dichloroethene	6.979	96	2703	0.98	ug/L	#	73
20) acetone	7.068	58	1836	5.55	ug/L	#	36
22) iodomethane	7.267	142	5016	1.06	ug/L		96
23) carbon disulfide	7.414	76	8864	0.97	ug/L		92
24) methylene chloride	7.696	84	3101	1.11	ug/L		95
25) methyl acetate	7.487	43	3635	1.24	ug/L		90
26) methyl tert butyl ether	7.994	73	9090	1.07	ug/L		88
27) trans-1,2-dichloroethene	8.046	96	2975	1.10	ug/L		99
28) hexane	8.329	57	3795	0.86	ug/L		94
29) di-isopropyl ether	8.569	45	10419	1.03	ug/L	#	74
30) ethyl tert-butyl ether	9.024	59	9244	1.00	ug/L		96
31) 2-butanone	9.317	72	1999	5.11	ug/L		93
32) 1,1-dichloroethane	8.611	63	5442	1.10	ug/L		97
33) chloroprene	8.716	53	3968	0.89	ug/L		90
34) acrylonitrile	8.057	53	1018m	0.73	ug/L		
37) 2,2-dichloropropane	9.344	77	4171	1.07	ug/L		91
38) cis-1,2-dichloroethene	9.344	96	3260	1.11	ug/L		90
40) propionitrile	9.427	54	5371	10.66	ug/L		83
41) bromochloromethane	9.652	128	1532	1.14	ug/L		93
43) chloroform	9.699	83	5711	1.09	ug/L		98
44) tert-butyl Formate	9.715	59	2987	1.02	ug/L		88

SGS ACCUTEST JC40923

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212478.D
Acq On : 3 Mar 2017 2:11 pm
Operator : [redacted]
Sample : ic9728-1
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 06 14:54:30 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:58:53 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
45) iso-butyl alcohol	10.144	43	2898	10.38	ug/L		89
47) methacrylonitrile	9.600	67	1498	1.01	ug/L		88
48) 1,1,1-trichloroethane	9.950	97	4010	1.06	ug/L		94
49) cyclohexane	10.018	84	2998	0.79	ug/L	#	69
50) 1,1-dichloropropene	10.123	75	3714	1.00	ug/L		96
51) carbon tetrachloride	10.149	117	3710	1.08	ug/L		96
52) tert amyl alcohol	10.264	73	1515	5.88	ug/L	#	79
56) iso-octane	10.374	57	9489	0.89	ug/L		93
57) n-butyl alcohol	10.897	56	7458	44.04	ug/L		96
58) benzene	10.390	78	11876	1.04	ug/L		95
59) tert-amyl methyl ether	10.405	73	9567	1.07	ug/L		94
60) heptane	10.526	57	1946	0.85	ug/L		91
61) 1,2-dichloroethane	10.416	62	3959	1.08	ug/L		93
62) ethyl acrylate	11.090	55	4501	1.07	ug/L		78
63) trichloroethene	11.096	95	2880	1.03	ug/L		95
64) methylcyclohexane	11.310	83	4062	0.78	ug/L		96
66) 2-chloroethyl vinyl ether	11.896	63	9411	4.33	ug/L		99
67) methyl methacrylate	11.362	100	812	0.87	ug/L	#	61
68) 1,2-dichloropropane	11.368	63	3225	1.08	ug/L		96
69) dibromomethane	11.530	93	1824	1.09	ug/L		90
70) bromodichloromethane	11.660	83	4049	1.08	ug/L		91
71) epichlorohydrin	12.047	57	2319	5.36	ug/L		94
72) cis-1,3-dichloropropene	12.126	75	5117	1.06	ug/L		96
73) 4-methyl-2-pentanone	12.220	58	7400	5.22	ug/L		93
74) 3-methyl-1-butanol	12.251	55	5164	3.53	ug/L		95
77) toluene	12.508	92	7584	1.11	ug/L		97
78) ethyl methacrylate	12.696	69	4234	0.99	ug/L		97
79) trans-1,3-dichloropropene	12.727	75	4730	1.12	ug/L		97
80) 1,1,2-trichloroethane	12.952	83	2446	1.04	ug/L		95
81) 2-hexanone	13.130	58	7641	5.04	ug/L		95
82) tetrachloroethene	13.130	164	2534	1.05	ug/L		93
83) 1,3-dichloropropane	13.151	76	4762	1.14	ug/L		93
84) butyl acetate	13.203	56	2744	1.08	ug/L		96
85) dibromochloromethane	13.439	129	3251	1.06	ug/L		99
86) 1,2-dibromoethane	13.611	107	3118	1.10	ug/L		93
87) 3,3-dimethyl-1-Butanol	13.318	57	5020	8.37	ug/L	#	97
88) n-butyl ether	13.977	57	12730	1.04	ug/L	#	95
89) chlorobenzene	14.103	112	8671	1.05	ug/L		89
90) 1,1,1,2-tetrachloroethane	14.166	131	3083	1.15	ug/L		98
91) ethylbenzene	14.155	91	14572	1.07	ug/L		98
92) m,p-xylene	14.270	106	11413	2.22	ug/L		95
93) o-xylene	14.736	106	5480	1.03	ug/L		99
94) styrene	14.751	104	9473	1.08	ug/L		94
95) butyl acrylate	14.532	55	6924	1.08	ug/L		99
96) bromoform	15.055	173	2618	1.04	ug/L		89
97) isopropylbenzene	15.102	105	14422	1.03	ug/L		99
98) cis-1,4-dichloro-2-butene	15.201	88	1296	1.11	ug/L		94
102) bromobenzene	15.562	156	4197	1.13	ug/L		92
103) 1,1,2,2-tetrachloroethane	15.463	83	4684	1.12	ug/L		92
104) trans-1,4-dichloro-2-b...	15.505	53	1164	1.02	ug/L		90

SGS ACCUTEST

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212478.D
Acq On : 3 Mar 2017 2:11 pm
Operator : [redacted]
Sample : ic9728-1
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 06 14:54:30 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:58:53 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
105) 1,2,3-trichloropropane	15.552	110	1124	1.07	ug/L	86
106) n-propylbenzene	15.562	91	17248	1.00	ug/L	98
107) 2-chlorotoluene	15.740	126	3700	1.08	ug/L	87
108) 4-chlorotoluene	15.845	91	11032	1.04	ug/L	100
109) 1,3,5-trimethylbenzene	15.730	105	12617	1.05	ug/L	97
110) tert-butylbenzene	16.122	119	10790	0.99	ug/L	99
111) 1,2,4-trimethylbenzene	16.169	105	12834	1.04	ug/L	99
112) sec-butylbenzene	16.357	105	15846	1.00	ug/L	95
113) 1,3-dichlorobenzene	16.582	146	7826	1.04	ug/L	92
114) p-isopropyltoluene	16.488	119	13894	0.99	ug/L	97
115) 1,4-dichlorobenzene	16.671	146	8021	1.06	ug/L	99
116) benzyl chloride	16.802	91	8877	1.02	ug/L	93
117) 1,2-dichlorobenzene	17.110	146	7671	1.08	ug/L	97
118) n-butylbenzene	16.948	92	6899	1.01	ug/L	99
119) 1,2-dibromo-3-chloropr...	17.958	157	1059	1.18	ug/L	87
120) 1,3,5-trichlorobenzene	18.156	180	5904	0.98	ug/L	98
122) 1,2,4-trichlorobenzene	18.878	180	5058	0.96	ug/L	92
123) hexachlorobutadiene	18.993	225	3028	1.04	ug/L	97
124) naphthalene	19.202	128	11746	0.99	ug/L	99
125) 1,2,3-trichlorobenzene	19.474	180	4245	0.98	ug/L	93
126) hexachloroethane	17.398	201	2610	1.12	ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

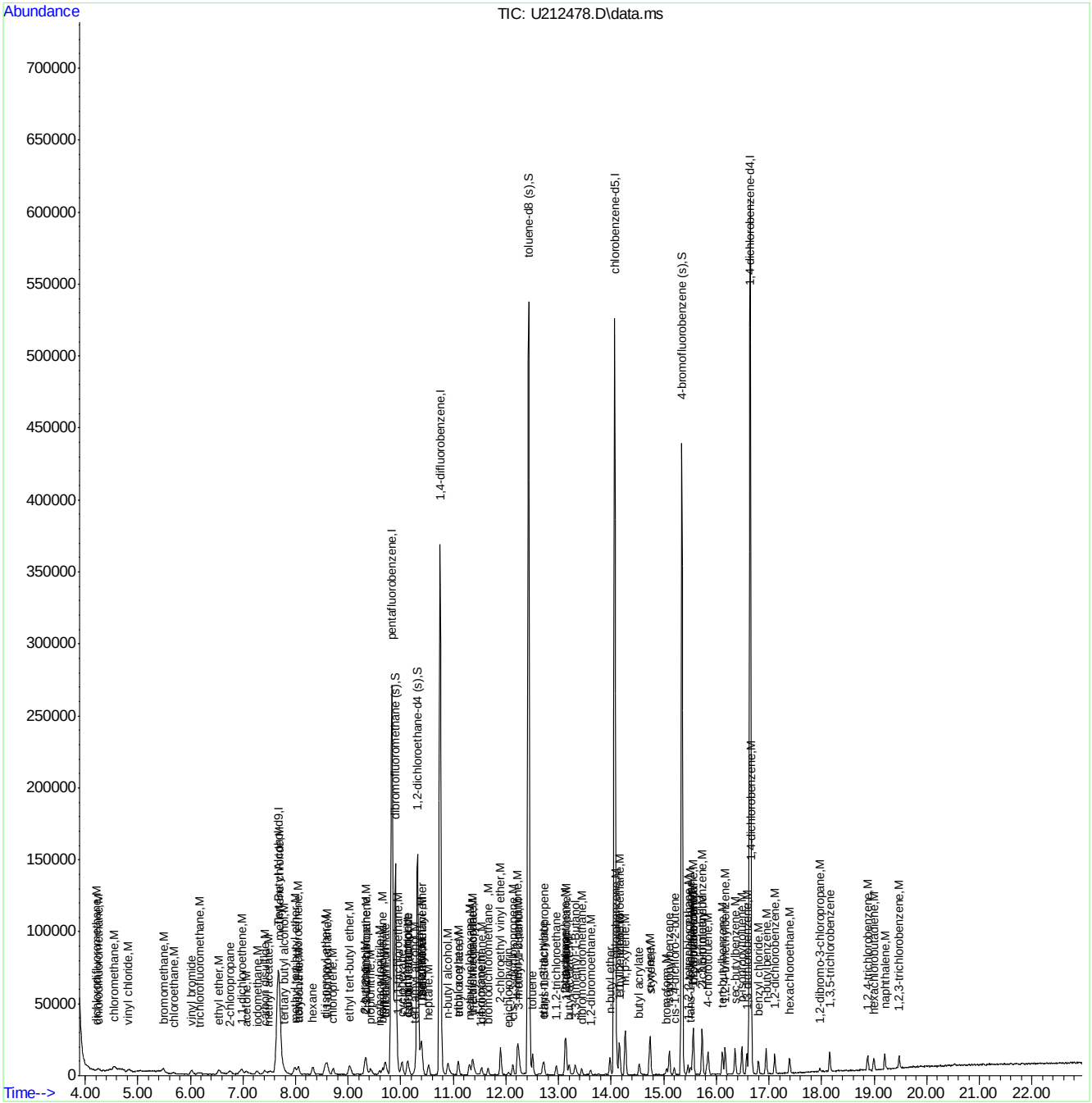
7.7.3

7

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212478.D
Acq On : 3 Mar 2017 2:11 pm
Operator : [redacted]
Sample : ic9728-1
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 06 14:54:30 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:58:53 2017
Response via : Initial Calibration



Manual Integration Approval Summary

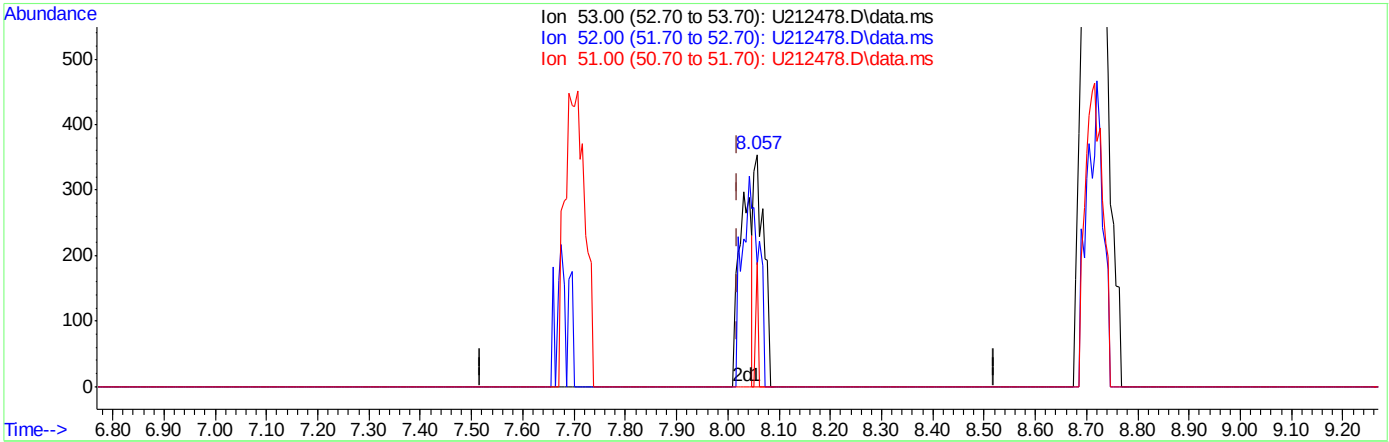
Sample Number:	VU9728-IC9728	**Method:**	SW846 8260C
Lab FileID:	U212478.D	**Analyst approved:**	03/06/17 15:10 [redacted]
Injection Time:	03/03/17 14:11	**Supervisor approved:**	03/06/17 15:57 [redacted]

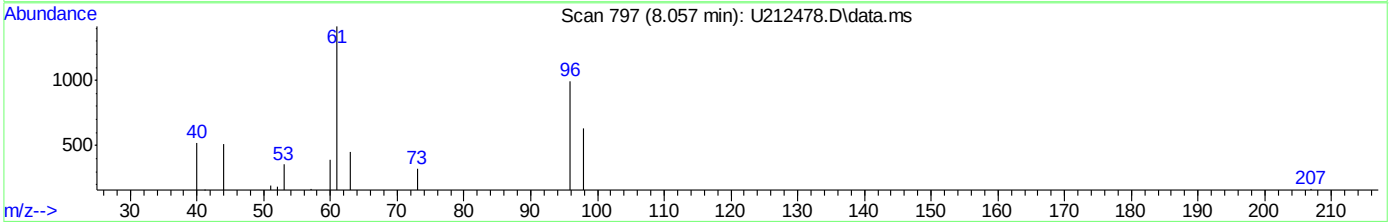
Parameter	CAS	Sig#	R.T. (min.)	Reason
Acrylonitrile	107-13-1		8.06	Split peak

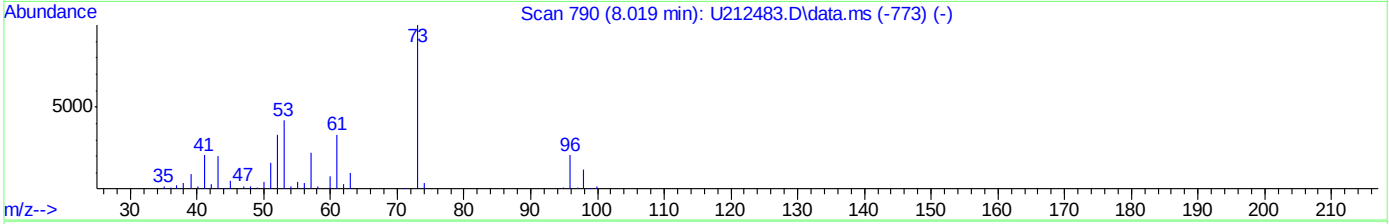
Quantitation Report (Qedit)

Data Path : [redacted]
Data File : U212478.D
Acq On : 3 Mar 2017 2:11 pm
Operator : [redacted]
Sample : ic9728-1
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 06 09:01:18 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:58:53 2017
Response via : Initial Calibration







TIC: U212478.D\data.ms

(34) acrylonitrile (M)

8.057min (+0.038) 0.35ug/L

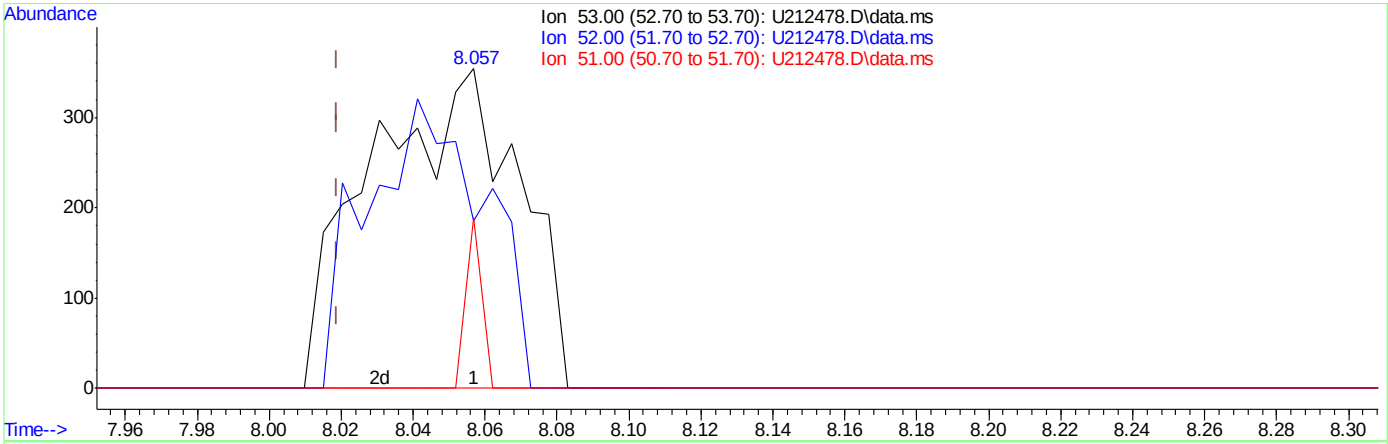
response 493

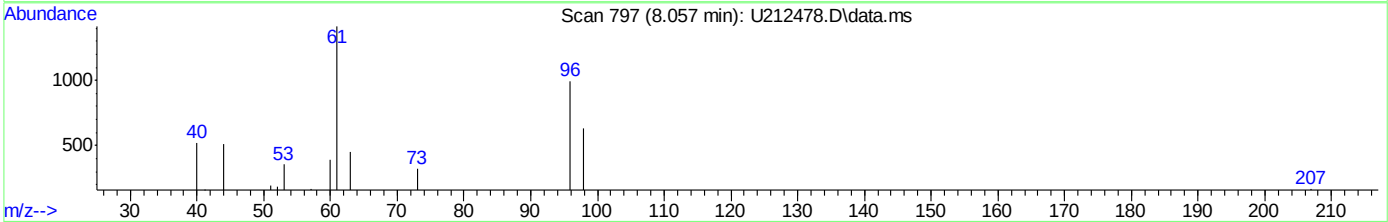
Ion	Exp%	Act%
53.00	100	100
52.00	79.10	52.54
51.00	37.70	53.39
0.00	0.00	0.00

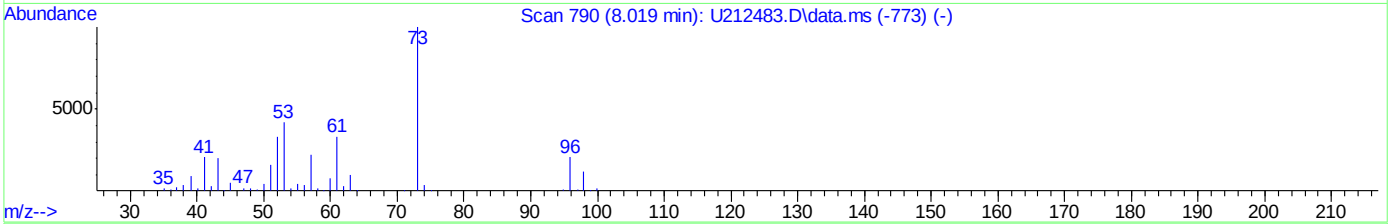
Quantitation Report (Qedit)

Data Path : [redacted]
Data File : U212478.D
Acq On : 3 Mar 2017 2:11 pm
Operator : [redacted]
Sample : ic9728-1
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 06 09:01:18 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:58:53 2017
Response via : Initial Calibration







TIC: U212478.D\data.ms

(34) acrylonitrile (M)

8.057min (+0.038) 0.73ug/L m

response 1018

Ion	Exp%	Act%
53.00	100	100
52.00	79.10	52.54
51.00	37.70	53.39
0.00	0.00	0.00

Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu 03/06/17 15:57

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212479.D
Acq On : 3 Mar 2017 2:40 pm
Operator : [redacted]
Sample : ic9728-2
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 06 10:23:18 2017
Quant Method : [redacted]
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:07:26 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.659	65	209349	500.00	ug/L	0.00
5) pentafluorobenzene	9.830	168	271678	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.745	114	379475	50.00	ug/L	0.00
75) chlorobenzene-d5	14.066	117	353968	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.639	152	201339	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.898	113	113945	50.14	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 100.28%			
55) 1,2-dichloroethane-d4 (s)	10.316	65	133572	50.65	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 101.30%			
76) toluene-d8 (s)	12.429	98	443496	50.29	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 100.58%			
101) 4-bromofluorobenzene (s)	15.342	95	173528	49.45	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 98.90%			
Target Compounds						Qvalue
2) tertiary butyl alcohol	7.780	59	5781	9.86	ug/L	89
4) 1,4-dioxane	11.514	88	2039	49.37	ug/L	99
7) chlorodifluoromethane	4.244	51	4031	1.75	ug/L	93
8) dichlorodifluoromethane	4.228	85	6541	2.02	ug/L	83
9) chloromethane	4.547	50	8763	1.86	ug/L	99
10) vinyl chloride	4.814	62	7914	1.87	ug/L	99
11) bromomethane	5.484	94	5148	1.97	ug/L	93
12) chloroethane	5.667	64	4158	2.15	ug/L	99
13) trichlorofluoromethane	6.169	101	7268m	2.07	ug/L	
14) vinyl bromide	6.017	106	7340	1.84	ug/L	91
15) ethyl ether	6.535	74	3105	2.10	ug/L	88
16) 2-chloropropane	6.749	43	8334	1.82	ug/L	95
17) acrolein	6.822	56	1211	1.89	ug/L	84
19) 1,1-dichloroethene	6.985	96	5261	1.90	ug/L	86
20) acetone	7.053	58	3537	10.07	ug/L #	76
21) acetonitrile	7.528	41	11046	21.61	ug/L	85
22) iodomethane	7.267	142	9593	1.97	ug/L	98
23) carbon disulfide	7.419	76	16671	1.82	ug/L	91
24) methylene chloride	7.701	84	5922	2.03	ug/L	93
25) methyl acetate	7.487	43	5902	1.79	ug/L	93
26) methyl tert butyl ether	7.994	73	16856	1.93	ug/L	98
27) trans-1,2-dichloroethene	8.052	96	5516	1.96	ug/L	97
28) hexane	8.329	57	7137	1.69	ug/L	97
29) di-isopropyl ether	8.564	45	19852	1.94	ug/L #	70
30) ethyl tert-butyl ether	9.024	59	18541	1.99	ug/L	97
31) 2-butanone	9.307	72	3920	9.88	ug/L #	81
32) 1,1-dichloroethane	8.611	63	10500	2.05	ug/L	93
33) chloroprene	8.716	53	8305	1.93	ug/L	96
34) acrylonitrile	8.036	53	2262	1.86	ug/L	81
35) vinyl acetate	8.606	86	946	1.48	ug/L #	1
36) ethyl acetate	9.312	45	1022	1.92	ug/L #	26
37) 2,2-dichloropropane	9.338	77	7761	1.93	ug/L	91
38) cis-1,2-dichloroethene	9.338	96	6066	1.99	ug/L	96

MU9728.M Mon Mar 06 14:55:13 2017 Page: 1

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212479.D
Acq On : 3 Mar 2017 2:40 pm
Operator : [redacted]
Sample : ic9728-2
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 06 10:23:18 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:07:26 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
39) methyl acrylate	9.401	85	804m	1.44 ug/L		
40) propionitrile	9.427	54	10419	20.09 ug/L		93
41) bromochloromethane	9.652	128	2990	2.11 ug/L		93
42) tetrahydrofuran	9.694	42	3791	2.64 ug/L		86
43) chloroform	9.704	83	10197	1.87 ug/L		93
44) tert-butyl Formate	9.725	59	5671	1.91 ug/L	#	94
45) iso-butyl alcohol	10.149	43	5528	19.41 ug/L		89
47) methacrylonitrile	9.594	67	2816	1.88 ug/L		89
48) 1,1,1-trichloroethane	9.950	97	7847	2.02 ug/L		93
49) cyclohexane	10.018	84	6205	1.75 ug/L	#	78
50) 1,1-dichloropropene	10.123	75	7800	2.09 ug/L		95
51) carbon tetrachloride	10.154	117	7175	2.03 ug/L		86
52) tert amyl alcohol	10.269	73	3104	11.30 ug/L	#	75
53) isopropyl acetate	10.295	87	1334	1.92 ug/L	#	46
56) iso-octane	10.363	57	18993	1.84 ug/L		97
57) n-butyl alcohol	10.891	56	14299	86.31 ug/L		97
58) benzene	10.389	78	22433	1.94 ug/L		99
59) tert-amyl methyl ether	10.400	73	17592	1.91 ug/L		96
60) heptane	10.525	57	4025	1.83 ug/L		89
61) 1,2-dichloroethane	10.405	62	7672	2.02 ug/L		94
62) ethyl acrylate	11.090	55	8451	1.94 ug/L		95
63) trichloroethene	11.090	95	5608	1.97 ug/L		91
64) methylcyclohexane	11.310	83	8472	1.71 ug/L		89
66) 2-chloroethyl vinyl ether	11.896	63	18155	8.56 ug/L		96
67) methyl methacrylate	11.357	100	1706	1.94 ug/L	#	59
68) 1,2-dichloropropane	11.373	63	6032	1.96 ug/L		92
69) dibromomethane	11.540	93	3602	2.07 ug/L		93
70) bromodichloromethane	11.655	83	7622	1.98 ug/L		96
71) epichlorohydrin	12.042	57	4244	9.50 ug/L		93
72) cis-1,3-dichloropropene	12.131	75	9949	2.02 ug/L		98
73) 4-methyl-2-pentanone	12.220	58	14416	9.94 ug/L		97
74) 3-methyl-1-butanol	12.246	55	9489	8.10 ug/L		96
77) toluene	12.508	92	14041	1.98 ug/L		97
78) ethyl methacrylate	12.696	69	8900	2.08 ug/L		97
79) trans-1,3-dichloropropene	12.722	75	9112	2.07 ug/L		98
80) 1,1,2-trichloroethane	12.957	83	4718	1.97 ug/L		96
81) 2-hexanone	13.125	58	15323	10.00 ug/L		92
82) tetrachloroethene	13.130	164	5083	2.07 ug/L		95
83) 1,3-dichloropropane	13.151	76	8943	2.05 ug/L		95
84) butyl acetate	13.198	56	5114	1.94 ug/L		91
85) dibromochloromethane	13.444	129	6249	1.98 ug/L		93
86) 1,2-dibromoethane	13.611	107	5990	2.05 ug/L		99
87) 3,3-dimethyl-1-Butanol	13.313	57	9237	15.92 ug/L	#	97
88) n-butyl ether	13.977	57	23962	1.93 ug/L		99
89) chlorobenzene	14.103	112	16253	1.93 ug/L		83
90) 1,1,1,2-tetrachloroethane	14.166	131	6081	2.16 ug/L		95
91) ethylbenzene	14.155	91	27081	1.93 ug/L		97
92) m,p-xylene	14.270	106	21046	3.95 ug/L		88
93) o-xylene	14.736	106	10189	1.89 ug/L		96
94) styrene	14.746	104	17544	1.94 ug/L		97

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212479.D
Acq On : 3 Mar 2017 2:40 pm
Operator : [redacted]
Sample : ic9728-2
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 06 10:23:18 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:07:26 2017
Response via : Initial Calibration

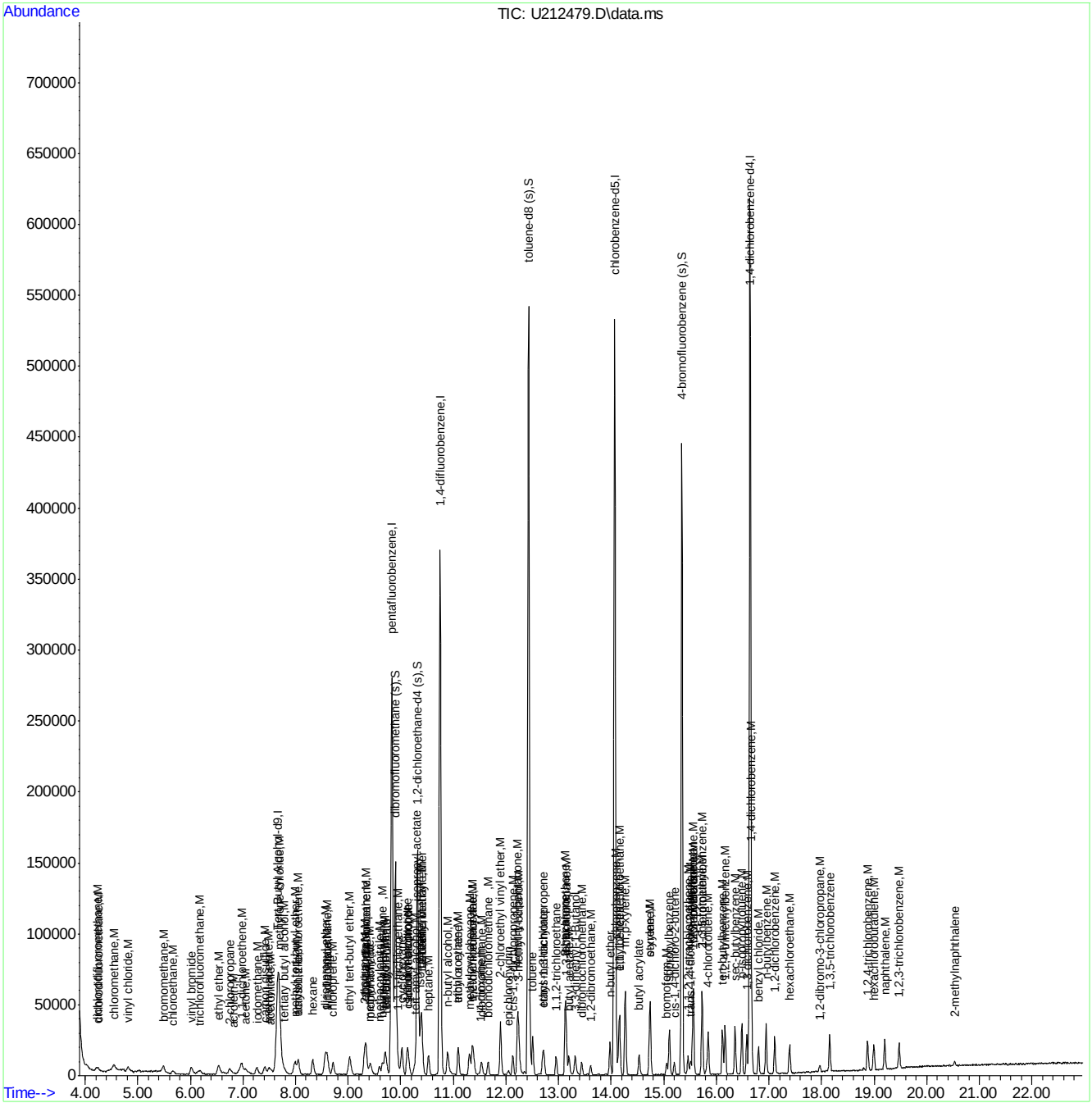
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
95) butyl acrylate	14.532	55	12648	1.92	ug/L		97
96) bromoform	15.055	173	4935	1.92	ug/L		97
97) isopropylbenzene	15.107	105	27169	1.91	ug/L		99
98) cis-1,4-dichloro-2-butene	15.196	88	2460	2.01	ug/L		96
102) bromobenzene	15.567	156	7765	1.99	ug/L		96
103) 1,1,2,2-tetrachloroethane	15.463	83	8489	1.95	ug/L		92
104) trans-1,4-dichloro-2-b...	15.504	53	2300	1.88	ug/L		93
105) 1,2,3-trichloropropane	15.552	110	2223	2.04	ug/L		99
106) n-propylbenzene	15.562	91	33652	1.92	ug/L		99
107) 2-chlorotoluene	15.740	126	7251	2.05	ug/L		87
108) 4-chlorotoluene	15.844	91	20556	1.90	ug/L		96
109) 1,3,5-trimethylbenzene	15.724	105	23531	1.91	ug/L		97
110) tert-butylbenzene	16.116	119	20587	1.88	ug/L		99
111) 1,2,4-trimethylbenzene	16.169	105	23303	1.84	ug/L		96
112) sec-butylbenzene	16.357	105	30231	1.89	ug/L		99
113) 1,3-dichlorobenzene	16.582	146	14753	1.92	ug/L		98
114) p-isopropyltoluene	16.488	119	26721	1.89	ug/L		97
115) 1,4-dichlorobenzene	16.671	146	14884	1.91	ug/L		96
116) benzyl chloride	16.802	91	17139	1.93	ug/L		93
117) 1,2-dichlorobenzene	17.110	146	14368	1.96	ug/L		98
118) n-butylbenzene	16.948	92	13055	1.88	ug/L		93
119) 1,2-dibromo-3-chloropr...	17.968	157	2034	2.11	ug/L		96
120) 1,3,5-trichlorobenzene	18.156	180	11370	1.88	ug/L		88
122) 1,2,4-trichlorobenzene	18.878	180	9775	1.86	ug/L		94
123) hexachlorobutadiene	18.993	225	5540	1.86	ug/L		88
124) naphthalene	19.207	128	22309	1.86	ug/L		98
125) 1,2,3-trichlorobenzene	19.479	180	8225	1.89	ug/L		96
126) hexachloroethane	17.393	201	4841	1.97	ug/L		96
127) 2-methylnaphthalene	20.525	142	2274	0.89	ug/L	#	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212479.D
Acq On : 3 Mar 2017 2:40 pm
Operator : [redacted]
Sample : ic9728-2
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 06 10:23:18 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:07:26 2017
Response via : Initial Calibration



Manual Integration Approval Summary

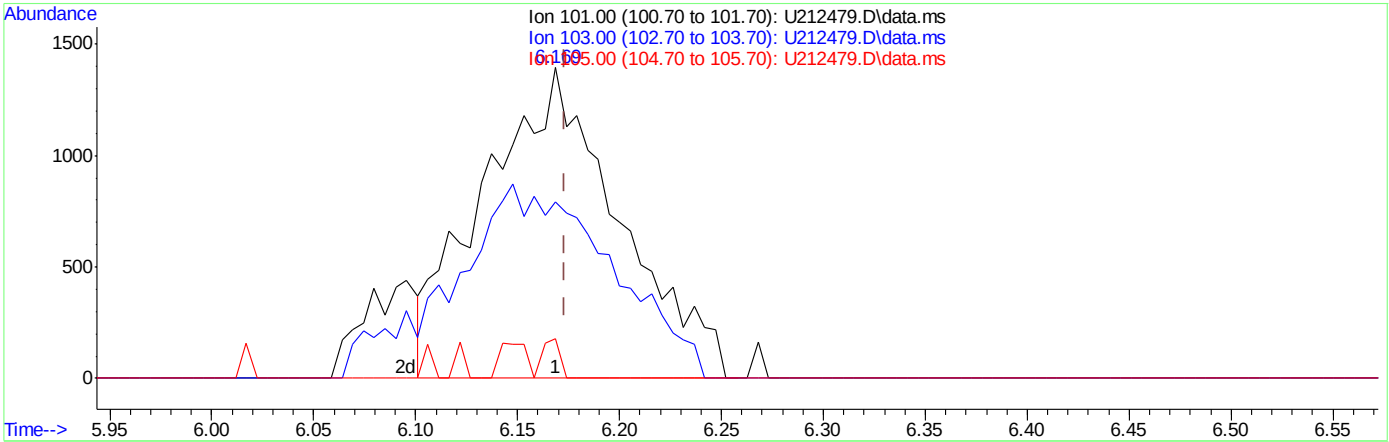
Sample Number: VU9728-IC9728
Lab FileID: U212479.D
Injection Time: 03/03/17 14:40
Method: SW846 8260C
Analyst approved: 03/06/17 11:19 [redacted]
Supervisor approved: 03/06/17 15:57 [redacted]

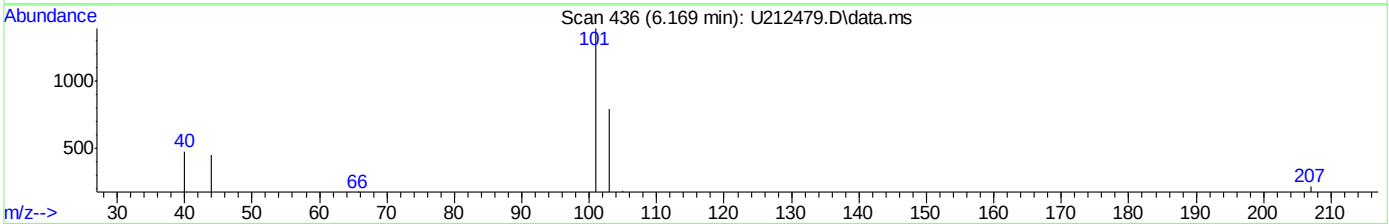
Parameter	CAS	Sig#	R.T. (min.)	Reason
Trichlorofluoromethane	75-69-4		6.17	Split peak
Methyl Acrylate	96-33-3		9.40	Missed peak

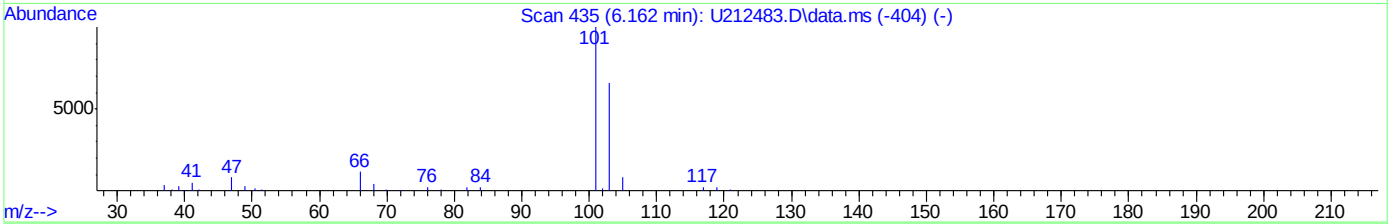
Quantitation Report (Qedit)

Data Path : [redacted]
Data File : U212479.D
Acq On : 3 Mar 2017 2:40 pm
Operator : [redacted]
Sample : ic9728-2
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 03 16:45:51 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Fri Mar 03 14:54:54 2017
Response via : Initial Calibration







TIC: U212479.D\data.ms

(13) trichlorofluoromethane (M)

6.169min (-0.004) 1.94ug/L

response 6470

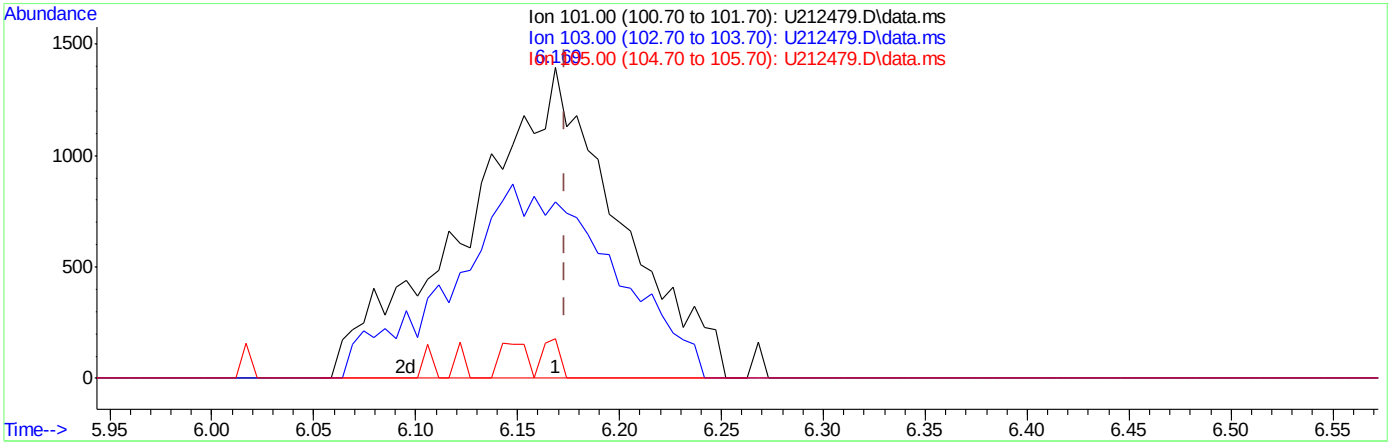
Ion	Exp%	Act%
101.00	100	100
103.00	64.30	56.67
105.00	9.90	12.70
0.00	0.00	0.00

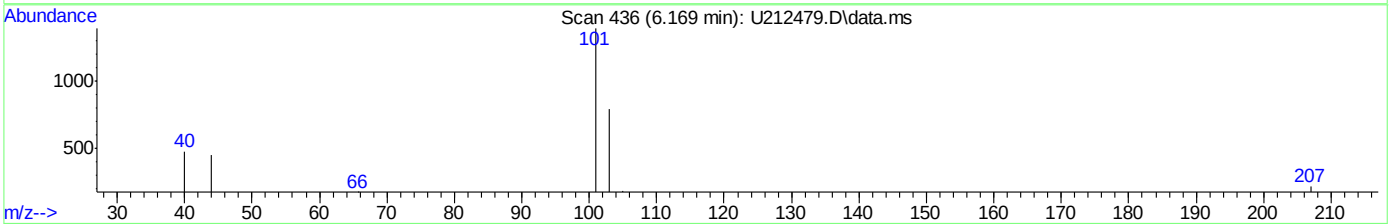
U212479.D edits: trichlorofluoromethane

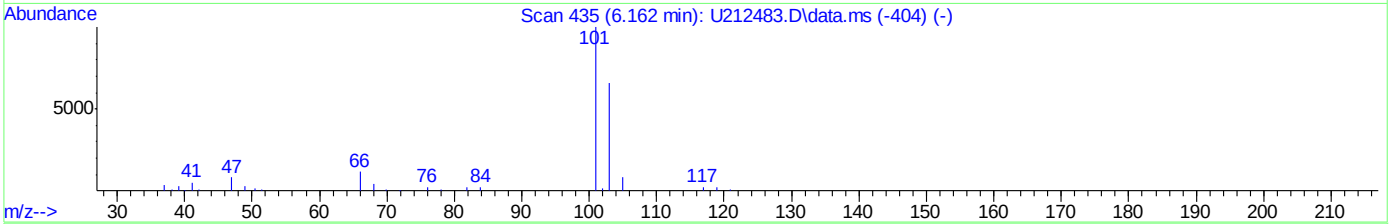
Quantitation Report (Qedit)

Data Path : [redacted]
Data File : U212479.D
Acq On : 3 Mar 2017 2:40 pm
Operator : [redacted]
Sample : ic9728-2
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 03 16:45:51 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Fri Mar 03 14:54:54 2017
Response via : Initial Calibration







TIC: U212479.D\data.ms

(13) trichlorofluoromethane (M)

6.169min (-0.004) 2.18ug/L m

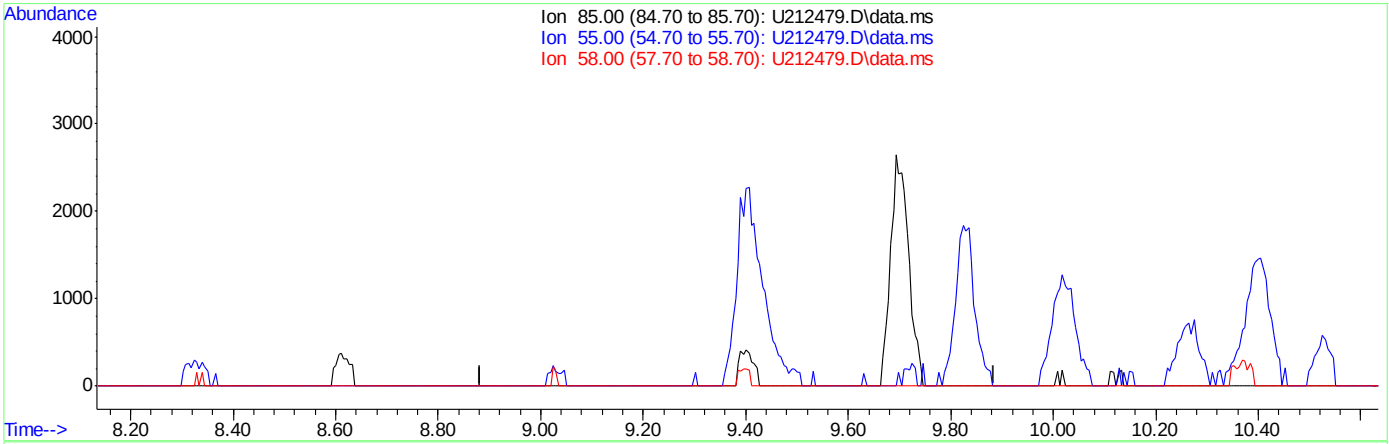
response 7268

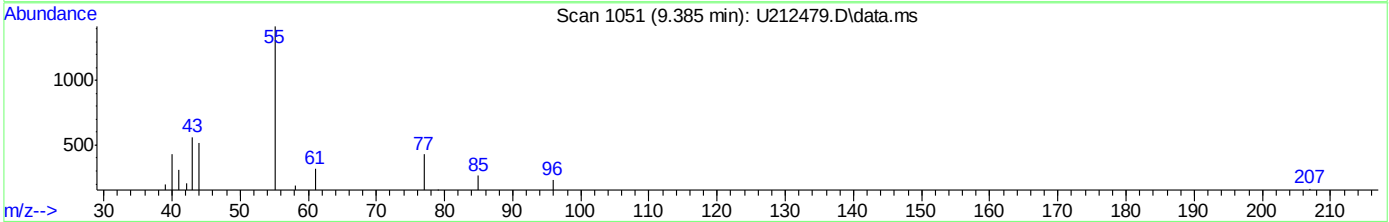
Ion	Exp%	Act%
101.00	100	100
103.00	64.30	56.67
105.00	9.90	12.70
0.00	0.00	0.00

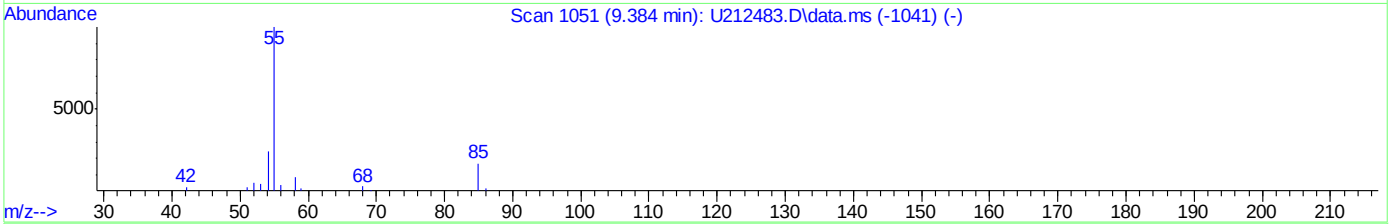
Quantitation Report (Qedit)

Data Path : [redacted]
Data File : U212479.D
Acq On : 3 Mar 2017 2:40 pm
Operator : [redacted]
Sample : ic9728-2
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 06 09:07:34 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:07:26 2017
Response via : Initial Calibration







TIC: U212479.D\data.ms

(39) methyl acrylate (M)

9.384min (-9.384) 0.00ug/L

response 0

Ion	Exp%	Act%
85.00	100	0.00
55.00	589.90	0.00#
58.00	53.60	0.00#
0.00	0.00	0.00

U212479.D edits: methyl acrylate

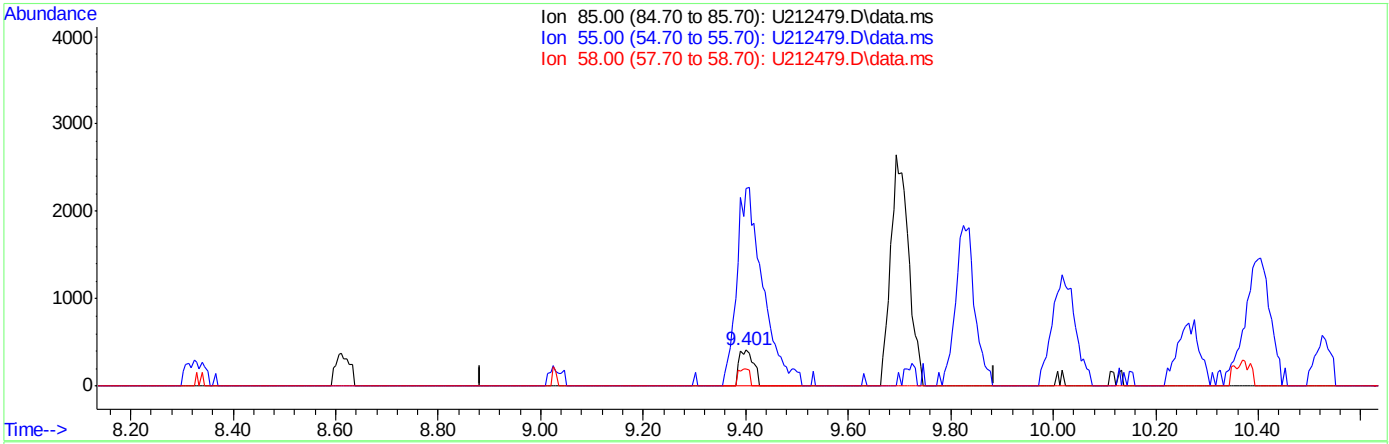
SGS ACCUTEST

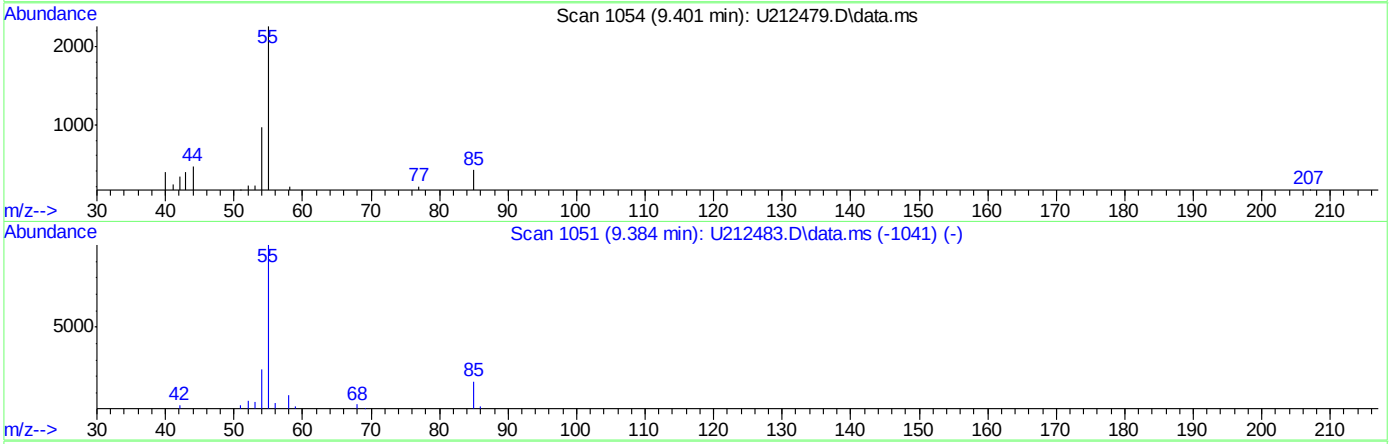
7.7.4.7

Quantitation Report (Qedit)

Data Path : [redacted]
Data File : U212479.D
Acq On : 3 Mar 2017 2:40 pm
Operator : [redacted]
Sample : ic9728-2
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 06 09:07:34 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:07:26 2017
Response via : Initial Calibration





TIC: U212479.D\data.ms

(39) methyl acrylate (M)

9.401min (+0.017) 1.44ug/L m

response 804

Ion	Exp%	Act%
85.00	100	100
55.00	589.90	546.97#
58.00	53.60	48.18
0.00	0.00	0.00

U212479.D edits: methyl acrylate

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212480.D
Acq On : 3 Mar 2017 3:09 pm
Operator : [redacted]
Sample : ic9728-5
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 06 09:13:46 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:10:59 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.680	65	204598	500.00	ug/L	0.02
5) pentafluorobenzene	9.830	168	270326	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.745	114	379187	50.00	ug/L	0.00
75) chlorobenzene-d5	14.066	117	349603	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.644	152	197296	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.898	113	112734	49.83	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 99.66%			
55) 1,2-dichloroethane-d4 (s)	10.316	65	133562	50.55	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 101.10%			
76) toluene-d8 (s)	12.429	98	442569	50.75	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 101.50%			
101) 4-bromofluorobenzene (s)	15.342	95	171197	49.89	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 99.78%			
Target Compounds						Qvalue
2) tertiary butyl alcohol	7.785	59	14258	35.56	ug/L	72
4) 1,4-dioxane	11.519	88	5160	182.74	ug/L	94
7) chlorodifluoromethane	4.249	51	11342	5.16	ug/L	97
8) dichlorodifluoromethane	4.233	85	17214	5.33	ug/L	98
9) chloromethane	4.547	50	21768	4.73	ug/L	97
10) vinyl chloride	4.819	62	21482	5.18	ug/L	95
11) bromomethane	5.494	94	12907	4.98	ug/L	99
12) chloroethane	5.682	64	10396	5.30	ug/L	96
13) trichlorofluoromethane	6.168	101	19433	5.51	ug/L	95
14) vinyl bromide	6.022	106	19049	4.87	ug/L	95
15) ethyl ether	6.540	74	8144	5.47	ug/L	94
16) 2-chloropropane	6.744	43	20065	4.51	ug/L	97
17) acrolein	6.827	56	3254	5.25	ug/L	95
18) freon 113	6.937	151	10160	5.91	ug/L	96
19) 1,1-dichloroethene	6.990	96	12849	4.71	ug/L	91
20) acetone	7.042	58	8264	23.58	ug/L	96
21) acetonitrile	7.523	41	25690	48.56	ug/L	94
22) iodomethane	7.262	142	24562	5.09	ug/L	97
23) carbon disulfide	7.418	76	40567	4.54	ug/L	99
24) methylene chloride	7.696	84	13672	4.70	ug/L	94
25) methyl acetate	7.481	43	14776	4.66	ug/L	97
26) methyl tert butyl ether	7.994	73	41481	4.81	ug/L	98
27) trans-1,2-dichloroethene	8.057	96	13714	4.93	ug/L	97
28) hexane	8.323	57	19747	4.89	ug/L	96
29) di-isopropyl ether	8.564	45	50854	5.02	ug/L	79
30) ethyl tert-butyl ether	9.029	59	47208	5.09	ug/L	99
31) 2-butanone	9.307	72	10601	26.94	ug/L	96
32) 1,1-dichloroethane	8.616	63	25902	5.06	ug/L	97
33) chloroprene	8.716	53	22970	5.40	ug/L	99
34) acrylonitrile	8.030	53	6148	5.20	ug/L	95
35) vinyl acetate	8.590	86	2781	5.02	ug/L #	72
36) ethyl acetate	9.317	45	2898	5.55	ug/L	63
37) 2,2-dichloropropane	9.343	77	19116	4.81	ug/L	95

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212480.D
Acq On : 3 Mar 2017 3:09 pm
Operator : [redacted]
Sample : ic9728-5
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 06 09:13:46 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:10:59 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
38) cis-1,2-dichloroethene	9.338	96	15119	5.00	ug/L		95
39) methyl acrylate	9.390	85	2470	5.17	ug/L	#	57
40) propionitrile	9.422	54	26728	51.74	ug/L		93
41) bromochloromethane	9.652	128	7717	5.40	ug/L		94
42) tetrahydrofuran	9.694	42	7689	4.64	ug/L		98
43) chloroform	9.699	83	24258	4.55	ug/L		99
44) tert-butyl Formate	9.725	59	14998	5.14	ug/L		99
45) iso-butyl alcohol	10.149	43	12401	44.08	ug/L		98
47) methacrylonitrile	9.594	67	7217	4.94	ug/L		98
48) 1,1,1-trichloroethane	9.945	97	19236	4.96	ug/L		94
49) cyclohexane	10.013	84	18599	5.43	ug/L	#	89
50) 1,1-dichloropropene	10.117	75	19174	5.11	ug/L		96
51) carbon tetrachloride	10.143	117	18008	5.11	ug/L		97
52) tert amyl alcohol	10.264	73	7210	25.55	ug/L		90
53) isopropyl acetate	10.295	87	3689	5.41	ug/L	#	75
56) iso-octane	10.368	57	48713	4.82	ug/L		99
57) n-butyl alcohol	10.891	56	36422	226.20	ug/L		100
58) benzene	10.389	78	55714	4.84	ug/L		100
59) tert-amyl methyl ether	10.400	73	45492	5.00	ug/L		99
60) heptane	10.525	57	10569	4.92	ug/L		97
61) 1,2-dichloroethane	10.410	62	19155	5.03	ug/L		98
62) ethyl acrylate	11.085	55	21849	5.06	ug/L		97
63) trichloroethene	11.095	95	14085	4.97	ug/L		98
64) methylcyclohexane	11.304	83	22088	4.59	ug/L		98
65) 2-nitropropane	11.895	46	178	2.39	ug/L	#	1
66) 2-chloroethyl vinyl ether	11.895	63	48367	23.51	ug/L		98
67) methyl methacrylate	11.352	100	4533	5.22	ug/L	#	86
68) 1,2-dichloropropane	11.367	63	14998	4.89	ug/L		99
69) dibromomethane	11.535	93	9071	5.17	ug/L		94
70) bromodichloromethane	11.660	83	18856	4.92	ug/L		99
71) epichlorohydrin	12.042	57	10284	23.32	ug/L		95
72) cis-1,3-dichloropropene	12.131	75	24483	4.96	ug/L		98
73) 4-methyl-2-pentanone	12.220	58	37078	25.62	ug/L		99
74) 3-methyl-1-butanol	12.251	55	24471	24.88	ug/L		93
77) toluene	12.507	92	34395	4.93	ug/L		97
78) ethyl methacrylate	12.696	69	21399	5.01	ug/L		99
79) trans-1,3-dichloropropene	12.722	75	22552	5.16	ug/L		97
80) 1,1,2-trichloroethane	12.952	83	11433	4.85	ug/L		99
81) 2-hexanone	13.125	58	39063	25.80	ug/L		95
82) tetrachloroethene	13.135	164	12832	5.24	ug/L		94
83) 1,3-dichloropropane	13.151	76	22374	5.17	ug/L		97
84) butyl acetate	13.198	56	12790	4.96	ug/L		94
85) dibromochloromethane	13.438	129	15750	5.06	ug/L		98
86) 1,2-dibromoethane	13.606	107	14922	5.14	ug/L		98
87) 3,3-dimethyl-1-Butanol	13.318	57	22641	41.19	ug/L		99
88) n-butyl ether	13.977	57	59891	4.91	ug/L		99
89) chlorobenzene	14.103	112	39107	4.73	ug/L		95
90) 1,1,1,2-tetrachloroethane	14.165	131	14754	5.23	ug/L		99
91) ethylbenzene	14.155	91	67282	4.89	ug/L		98
92) m,p-xylene	14.265	106	51681	9.84	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212480.D
Acq On : 3 Mar 2017 3:09 pm
Operator : [redacted]
Sample : ic9728-5
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 06 09:13:46 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:10:59 2017
Response via : Initial Calibration

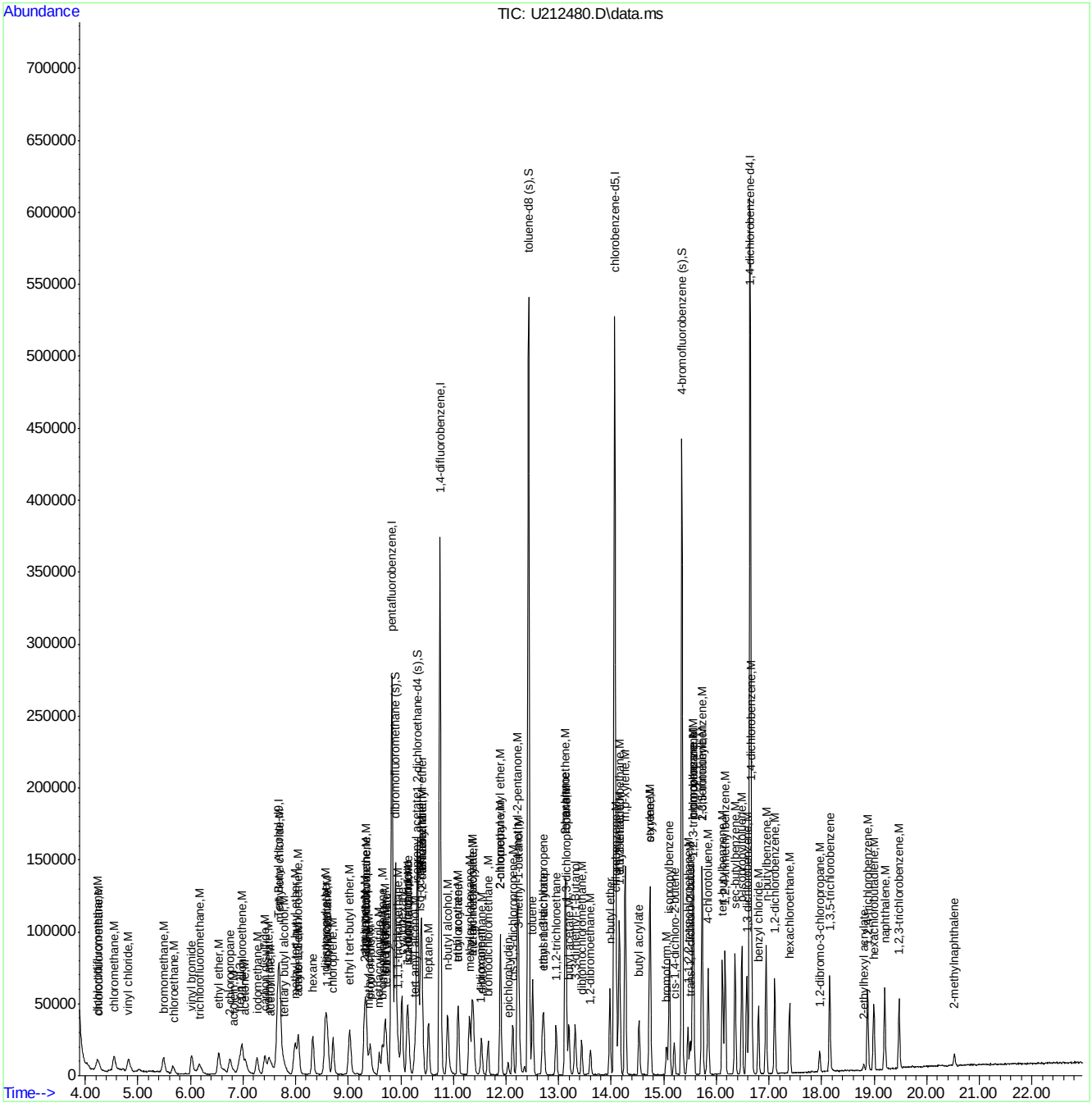
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
93) o-xylene	14.735	106	25639	4.86	ug/L	98
94) styrene	14.746	104	44288	4.99	ug/L	98
95) butyl acrylate	14.531	55	31209	4.84	ug/L	100
96) bromoform	15.054	173	12235	4.87	ug/L	91
97) isopropylbenzene	15.107	105	67796	4.87	ug/L	99
98) cis-1,4-dichloro-2-butene	15.196	88	6673	5.52	ug/L	97
102) bromobenzene	15.567	156	19044	4.99	ug/L	98
103) 1,1,2,2-tetrachloroethane	15.462	83	20592	4.84	ug/L	95
104) trans-1,4-dichloro-2-b...	15.504	53	5884	4.81	ug/L	88
105) 1,2,3-trichloropropane	15.546	110	5477	5.10	ug/L	97
106) n-propylbenzene	15.562	91	81592	4.80	ug/L	99
107) 2-chlorotoluene	15.734	126	17096	4.90	ug/L	96
108) 4-chlorotoluene	15.844	91	49923	4.76	ug/L	99
109) 1,3,5-trimethylbenzene	15.724	105	57003	4.76	ug/L	99
110) tert-butylbenzene	16.116	119	50485	4.75	ug/L	96
111) 1,2,4-trimethylbenzene	16.168	105	58641	4.81	ug/L	99
112) sec-butylbenzene	16.357	105	74203	4.78	ug/L	99
113) 1,3-dichlorobenzene	16.582	146	36502	4.89	ug/L	98
114) p-isopropyltoluene	16.488	119	64657	4.72	ug/L	99
115) 1,4-dichlorobenzene	16.671	146	35955	4.75	ug/L	97
116) benzyl chloride	16.801	91	40885	4.74	ug/L	98
117) 1,2-dichlorobenzene	17.110	146	34456	4.82	ug/L	99
118) n-butylbenzene	16.948	92	32264	4.80	ug/L	92
119) 1,2-dibromo-3-chloropr...	17.962	157	5179	5.40	ug/L	95
120) 1,3,5-trichlorobenzene	18.156	180	28020	4.78	ug/L	97
121) 2-ethylhexyl acrylate	18.799	70	1722	0.65	ug/L	85
122) 1,2,4-trichlorobenzene	18.872	180	24546	4.83	ug/L	95
123) hexachlorobutadiene	18.998	225	14196	4.93	ug/L	98
124) naphthalene	19.202	128	56773	4.89	ug/L	99
125) 1,2,3-trichlorobenzene	19.479	180	20151	4.78	ug/L	94
126) hexachloroethane	17.392	201	11815	4.93	ug/L	99
127) 2-methylnaphthalene	20.525	142	5978	2.93	ug/L	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212480.D
Acq On : 3 Mar 2017 3:09 pm
Operator : [redacted]
Sample : ic9728-5
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 06 09:13:46 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:10:59 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212481.D
Acq On : 3 Mar 2017 3:38 pm
Operator : [redacted]
Sample : ic9728-10
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 06 09:16:02 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:15:06 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.664	65	206086	500.00	ug/L	0.00
5) pentafluorobenzene	9.829	168	271643	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.749	114	379584	50.00	ug/L	0.00
75) chlorobenzene-d5	14.065	117	353242	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.644	152	198895	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.897	113	112890	49.68	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 99.36%			
55) 1,2-dichloroethane-d4 (s)	10.315	65	134922	50.92	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 101.84%			
76) toluene-d8 (s)	12.428	98	443535	50.21	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 100.42%			
101) 4-bromofluorobenzene (s)	15.347	95	172237	49.81	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 99.62%			
Target Compounds						Qvalue
2) tertiary butyl alcohol	7.773	59	29587	66.26	ug/L	87
4) 1,4-dioxane	11.508	88	11205	353.18	ug/L	94
7) chlorodifluoromethane	4.254	51	22067	9.92	ug/L	99
8) dichlorodifluoromethane	4.227	85	34252	10.38	ug/L	98
9) chloromethane	4.546	50	43963	9.62	ug/L	98
10) vinyl chloride	4.829	62	42226	10.06	ug/L	99
11) bromomethane	5.483	94	26243	10.08	ug/L	95
12) chloroethane	5.671	64	20873	10.46	ug/L	98
13) trichlorofluoromethane	6.168	101	39279	10.86	ug/L	100
14) vinyl bromide	6.027	106	39234	10.02	ug/L	99
15) ethyl ether	6.539	74	17150	11.25	ug/L	96
16) 2-chloropropane	6.754	43	43100	9.83	ug/L	94
17) acrolein	6.832	56	6312	9.96	ug/L	93
18) freon 113	6.942	151	19821	11.07	ug/L	98
19) 1,1-dichloroethene	6.984	96	26571	9.79	ug/L	95
20) acetone	7.046	58	16339	47.07	ug/L	95
21) acetonitrile	7.512	41	52054	98.86	ug/L	98
22) iodomethane	7.271	142	50801	10.44	ug/L	99
23) carbon disulfide	7.418	76	84230	9.53	ug/L	99
24) methylene chloride	7.700	84	28691	9.93	ug/L	96
25) methyl acetate	7.481	43	29795	9.52	ug/L	96
26) methyl tert butyl ether	7.988	73	86578	10.05	ug/L	99
27) trans-1,2-dichloroethene	8.056	96	27549	9.88	ug/L	99
28) hexane	8.323	57	38321	9.48	ug/L	98
29) di-isopropyl ether	8.563	45	102220	10.04	ug/L	83
30) ethyl tert-butyl ether	9.023	59	93775	10.03	ug/L	99
31) 2-butanone	9.301	72	21282	52.99	ug/L	98
32) 1,1-dichloroethane	8.610	63	52784	10.25	ug/L	99
33) chloroprene	8.710	53	44804	10.32	ug/L	99
34) acrylonitrile	8.019	53	13717	11.43	ug/L	97
35) vinyl acetate	8.584	86	6062	10.88	ug/L #	93
36) ethyl acetate	9.306	45	6053	11.23	ug/L	97
37) 2,2-dichloropropane	9.337	77	38688	9.77	ug/L	95

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212481.D
Acq On : 3 Mar 2017 3:38 pm
Operator : [redacted]
Sample : ic9728-10
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 06 09:16:02 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:15:06 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
38) cis-1,2-dichloroethene	9.342	96	30871	10.15	ug/L		96
39) methyl acrylate	9.395	85	5384	11.09	ug/L		97
40) propionitrile	9.421	54	54227	103.74	ug/L		99
41) bromochloromethane	9.651	128	15455	10.59	ug/L		98
42) tetrahydrofuran	9.688	42	14666	9.02	ug/L		97
43) chloroform	9.703	83	48992	9.31	ug/L		98
44) tert-butyl Formate	9.724	59	30971	10.50	ug/L		98
45) iso-butyl alcohol	10.132	43	26312	95.34	ug/L		94
47) methacrylonitrile	9.588	67	14695	10.04	ug/L		97
48) 1,1,1-trichloroethane	9.944	97	39803	10.23	ug/L		98
49) cyclohexane	10.012	84	35805	10.23	ug/L		99
50) 1,1-dichloropropene	10.122	75	40239	10.62	ug/L		99
51) carbon tetrachloride	10.148	117	37447	10.53	ug/L		98
52) tert amyl alcohol	10.258	73	14401	50.57	ug/L		85
53) isopropyl acetate	10.289	87	7732	11.06	ug/L	#	78
56) iso-octane	10.368	57	92962	9.26	ug/L		100
57) n-butyl alcohol	10.880	56	77293	487.26	ug/L		99
58) benzene	10.383	78	113587	9.91	ug/L		98
59) tert-amyl methyl ether	10.399	73	90789	9.97	ug/L		99
60) heptane	10.524	57	20578	9.60	ug/L		96
61) 1,2-dichloroethane	10.404	62	38821	10.17	ug/L		97
62) ethyl acrylate	11.084	55	44559	10.29	ug/L		97
63) trichloroethene	11.095	95	29194	10.29	ug/L		99
64) methylcyclohexane	11.304	83	44168	9.30	ug/L		99
65) 2-nitropropane	11.884	46	636	11.54	ug/L	#	48
66) 2-chloroethyl vinyl ether	11.895	63	101393	49.73	ug/L		97
67) methyl methacrylate	11.351	100	9046	10.29	ug/L	#	91
68) 1,2-dichloropropane	11.367	63	30855	10.10	ug/L		100
69) dibromomethane	11.534	93	18713	10.58	ug/L		97
70) bromodichloromethane	11.659	83	38485	10.05	ug/L		98
71) epichlorohydrin	12.041	57	21042	48.32	ug/L		94
72) cis-1,3-dichloropropene	12.130	75	50226	10.18	ug/L		98
73) 4-methyl-2-pentanone	12.224	58	73783	50.68	ug/L		99
74) 3-methyl-1-butanol	12.240	55	51297	59.56	ug/L		97
77) toluene	12.507	92	70183	9.98	ug/L		96
78) ethyl methacrylate	12.695	69	44310	10.27	ug/L		99
79) trans-1,3-dichloropropene	12.721	75	45952	10.35	ug/L		99
80) 1,1,2-trichloroethane	12.956	83	23026	9.72	ug/L		98
81) 2-hexanone	13.124	58	78275	50.90	ug/L		98
82) tetrachloroethene	13.134	164	25893	10.39	ug/L		98
83) 1,3-dichloropropane	13.155	76	45753	10.40	ug/L		96
84) butyl acetate	13.197	56	26472	10.17	ug/L		99
85) dibromochloromethane	13.438	129	32310	10.26	ug/L		98
86) 1,2-dibromoethane	13.605	107	30459	10.34	ug/L		97
87) 3,3-dimethyl-1-Butanol	13.312	57	49241	91.34	ug/L		98
88) n-butyl ether	13.976	57	123285	10.04	ug/L		99
89) chlorobenzene	14.102	112	81911	9.89	ug/L		98
90) 1,1,1,2-tetrachloroethane	14.165	131	29814	10.37	ug/L		96
91) ethylbenzene	14.149	91	138382	10.00	ug/L		99
92) m,p-xylene	14.269	106	106423	20.10	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212481.D
Acq On : 3 Mar 2017 3:38 pm
Operator : [redacted]
Sample : ic9728-10
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 06 09:16:02 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:15:06 2017
Response via : Initial Calibration

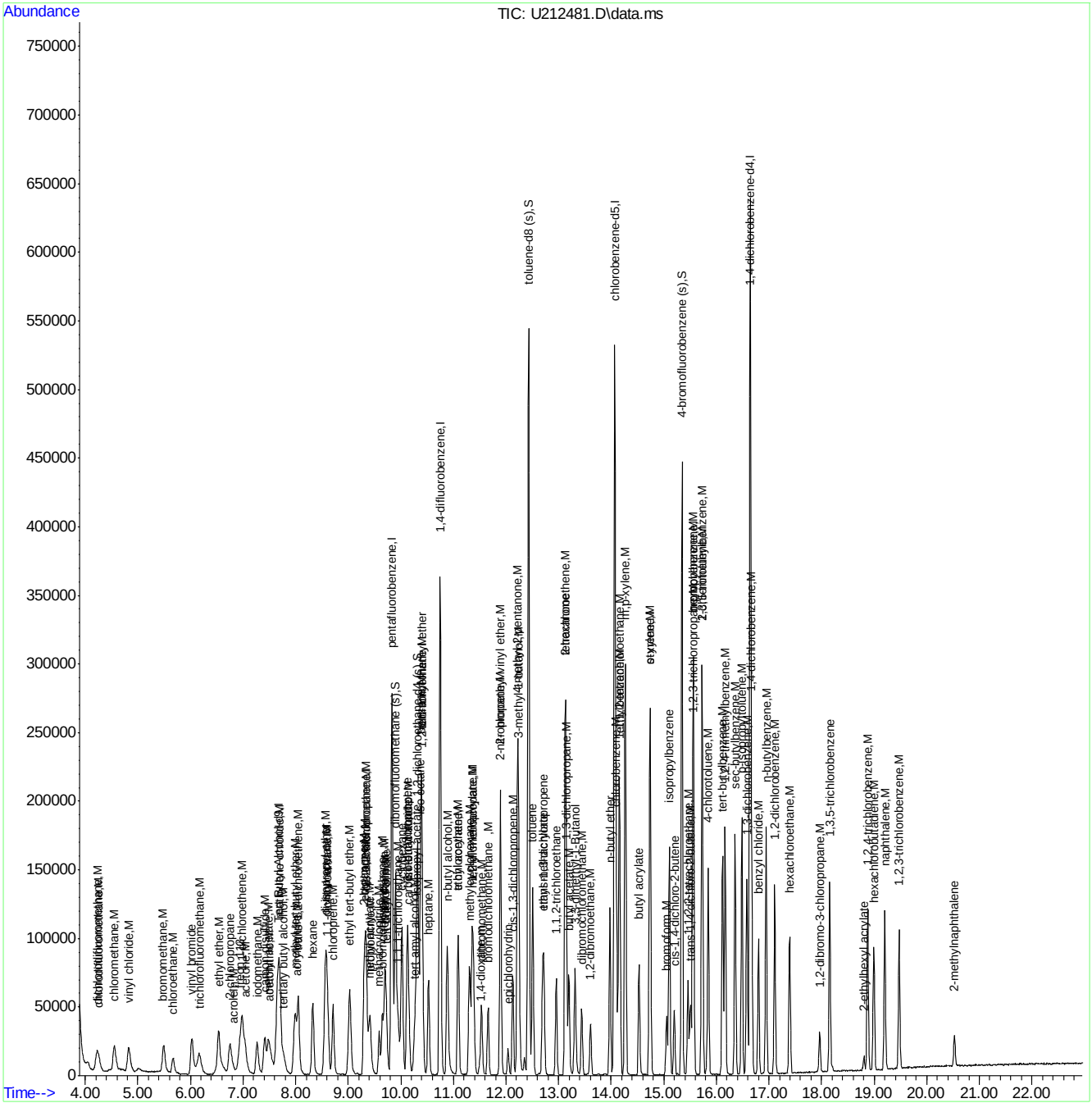
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
93) o-xylene	14.735	106	52965	9.99	ug/L		96
94) styrene	14.745	104	90629	10.11	ug/L		96
95) butyl acrylate	14.526	55	64414	9.94	ug/L		99
96) bromoform	15.054	173	25007	9.91	ug/L		96
97) isopropylbenzene	15.106	105	138920	9.92	ug/L		98
98) cis-1,4-dichloro-2-butene	15.200	88	13612	10.91	ug/L		94
102) bromobenzene	15.566	156	39094	10.17	ug/L		99
103) 1,1,2,2-tetrachloroethane	15.462	83	42383	9.94	ug/L		99
104) trans-1,4-dichloro-2-b...	15.504	53	11870	9.53	ug/L		97
105) 1,2,3-trichloropropane	15.545	110	10959	10.08	ug/L		98
106) n-propylbenzene	15.561	91	165013	9.69	ug/L		100
107) 2-chlorotoluene	15.734	126	34412	9.82	ug/L		99
108) 4-chlorotoluene	15.844	91	102614	9.78	ug/L		97
109) 1,3,5-trimethylbenzene	15.728	105	117359	9.80	ug/L		98
110) tert-butylbenzene	16.121	119	102761	9.67	ug/L		100
111) 1,2,4-trimethylbenzene	16.168	105	120503	9.87	ug/L		100
112) sec-butylbenzene	16.356	105	150892	9.72	ug/L		100
113) 1,3-dichlorobenzene	16.581	146	74093	9.88	ug/L		99
114) p-isopropyltoluene	16.487	119	133004	9.72	ug/L		99
115) 1,4-dichlorobenzene	16.670	146	72946	9.65	ug/L		98
116) benzyl chloride	16.801	91	85406	9.93	ug/L		98
117) 1,2-dichlorobenzene	17.109	146	69910	9.76	ug/L		99
118) n-butylbenzene	16.947	92	65891	9.78	ug/L		99
119) 1,2-dibromo-3-chloropr...	17.962	157	10655	10.85	ug/L		99
120) 1,3,5-trichlorobenzene	18.155	180	56682	9.67	ug/L		99
121) 2-ethylhexyl acrylate	18.804	70	3966	1.80	ug/L	#	86
122) 1,2,4-trichlorobenzene	18.877	180	50627	9.93	ug/L		96
123) hexachlorobutadiene	18.992	225	27044	9.35	ug/L		96
124) naphthalene	19.201	128	116723	10.01	ug/L		100
125) 1,2,3-trichlorobenzene	19.473	180	43076	10.21	ug/L		97
126) hexachloroethane	17.392	201	25126	10.43	ug/L		97
127) 2-methylnaphthalene	20.524	142	14553	6.79	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212481.D
Acq On : 3 Mar 2017 3:38 pm
Operator : [redacted]
Sample : ic9728-10
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 06 09:16:02 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:15:06 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212482.D
Acq On : 3 Mar 2017 4:07 pm
Operator : [redacted]
Sample : ic9728-20
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 06 09:17:37 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:16:45 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.663	65	210243	500.00	ug/L	0.00
5) pentafluorobenzene	9.829	168	269434	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.744	114	378065	50.00	ug/L	0.00
75) chlorobenzene-d5	14.065	117	355751	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.643	152	200550	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.897	113	114533	50.86	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 101.72%			
55) 1,2-dichloroethane-d4 (s)	10.315	65	131354	49.64	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 99.28%			
76) toluene-d8 (s)	12.428	98	443397	49.81	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 99.62%			
101) 4-bromofluorobenzene (s)	15.346	95	174955	50.21	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 100.42%			
Target Compounds						Qvalue
2) tertiary butyl alcohol	7.773	59	56532	116.52	ug/L	91
4) 1,4-dioxane	11.513	88	22123	631.40	ug/L	93
7) chlorodifluoromethane	4.238	51	43313	19.65	ug/L	99
8) dichlorodifluoromethane	4.217	85	71043	21.54	ug/L	97
9) chloromethane	4.557	50	90225	20.03	ug/L	99
10) vinyl chloride	4.823	62	86190	20.67	ug/L	99
11) bromomethane	5.493	94	51863	20.06	ug/L	97
12) chloroethane	5.665	64	42106	21.11	ug/L	99
13) trichlorofluoromethane	6.162	101	80032	21.99	ug/L	94
14) vinyl bromide	6.026	106	79477	20.46	ug/L	100
15) ethyl ether	6.528	74	33573	21.76	ug/L	97
16) 2-chloropropane	6.748	43	82386	19.01	ug/L	98
17) acrolein	6.816	56	12967	20.66	ug/L	91
18) freon 113	6.942	151	40779	22.56	ug/L	97
19) 1,1-dichloroethene	6.983	96	51885	19.33	ug/L	99
20) acetone	7.031	58	31668	93.07	ug/L	92
21) acetonitrile	7.501	41	99377	190.83	ug/L	97
22) iodomethane	7.266	142	100542	20.68	ug/L	98
23) carbon disulfide	7.412	76	164495	18.89	ug/L	99
24) methylene chloride	7.695	84	58316	20.38	ug/L	97
25) methyl acetate	7.475	43	57094	18.56	ug/L	99
26) methyl tert butyl ether	7.988	73	174839	20.45	ug/L	99
27) trans-1,2-dichloroethene	8.050	96	54460	19.73	ug/L	95
28) hexane	8.322	57	76446	19.24	ug/L	99
29) di-isopropyl ether	8.563	45	202435	20.03	ug/L	93
30) ethyl tert-butyl ether	9.023	59	186117	20.07	ug/L	98
31) 2-butanone	9.300	72	42616	105.93	ug/L	100
32) 1,1-dichloroethane	8.610	63	106040	20.69	ug/L	99
33) chloroprene	8.709	53	88307	20.40	ug/L	98
34) acrylonitrile	8.019	53	28008	22.87	ug/L	96
35) vinyl acetate	8.584	86	12476	22.09	ug/L #	87
36) ethyl acetate	9.311	45	12117	22.12	ug/L	72
37) 2,2-dichloropropane	9.337	77	74359	19.00	ug/L	100

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212482.D
Acq On : 3 Mar 2017 4:07 pm
Operator : [redacted]
Sample : ic9728-20
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 06 09:17:37 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:16:45 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
38) cis-1,2-dichloroethene	9.337	96	61215	20.26	ug/L		98
39) methyl acrylate	9.395	85	10883	22.00	ug/L		95
40) propionitrile	9.415	54	110264	211.35	ug/L		96
41) bromochloromethane	9.646	128	30968	21.19	ug/L		97
42) tetrahydrofuran	9.687	42	29164	18.54	ug/L		97
43) chloroform	9.698	83	97161	18.83	ug/L		98
44) tert-butyl Formate	9.724	59	60572	20.54	ug/L		99
45) iso-butyl alcohol	10.132	43	48034	176.85	ug/L		99
47) methacrylonitrile	9.588	67	29979	20.63	ug/L		98
48) 1,1,1-trichloroethane	9.944	97	77610	20.03	ug/L		98
49) cyclohexane	10.017	84	69684	20.00	ug/L	#	83
50) 1,1-dichloropropene	10.121	75	76833	20.23	ug/L		99
51) carbon tetrachloride	10.142	117	72902	20.52	ug/L		98
52) tert amyl alcohol	10.258	73	28634	101.18	ug/L		93
53) isopropyl acetate	10.289	87	14883	21.02	ug/L	#	95
56) iso-octane	10.367	57	188602	19.09	ug/L		98
57) n-butyl alcohol	10.880	56	149734	951.19	ug/L		98
58) benzene	10.383	78	221392	19.42	ug/L		99
59) tert-amyl methyl ether	10.399	73	175121	19.32	ug/L		98
60) heptane	10.524	57	41124	19.40	ug/L		98
61) 1,2-dichloroethane	10.404	62	77307	20.27	ug/L		100
62) ethyl acrylate	11.084	55	89648	20.69	ug/L		99
63) trichloroethene	11.089	95	56683	19.98	ug/L		98
64) methylcyclohexane	11.304	83	88356	18.86	ug/L		98
65) 2-nitropropane	11.889	46	1263	21.88	ug/L	#	87
66) 2-chloroethyl vinyl ether	11.895	63	199481	98.30	ug/L		98
67) methyl methacrylate	11.351	100	18489	20.99	ug/L		96
68) 1,2-dichloropropane	11.366	63	61000	20.01	ug/L		99
69) dibromomethane	11.534	93	37928	21.32	ug/L		96
70) bromodichloromethane	11.659	83	77947	20.42	ug/L		98
71) epichlorohydrin	12.041	57	40669	94.29	ug/L		99
72) cis-1,3-dichloropropene	12.130	75	101836	20.67	ug/L		99
73) 4-methyl-2-pentanone	12.219	58	147428	101.45	ug/L		100
74) 3-methyl-1-butanol	12.245	55	97350	126.14	ug/L		98
77) toluene	12.506	92	139614	19.71	ug/L		97
78) ethyl methacrylate	12.695	69	89830	20.60	ug/L		99
79) trans-1,3-dichloropropene	12.721	75	92781	20.64	ug/L		99
80) 1,1,2-trichloroethane	12.956	83	47262	19.89	ug/L		98
81) 2-hexanone	13.124	58	153315	98.74	ug/L		97
82) tetrachloroethene	13.134	164	50817	20.13	ug/L		96
83) 1,3-dichloropropane	13.150	76	90163	20.24	ug/L		99
84) butyl acetate	13.197	56	50649	19.27	ug/L		97
85) dibromochloromethane	13.437	129	66018	20.72	ug/L		99
86) 1,2-dibromoethane	13.605	107	62704	21.03	ug/L		96
87) 3,3-dimethyl-1-Butanol	13.312	57	94202	175.68	ug/L		99
88) n-butyl ether	13.976	57	248737	20.10	ug/L		98
89) chlorobenzene	14.102	112	162632	19.52	ug/L		99
90) 1,1,1,2-tetrachloroethane	14.164	131	60096	20.65	ug/L		97
91) ethylbenzene	14.154	91	270822	19.43	ug/L		99
92) m,p-xylene	14.269	106	210011	39.36	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212482.D
Acq On : 3 Mar 2017 4:07 pm
Operator : [redacted]
Sample : ic9728-20
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 06 09:17:37 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:16:45 2017
Response via : Initial Calibration

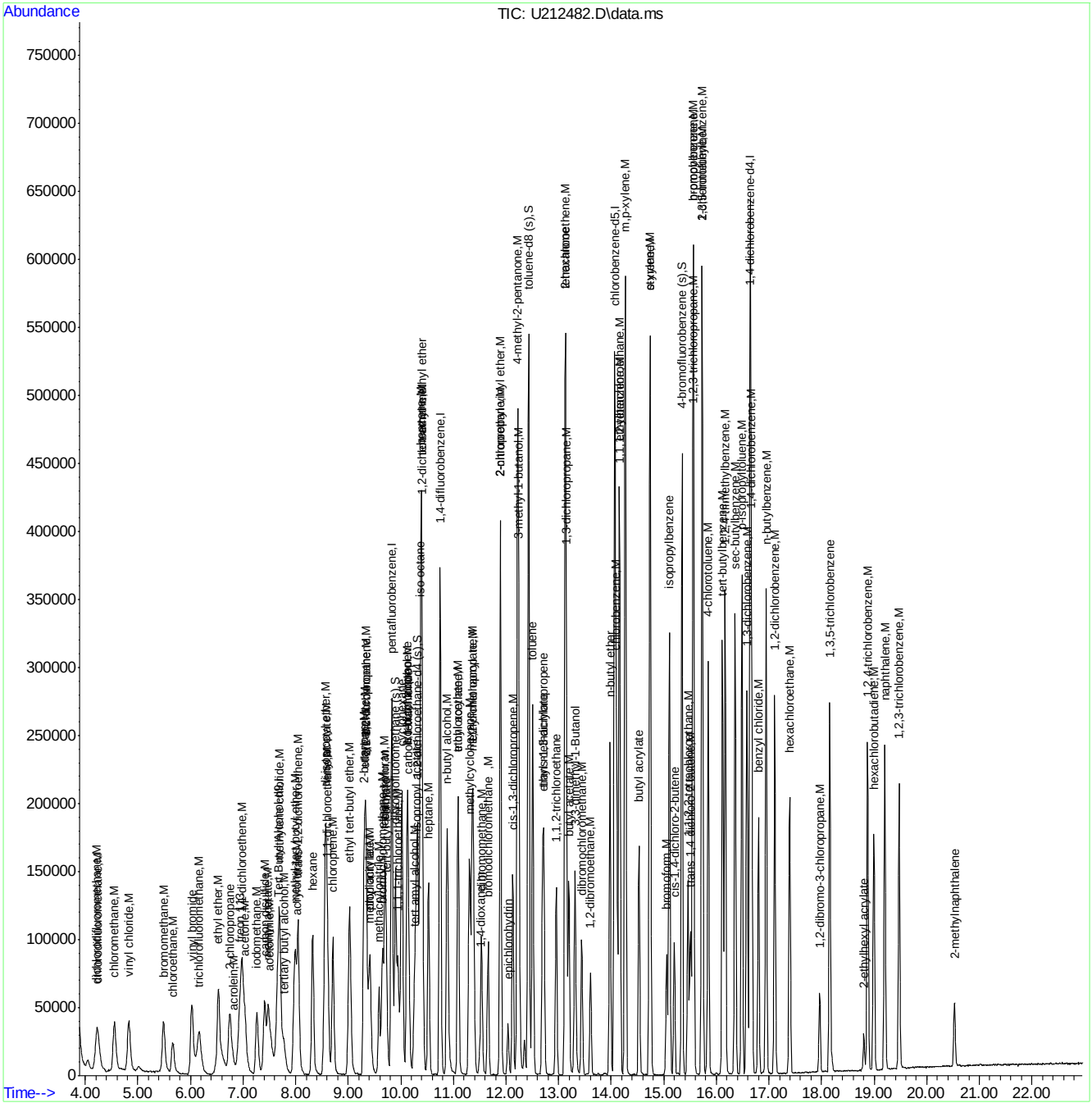
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
93) o-xylene	14.734	106	105740	19.80	ug/L	100
94) styrene	14.745	104	183449	20.28	ug/L	97
95) butyl acrylate	14.525	55	131811	20.21	ug/L	100
96) bromoform	15.054	173	52753	20.79	ug/L	98
97) isopropylbenzene	15.106	105	273444	19.41	ug/L	100
98) cis-1,4-dichloro-2-butene	15.195	88	28667	22.47	ug/L	97
102) bromobenzene	15.566	156	79477	20.45	ug/L	98
103) 1,1,2,2-tetrachloroethane	15.461	83	86352	20.11	ug/L	96
104) trans-1,4-dichloro-2-b...	15.503	53	24990	19.79	ug/L	97
105) 1,2,3-trichloropropane	15.545	110	22501	20.49	ug/L	96
106) n-propylbenzene	15.561	91	328959	19.24	ug/L	100
107) 2-chlorotoluene	15.733	126	68804	19.52	ug/L	96
108) 4-chlorotoluene	15.843	91	205058	19.44	ug/L	100
109) 1,3,5-trimethylbenzene	15.728	105	233041	19.35	ug/L	99
110) tert-butylbenzene	16.115	119	202187	18.97	ug/L	99
111) 1,2,4-trimethylbenzene	16.168	105	241020	19.61	ug/L	98
112) sec-butylbenzene	16.356	105	298617	19.15	ug/L	100
113) 1,3-dichlorobenzene	16.581	146	148377	19.65	ug/L	100
114) p-isopropyltoluene	16.487	119	264664	19.26	ug/L	99
115) 1,4-dichlorobenzene	16.670	146	147795	19.48	ug/L	99
116) benzyl chloride	16.800	91	162403	18.75	ug/L	98
117) 1,2-dichlorobenzene	17.109	146	141993	19.73	ug/L	99
118) n-butylbenzene	16.947	92	132174	19.52	ug/L	99
119) 1,2-dibromo-3-chloropr...	17.967	157	22215	22.13	ug/L	97
120) 1,3,5-trichlorobenzene	18.155	180	113708	19.32	ug/L	99
121) 2-ethylhexyl acrylate	18.804	70	9403	4.37	ug/L	87
122) 1,2,4-trichlorobenzene	18.872	180	103737	20.20	ug/L	99
123) hexachlorobutadiene	18.992	225	54675	18.91	ug/L	97
124) naphthalene	19.201	128	238526	20.29	ug/L	99
125) 1,2,3-trichlorobenzene	19.473	180	88183	20.66	ug/L	98
126) hexachloroethane	17.391	201	50755	20.75	ug/L	99
127) 2-methylnaphthalene	20.529	142	31118	13.44	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212482.D
Acq On : 3 Mar 2017 4:07 pm
Operator : [redacted]
Sample : ic9728-20
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 06 09:17:37 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:16:45 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212483.D
Acq On : 3 Mar 2017 4:36 pm
Operator : [redacted]
Sample : icc9728-50
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 06 08:40:03 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:36:54 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.663	65	203202	500.00	ug/L	0.00
5) pentafluorobenzene	9.829	168	268133	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.744	114	380750	50.00	ug/L	0.00
75) chlorobenzene-d5	14.065	117	358678	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.644	152	202671	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.897	113	112874	50.00	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 100.00%			
55) 1,2-dichloroethane-d4 (s)	10.315	65	130208	50.00	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 100.00%			
76) toluene-d8 (s)	12.428	98	441781	50.00	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 100.00%			
101) 4-bromofluorobenzene (s)	15.341	95	177297	50.00	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 100.00%			
Target Compounds						Qvalue
2) tertiary butyl alcohol	7.778	59	141128	250.00	ug/L	100
4) 1,4-dioxane	11.502	88	54990	1250.00	ug/L	100
7) chlorodifluoromethane	4.243	51	121492	50.00	ug/L	100
8) dichlorodifluoromethane	4.222	85	193314	50.00	ug/L	100
9) chloromethane	4.572	50	230531	50.00	ug/L	100
10) vinyl chloride	4.839	62	229208	50.00	ug/L	100
11) bromomethane	5.498	94	120873	50.00	ug/L	100
12) chloroethane	5.660	64	104305	50.00	ug/L	100
13) trichlorofluoromethane	6.162	101	215648	50.00	ug/L	100
14) vinyl bromide	6.037	106	205003	50.00	ug/L	100
15) ethyl ether	6.534	74	85053	50.00	ug/L	100
16) 2-chloropropane	6.748	43	225380	50.00	ug/L	100
17) acrolein	6.821	56	31636	50.00	ug/L	100
18) freon 113	6.936	151	111882	50.00	ug/L	100
19) 1,1-dichloroethene	6.989	96	137417	50.00	ug/L	100
20) acetone	7.036	58	82153	250.00	ug/L	100
21) acetonitrile	7.496	41	252246	501.89	ug/L	100
22) iodomethane	7.266	142	262178	50.00	ug/L	100
23) carbon disulfide	7.418	76	434861	50.00	ug/L	100
24) methylene chloride	7.695	84	146656	50.00	ug/L	100
25) methyl acetate	7.470	43	145267	50.00	ug/L	100
26) methyl tert butyl ether	7.988	73	440725	50.00	ug/L	100
27) trans-1,2-dichloroethene	8.050	96	141181	50.00	ug/L	100
28) hexane	8.322	57	206782	50.00	ug/L	100
29) di-isopropyl ether	8.563	45	509730	50.00	ug/L	100
30) ethyl tert-butyl ether	9.028	59	472437	50.00	ug/L	100
31) 2-butanone	9.300	72	107726	250.00	ug/L	100
32) 1,1-dichloroethane	8.610	63	265392	50.00	ug/L	100
33) chloroprene	8.709	53	228820	50.00	ug/L	100
34) acrylonitrile	8.019	53	69613	50.00	ug/L	100
35) vinyl acetate	8.584	86	31590	50.00	ug/L	100
36) ethyl acetate	9.306	45	29951	50.00	ug/L	100
37) 2,2-dichloropropane	9.332	77	190767	50.00	ug/L	100

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212483.D
Acq On : 3 Mar 2017 4:36 pm
Operator : [redacted]
Sample : icc9728-50
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 06 08:40:03 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:36:54 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
38) cis-1,2-dichloroethene	9.337	96	153002	50.00	ug/L	100
39) methyl acrylate	9.384	85	27540	50.00	ug/L	100
40) propionitrile	9.416	54	271477	500.00	ug/L	100
41) bromochloromethane	9.651	128	77785	50.00	ug/L	100
42) tetrahydrofuran	9.682	42	70849	50.00	ug/L	100
43) chloroform	9.698	83	244264	50.00	ug/L	100
44) tert-butyl Formate	9.724	59	155774	50.00	ug/L	100
45) iso-butyl alcohol	10.132	43	120017	500.08	ug/L	100
47) methacrylonitrile	9.588	67	73560	50.00	ug/L	100
48) 1,1,1-trichloroethane	9.949	97	206411	50.00	ug/L	100
49) cyclohexane	10.012	84	192657	50.00	ug/L	100
50) 1,1-dichloropropene	10.122	75	202105	50.00	ug/L	100
51) carbon tetrachloride	10.148	117	193457	50.00	ug/L	100
52) tert amyl alcohol	10.258	73	70691	250.00	ug/L	100
53) isopropyl acetate	10.284	87	38006	50.00	ug/L	100
56) iso-octane	10.373	57	522872	50.00	ug/L	100
57) n-butyl alcohol	10.880	56	377250	2500.00	ug/L	100
58) benzene	10.383	78	563085	50.00	ug/L	100
59) tert-amyl methyl ether	10.399	73	443811	50.00	ug/L	100
60) heptane	10.524	57	113784	50.00	ug/L	100
61) 1,2-dichloroethane	10.404	62	192602	50.00	ug/L	100
62) ethyl acrylate	11.079	55	223690	50.00	ug/L	100
63) trichloroethene	11.089	95	148514	50.00	ug/L	100
64) methylcyclohexane	11.309	83	242544	50.00	ug/L	100
65) 2-nitropropane	11.889	46	3741	50.00	ug/L	100
66) 2-chloroethyl vinyl ether	11.895	63	525955	250.00	ug/L	100
67) methyl methacrylate	11.351	100	46984	50.00	ug/L	100
68) 1,2-dichloropropane	11.366	63	153054	50.00	ug/L	100
69) dibromomethane	11.534	93	95195	50.00	ug/L	100
70) bromodichloromethane	11.659	83	199712	50.00	ug/L	100
71) epichlorohydrin	12.041	57	102853	250.00	ug/L	100
72) cis-1,3-dichloropropene	12.130	75	259834	50.00	ug/L	100
73) 4-methyl-2-pentanone	12.219	58	361532	250.00	ug/L	100
74) 3-methyl-1-butanol	12.240	55	241890	1000.00	ug/L	100
77) toluene	12.507	92	359491	50.00	ug/L	100
78) ethyl methacrylate	12.695	69	228206	50.00	ug/L	100
79) trans-1,3-dichloropropene	12.721	75	236103	50.00	ug/L	100
80) 1,1,2-trichloroethane	12.951	83	120203	50.00	ug/L	100
81) 2-hexanone	13.124	58	382147	250.00	ug/L	100
82) tetrachloroethene	13.129	164	135245	50.00	ug/L	100
83) 1,3-dichloropropane	13.150	76	229438	50.00	ug/L	100
84) butyl acetate	13.192	56	127598	50.00	ug/L	100
85) dibromochloromethane	13.437	129	170844	50.00	ug/L	100
86) 1,2-dibromoethane	13.605	107	159484	50.00	ug/L	100
87) 3,3-dimethyl-1-Butanol	13.312	57	236758	500.00	ug/L	100
88) n-butyl ether	13.976	57	636587	50.00	ug/L	100
89) chlorobenzene	14.102	112	419398	50.00	ug/L	100
90) 1,1,1,2-tetrachloroethane	14.164	131	154515	50.00	ug/L	100
91) ethylbenzene	14.154	91	702762	50.00	ug/L	100
92) m,p-xylene	14.269	106	549071	100.00	ug/L	100

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212483.D
Acq On : 3 Mar 2017 4:36 pm
Operator : [redacted]
Sample : icc9728-50
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 06 08:40:03 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:36:54 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
93) o-xylene	14.729	106	272942	50.00	ug/L	100
94) styrene	14.745	104	470405	50.00	ug/L	100
95) butyl acrylate	14.525	55	337332	50.00	ug/L	100
96) bromoform	15.054	173	138806	50.00	ug/L	100
97) isopropylbenzene	15.106	105	716821	50.00	ug/L	100
98) cis-1,4-dichloro-2-butene	15.200	88	72527	50.00	ug/L	100
102) bromobenzene	15.566	156	202136	50.00	ug/L	100
103) 1,1,2,2-tetrachloroethane	15.462	83	217304	50.00	ug/L	100
104) trans-1,4-dichloro-2-b...	15.503	53	64429	50.00	ug/L	100
105) 1,2,3-trichloropropane	15.545	110	57226	50.00	ug/L	100
106) n-propylbenzene	15.561	91	854908	50.00	ug/L	100
107) 2-chlorotoluene	15.734	126	180218	50.00	ug/L	100
108) 4-chlorotoluene	15.843	91	528074	50.00	ug/L	100
109) 1,3,5-trimethylbenzene	15.723	105	608323	50.00	ug/L	100
110) tert-butylbenzene	16.115	119	537401	50.00	ug/L	100
111) 1,2,4-trimethylbenzene	16.168	105	619911	50.00	ug/L	100
112) sec-butylbenzene	16.356	105	798540	50.00	ug/L	100
113) 1,3-dichlorobenzene	16.581	146	383841	50.00	ug/L	100
114) p-isopropyltoluene	16.487	119	697108	50.00	ug/L	100
115) 1,4-dichlorobenzene	16.670	146	382739	50.00	ug/L	100
116) benzyl chloride	16.800	91	418766	50.00	ug/L	100
117) 1,2-dichlorobenzene	17.109	146	365321	50.00	ug/L	100
118) n-butylbenzene	16.947	92	352974	50.00	ug/L	100
119) 1,2-dibromo-3-chloropr...	17.967	157	56639	50.00	ug/L	100
120) 1,3,5-trichlorobenzene	18.155	180	295087	50.00	ug/L	100
121) 2-ethylhexyl acrylate	18.804	70	27272	10.00	ug/L	100
122) 1,2,4-trichlorobenzene	18.877	180	272002	50.00	ug/L	100
123) hexachlorobutadiene	18.992	225	148163	50.00	ug/L	100
124) naphthalene	19.201	128	617809	50.00	ug/L	100
125) 1,2,3-trichlorobenzene	19.473	180	228930	50.00	ug/L	100
126) hexachloroethane	17.391	201	135680	50.00	ug/L	100
127) 2-methylnaphthalene	20.530	142	82363	25.00	ug/L	100

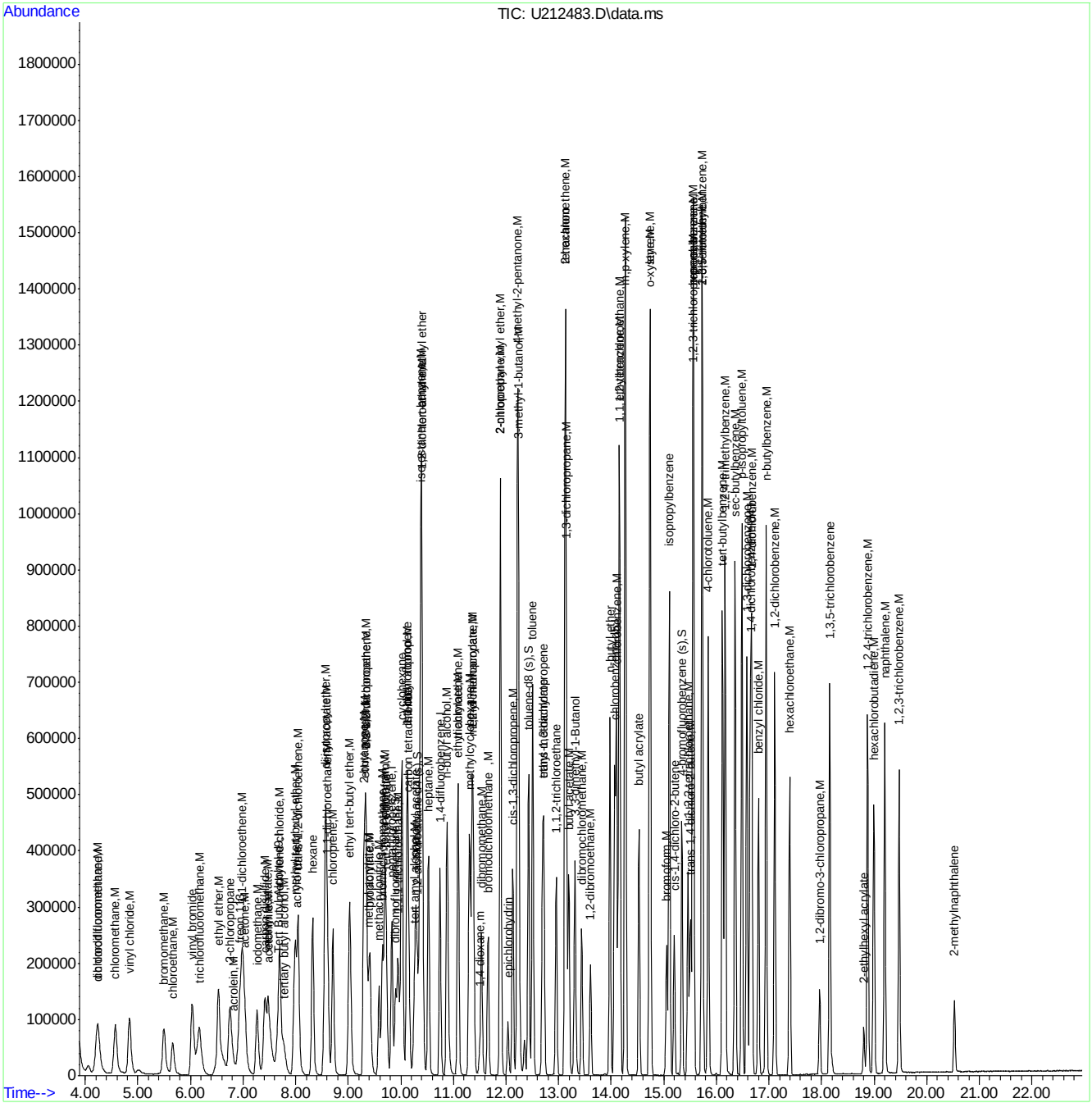
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212483.D
Acq On : 3 Mar 2017 4:36 pm
Operator : [redacted]
Sample : icc9728-50
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 06 08:40:03 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 08:36:54 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212484.D
Acq On : 3 Mar 2017 5:05 pm
Operator : [redacted]
Sample : ic9728-100
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 06 09:18:53 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:17:58 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.675	65	186426	500.00	ug/L	0.01
5) pentafluorobenzene	9.830	168	272029	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.745	114	390256	50.00	ug/L	0.00
75) chlorobenzene-d5	14.066	117	363821	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.644	152	205227	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.898	113	114521	50.27	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 100.54%			
55) 1,2-dichloroethane-d4 (s)	10.316	65	130604	47.86	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 95.72%			
76) toluene-d8 (s)	12.429	98	452077	49.68	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 99.36%			
101) 4-bromofluorobenzene (s)	15.342	95	180369	50.55	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 101.10%			
Target Compounds						Qvalue
2) tertiary butyl alcohol	7.785	59	258700	585.24	ug/L	95
4) 1,4-dioxane	11.508	88	105226	3244.76	ug/L	97
7) chlorodifluoromethane	4.254	51	241104	108.68	ug/L	98
8) dichlorodifluoromethane	4.218	85	388829	115.29	ug/L	98
9) chloromethane	4.579	50	469000	103.10	ug/L	100
10) vinyl chloride	4.851	62	461375	109.09	ug/L	99
11) bromomethane	5.504	94	231315	88.59	ug/L	99
12) chloroethane	5.661	64	140129	69.04	ug/L	99
13) trichlorofluoromethane	6.163	101	433984	116.46	ug/L	97
14) vinyl bromide	6.033	106	414600	105.41	ug/L	99
15) ethyl ether	6.535	74	170400	108.02	ug/L	94
16) 2-chloropropane	6.749	43	471966	108.61	ug/L	99
17) acrolein	6.817	56	61372	96.20	ug/L	93
18) freon 113	6.943	151	218390	117.50	ug/L	99
19) 1,1-dichloroethene	6.990	96	273913	101.49	ug/L	99
20) acetone	7.037	58	153231	451.24	ug/L	93
21) acetonitrile	7.502	41	460703	884.33	ug/L	99
22) iodomethane	7.267	142	522608	105.96	ug/L	99
23) carbon disulfide	7.418	76	853942	97.80	ug/L	99
24) methylene chloride	7.701	84	291075	100.47	ug/L	97
25) methyl acetate	7.476	43	274716	89.54	ug/L	98
26) methyl tert butyl ether	7.989	73	866822	100.14	ug/L	99
27) trans-1,2-dichloroethene	8.051	96	279564	100.51	ug/L	99
28) hexane	8.323	57	403771	101.20	ug/L	99
29) di-isopropyl ether	8.564	45	995238	97.52	ug/L	99
30) ethyl tert-butyl ether	9.029	59	930302	99.29	ug/L	100
31) 2-butanone	9.296	72	204272	498.68	ug/L	98
32) 1,1-dichloroethane	8.611	63	528129	101.60	ug/L	99
33) chloroprene	8.710	53	451783	103.07	ug/L	98
34) acrylonitrile	8.020	53	132978	105.03	ug/L	98
35) vinyl acetate	8.580	86	61026	104.81	ug/L #	79
36) ethyl acetate	9.301	45	56827	100.96	ug/L	90
37) 2,2-dichloropropane	9.338	77	373906	95.31	ug/L	99

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212484.D
Acq On : 3 Mar 2017 5:05 pm
Operator : [redacted]
Sample : ic9728-100
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 06 09:18:53 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:17:58 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
38) cis-1,2-dichloroethene	9.338	96	305189	99.86 ug/L		99
39) methyl acrylate	9.390	85	54106	106.22 ug/L		97
40) propionitrile	9.416	54	511112	962.54 ug/L		99
41) bromochloromethane	9.652	128	155871	104.73 ug/L		99
42) tetrahydrofuran	9.683	42	132988	84.99 ug/L		97
43) chloroform	9.699	83	488174	94.51 ug/L		99
44) tert-butyl Formate	9.720	59	302172	101.09 ug/L		97
45) iso-butyl alcohol	10.133	43	217336	805.86 ug/L		99
47) methacrylonitrile	9.589	67	142885	96.87 ug/L		97
48) 1,1,1-trichloroethane	9.945	97	412948	105.53 ug/L		99
49) cyclohexane	10.018	84	375009	106.59 ug/L	#	82
50) 1,1-dichloropropene	10.122	75	407535	106.11 ug/L		99
51) carbon tetrachloride	10.143	117	391193	108.71 ug/L		98
52) tert amyl alcohol	10.258	73	128870	450.27 ug/L		97
53) isopropyl acetate	10.285	87	72461	100.52 ug/L	#	91
56) iso-octane	10.368	57	1006429	99.35 ug/L		99
57) n-butyl alcohol	10.886	56	697464	4318.62 ug/L		99
58) benzene	10.384	78	1120035	95.54 ug/L		100
59) tert-amyl methyl ether	10.400	73	875816	94.07 ug/L		100
60) heptane	10.525	57	222746	102.21 ug/L		95
61) 1,2-dichloroethane	10.405	62	380995	96.60 ug/L		99
62) ethyl acrylate	11.080	55	434300	96.62 ug/L		98
63) trichloroethene	11.090	95	298642	102.00 ug/L		100
64) methylcyclohexane	11.305	83	480163	100.01 ug/L		98
65) 2-nitropropane	11.890	46	6925	113.57 ug/L	#	86
66) 2-chloroethyl vinyl ether	11.896	63	1035148	495.23 ug/L		100
67) methyl methacrylate	11.352	100	92233	100.62 ug/L		98
68) 1,2-dichloropropane	11.367	63	305700	97.15 ug/L		99
69) dibromomethane	11.535	93	190294	102.66 ug/L		99
70) bromodichloromethane	11.660	83	404208	102.33 ug/L		99
71) epichlorohydrin	12.037	57	194971	441.50 ug/L		100
72) cis-1,3-dichloropropene	12.131	75	523024	102.43 ug/L		99
73) 4-methyl-2-pentanone	12.220	58	686338	456.57 ug/L		97
74) 3-methyl-1-butanol	12.241	55	430876	591.50 ug/L		99
77) toluene	12.507	92	725788	100.38 ug/L		100
78) ethyl methacrylate	12.696	69	448882	100.26 ug/L		100
79) trans-1,3-dichloropropene	12.722	75	470146	101.87 ug/L		99
80) 1,1,2-trichloroethane	12.952	83	240036	98.83 ug/L		98
81) 2-hexanone	13.125	58	719338	453.73 ug/L		99
82) tetrachloroethene	13.130	164	268980	104.12 ug/L		98
83) 1,3-dichloropropane	13.151	76	452466	99.17 ug/L		100
84) butyl acetate	13.193	56	247679	92.60 ug/L		99
85) dibromochloromethane	13.438	129	344570	105.20 ug/L		100
86) 1,2-dibromoethane	13.606	107	319973	104.28 ug/L		100
87) 3,3-dimethyl-1-Butanol	13.313	57	423089	783.44 ug/L		99
88) n-butyl ether	13.977	57	1279126	101.01 ug/L		100
89) chlorobenzene	14.103	112	838168	98.68 ug/L		99
90) 1,1,1,2-tetrachloroethane	14.165	131	312838	104.70 ug/L		99
91) ethylbenzene	14.150	91	1398423	98.45 ug/L		100
92) m,p-xylene	14.270	106	1095922	201.25 ug/L		98

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212484.D
Acq On : 3 Mar 2017 5:05 pm
Operator : [redacted]
Sample : ic9728-100
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 06 09:18:53 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:17:58 2017
Response via : Initial Calibration

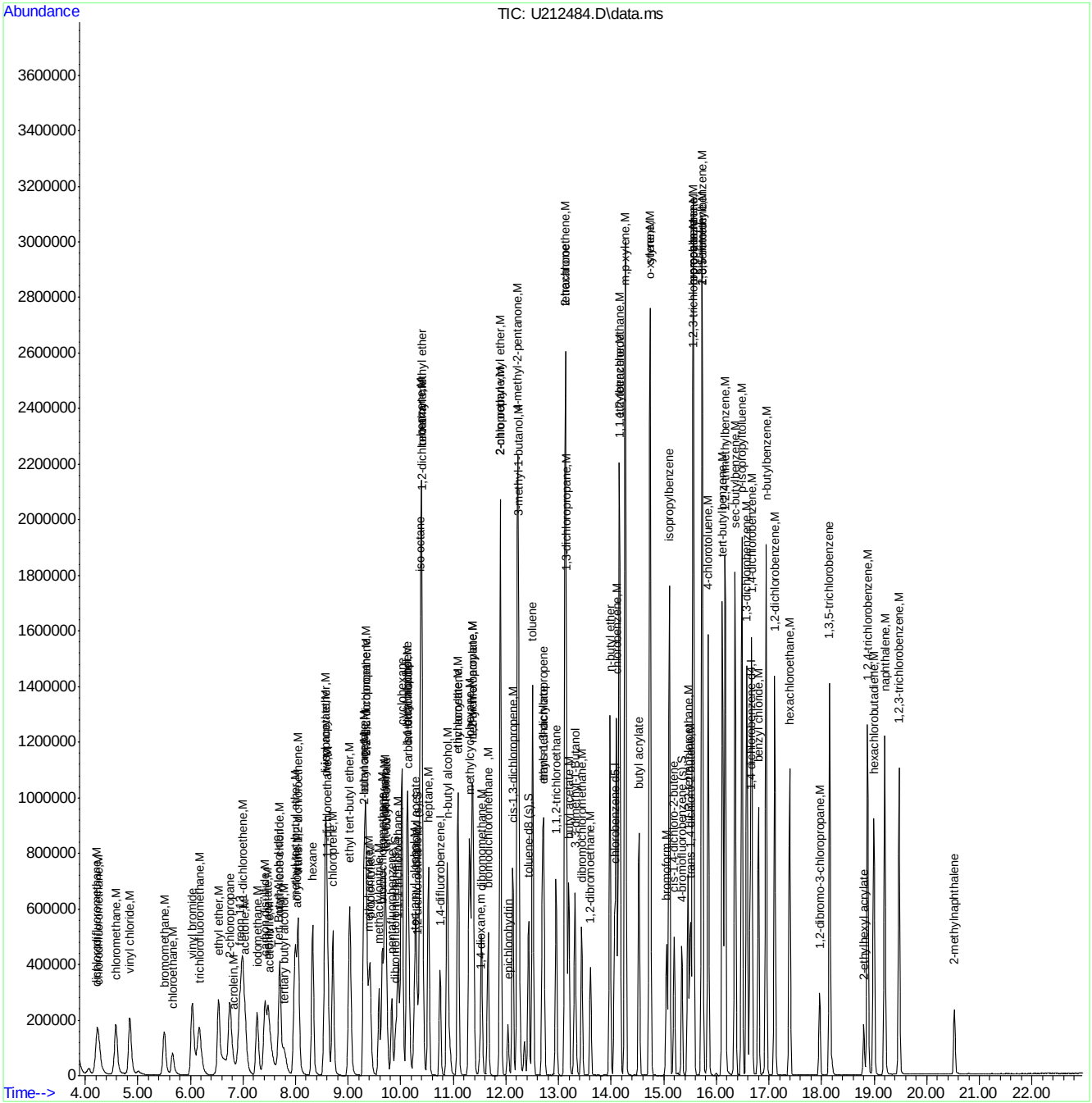
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
93) o-xylene	14.730	106	549479	100.76	ug/L	99
94) styrene	14.746	104	940731	101.52	ug/L	99
95) butyl acrylate	14.526	55	668330	100.08	ug/L	99
96) bromoform	15.055	173	281463	107.85	ug/L	100
97) isopropylbenzene	15.107	105	1437824	100.17	ug/L	99
98) cis-1,4-dichloro-2-butene	15.196	88	143547	108.13	ug/L	98
102) bromobenzene	15.567	156	406232	101.88	ug/L	98
103) 1,1,2,2-tetrachloroethane	15.462	83	432158	98.27	ug/L	98
104) trans-1,4-dichloro-2-b...	15.504	53	126810	97.19	ug/L	99
105) 1,2,3-trichloropropane	15.546	110	112163	99.46	ug/L	96
106) n-propylbenzene	15.562	91	1716236	98.55	ug/L	100
107) 2-chlorotoluene	15.734	126	360488	100.24	ug/L	100
108) 4-chlorotoluene	15.844	91	1058440	98.40	ug/L	100
109) 1,3,5-trimethylbenzene	15.724	105	1228060	100.07	ug/L	99
110) tert-butylbenzene	16.116	119	1087480	100.33	ug/L	99
111) 1,2,4-trimethylbenzene	16.169	105	1237943	98.69	ug/L	99
112) sec-butylbenzene	16.357	105	1594633	100.45	ug/L	100
113) 1,3-dichlorobenzene	16.582	146	766503	99.44	ug/L	99
114) p-isopropyltoluene	16.488	119	1395268	99.67	ug/L	100
115) 1,4-dichlorobenzene	16.671	146	766007	98.98	ug/L	98
116) benzyl chloride	16.801	91	810845	92.30	ug/L	100
117) 1,2-dichlorobenzene	17.110	146	735475	100.04	ug/L	99
118) n-butylbenzene	16.948	92	710631	102.86	ug/L	100
119) 1,2-dibromo-3-chloropr...	17.962	157	109529	105.02	ug/L	97
120) 1,3,5-trichlorobenzene	18.156	180	593043	98.90	ug/L	98
121) 2-ethylhexyl acrylate	18.805	70	59655	26.50	ug/L	95
122) 1,2,4-trichlorobenzene	18.872	180	545203	103.62	ug/L	98
123) hexachlorobutadiene	18.993	225	291408	99.18	ug/L	99
124) naphthalene	19.202	128	1210607	100.44	ug/L	100
125) 1,2,3-trichlorobenzene	19.474	180	462528	105.46	ug/L	98
126) hexachloroethane	17.392	201	275808	109.61	ug/L	98
127) 2-methylnaphthalene	20.525	142	159794	63.78	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212484.D
Acq On : 3 Mar 2017 5:05 pm
Operator : [redacted]
Sample : ic9728-100
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Mar 06 09:18:53 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:17:58 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212485.D
Acq On : 3 Mar 2017 5:34 pm
Operator : [redacted]
Sample : ic9728-200
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 06 10:25:26 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:19:16 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Tert Butyl Alcohol-d9	7.681	65	181604	500.00	ug/L		0.02
5) pentafluorobenzene	9.830	168	278481	50.00	ug/L		0.00
54) 1,4-difluorobenzene	10.745	114	398793	50.00	ug/L		0.00
75) chlorobenzene-d5	14.067	117	372852	50.00	ug/L		0.00
100) 1,4-dichlorobenzene-d4	16.645	152	210230	50.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	9.898	113	115805	49.62	ug/L		0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 99.24%				
55) 1,2-dichloroethane-d4 (s)	10.317	65	136373	49.14	ug/L		0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 98.28%				
76) toluene-d8 (s)	12.430	98	464139	49.81	ug/L		0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 99.62%				
101) 4-bromofluorobenzene (s)	15.343	95	188608	51.54	ug/L		0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 103.08%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.790	59	507386	1150.29	ug/L		83
4) 1,4-dioxane	11.504	88	219475	6663.86	ug/L		98
7) chlorodifluoromethane	4.250	51	501049	217.91	ug/L		97
8) dichlorodifluoromethane	4.218	85	794877	225.30	ug/L		98
9) chloromethane	4.590	50	921301	197.07	ug/L		99
10) vinyl chloride	4.856	62	918221	209.70	ug/L		99
11) bromomethane	5.510	94	398640	151.29	ug/L		99
13) trichlorofluoromethane	6.148	101	880236	226.09	ug/L		99
14) vinyl bromide	6.028	106	812347	200.54	ug/L		99
15) ethyl ether	6.535	74	350166	214.67	ug/L		88
16) 2-chloropropane	6.744	43	1014763	225.68	ug/L		98
17) acrolein	6.823	56	124580	191.97	ug/L		98
18) freon 113	6.938	151	449613	231.25	ug/L		99
19) 1,1-dichloroethene	6.990	96	560496	202.52	ug/L		98
20) acetone	7.043	58	300271	875.97	ug/L		96
21) acetonitrile	7.503	41	909208	1738.32	ug/L		100
22) iodomethane	7.267	142	1067478	209.86	ug/L		99
23) carbon disulfide	7.419	76	1735766	194.67	ug/L		99
24) methylene chloride	7.696	84	597244	201.25	ug/L		97
25) methyl acetate	7.477	43	555858	179.67	ug/L		99
26) methyl tert butyl ether	7.989	73	1779560	200.79	ug/L		98
27) trans-1,2-dichloroethene	8.047	96	568302	199.46	ug/L		99
28) hexane	8.319	57	845033	206.59	ug/L		98
29) di-isopropyl ether	8.565	45	2002462	192.26	ug/L		96
30) ethyl tert-butyl ether	9.030	59	1901134	198.38	ug/L		99
31) 2-butanone	9.302	72	407103	971.14	ug/L		98
32) 1,1-dichloroethane	8.612	63	1071085	200.93	ug/L		100
33) chloroprene	8.706	53	917650	203.73	ug/L		99
34) acrylonitrile	8.021	53	272750	208.94	ug/L		98
35) vinyl acetate	8.580	86	125523	208.92	ug/L	#	88
36) ethyl acetate	9.307	45	111648	193.49	ug/L		98
37) 2,2-dichloropropane	9.339	77	739291	185.16	ug/L		99
38) cis-1,2-dichloroethene	9.339	96	620895	198.49	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212485.D
Acq On : 3 Mar 2017 5:34 pm
Operator : [redacted]
Sample : ic9728-200
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 06 10:25:26 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:19:16 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
39) methyl acrylate	9.391	85	111145	210.95	ug/L		100
40) propionitrile	9.422	54	1049256	1939.29	ug/L		94
41) bromochloromethane	9.652	128	323368	210.99	ug/L		98
42) tetrahydrofuran	9.684	42	269133	172.32	ug/L		97
43) chloroform	9.699	83	993792	189.24	ug/L		99
44) tert-butyl Formate	9.726	59	607870	198.38	ug/L		99
45) iso-butyl alcohol	10.139	43	415366	1541.87	ug/L		97
47) methacrylonitrile	9.590	67	295826	196.78	ug/L		97
48) 1,1,1-trichloroethane	9.945	97	853583	211.61	ug/L		100
49) cyclohexane	10.013	84	820596	225.98	ug/L		99
50) 1,1-dichloropropene	10.118	75	838108	211.55	ug/L		99
51) carbon tetrachloride	10.144	117	812360	218.41	ug/L		99
52) tert amyl alcohol	10.264	73	246030	850.28	ug/L		99
53) isopropyl acetate	10.290	87	148741	201.40	ug/L		97
56) iso-octane	10.369	57	2137197	206.62	ug/L		98
57) n-butyl alcohol	10.887	56	1127554	6937.28	ug/L		97
58) benzene	10.385	78	2278325	191.13	ug/L		100
59) tert-amyl methyl ether	10.406	73	1799211	190.52	ug/L		99
60) heptane	10.526	57	477179	213.69	ug/L		98
61) 1,2-dichloroethane	10.406	62	780724	194.53	ug/L		99
62) ethyl acrylate	11.080	55	890408	194.67	ug/L		98
63) trichloroethene	11.091	95	614295	204.87	ug/L		98
64) methylcyclohexane	11.305	83	1001338	204.10	ug/L		98
65) 2-nitropropane	11.891	46	13876	216.81	ug/L	#	82
66) 2-chloroethyl vinyl ether	11.896	63	2107321	987.64	ug/L		99
67) methyl methacrylate	11.352	100	188810	201.40	ug/L		100
68) 1,2-dichloropropane	11.368	63	627298	195.78	ug/L		98
69) dibromomethane	11.535	93	397800	209.32	ug/L		99
70) bromodichloromethane	11.661	83	844835	208.76	ug/L		98
71) epichlorohydrin	12.037	57	398748	896.73	ug/L		99
72) cis-1,3-dichloropropene	12.131	75	1088645	208.08	ug/L		99
73) 4-methyl-2-pentanone	12.220	58	1380099	908.29	ug/L		95
74) 3-methyl-1-butanol	12.247	55	836990	1219.87	ug/L		97
77) toluene	12.508	92	1496835	201.93	ug/L		100
78) ethyl methacrylate	12.696	69	937018	204.16	ug/L		99
79) trans-1,3-dichloropropene	12.722	75	979054	206.58	ug/L		100
80) 1,1,2-trichloroethane	12.953	83	500144	201.19	ug/L		99
81) 2-hexanone	13.125	58	1422210	884.44	ug/L		97
82) tetrachloroethene	13.130	164	556734	209.33	ug/L		98
83) 1,3-dichloropropane	13.151	76	938674	200.94	ug/L		99
84) butyl acetate	13.193	56	503072	185.25	ug/L		98
85) dibromochloromethane	13.439	129	734225	217.32	ug/L		99
86) 1,2-dibromoethane	13.606	107	676949	214.25	ug/L		99
87) 3,3-dimethyl-1-Butanol	13.319	57	795790	1473.33	ug/L		99
88) n-butyl ether	13.978	57	2639291	203.14	ug/L		99
89) chlorobenzene	14.103	112	1736576	199.80	ug/L		99
90) 1,1,1,2-tetrachloroethane	14.166	131	655767	213.05	ug/L		98
91) ethylbenzene	14.156	91	2868959	197.43	ug/L		98
92) m,p-xylene	14.271	106	2276318	407.60	ug/L		97
93) o-xylene	14.731	106	1145407	204.77	ug/L		100

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212485.D
Acq On : 3 Mar 2017 5:34 pm
Operator : [redacted]
Sample : ic9728-200
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 06 10:25:26 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:19:16 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
94) styrene	14.747	104	1956653	205.70	ug/L	99
95) butyl acrylate	14.527	55	1389301	202.99	ug/L	100
96) bromoform	15.055	173	601376	222.67	ug/L	100
97) isopropylbenzene	15.107	105	2981110	202.63	ug/L	98
98) cis-1,4-dichloro-2-butene	15.202	88	306622	223.11	ug/L	99
102) bromobenzene	15.568	156	853321	208.47	ug/L	97
103) 1,1,2,2-tetrachloroethane	15.463	83	903532	200.95	ug/L	98
104) trans-1,4-dichloro-2-b...	15.505	53	266597	204.04	ug/L	98
105) 1,2,3-trichloropropane	15.547	110	233628	202.38	ug/L	98
106) n-propylbenzene	15.562	91	3520381	197.66	ug/L	98
107) 2-chlorotoluene	15.740	126	756268	205.24	ug/L	91
108) 4-chlorotoluene	15.845	91	2224955	202.29	ug/L	100
109) 1,3,5-trimethylbenzene	15.730	105	2537908	201.87	ug/L	98
110) tert-butylbenzene	16.122	119	2249473	202.53	ug/L	98
111) 1,2,4-trimethylbenzene	16.169	105	2574264	200.63	ug/L	99
112) sec-butylbenzene	16.357	105	3295286	202.55	ug/L	99
113) 1,3-dichlorobenzene	16.582	146	1591470	201.67	ug/L	99
114) p-isopropyltoluene	16.488	119	2857072	199.31	ug/L	99
115) 1,4-dichlorobenzene	16.671	146	1592398	201.10	ug/L	98
116) benzyl chloride	16.802	91	1620049	181.77	ug/L	99
117) 1,2-dichlorobenzene	17.111	146	1495329	198.55	ug/L	99
118) n-butylbenzene	16.948	92	1448586	204.04	ug/L	99
119) 1,2-dibromo-3-chloropr...	17.968	157	225850	210.07	ug/L	97
120) 1,3,5-trichlorobenzene	18.157	180	1230025	200.48	ug/L	98
121) 2-ethylhexyl acrylate	18.805	70	126347	51.45	ug/L	92
122) 1,2,4-trichlorobenzene	18.878	180	1132222	209.22	ug/L	98
123) hexachlorobutadiene	18.993	225	614962	204.51	ug/L	99
124) naphthalene	19.203	128	2441149	197.61	ug/L	99
125) 1,2,3-trichlorobenzene	19.475	180	947797	209.69	ug/L	99
126) hexachloroethane	17.393	201	576382	220.96	ug/L	99

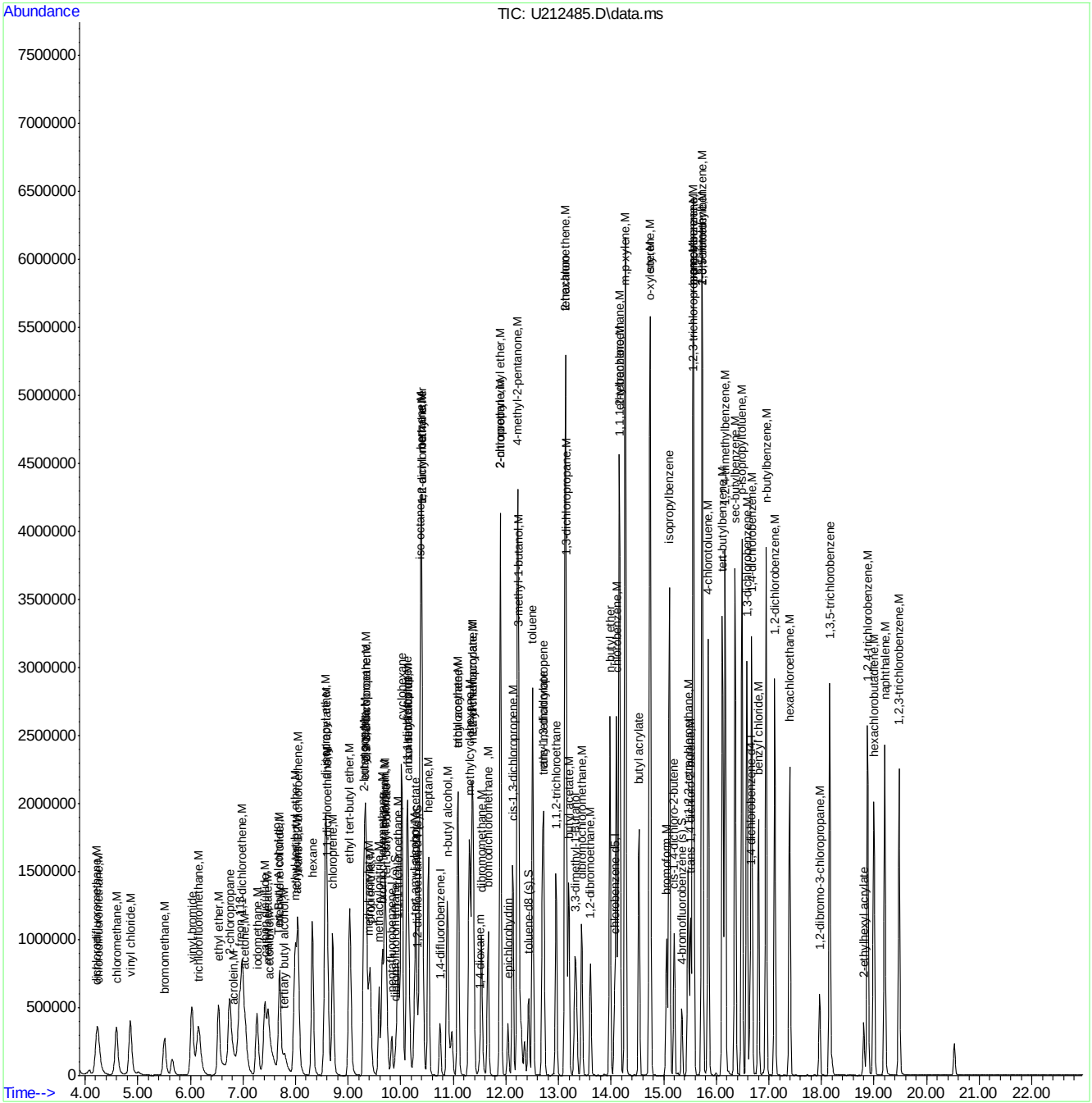
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212485.D
Acq On : 3 Mar 2017 5:34 pm
Operator : [redacted]
Sample : ic9728-200
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 06 10:25:26 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 09:19:16 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212488.D
Acq On : 3 Mar 2017 7:02 pm
Operator : [redacted]
Sample : icv9728-50
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 06 15:01:49 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 15:00:53 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Tert Butyl Alcohol-d9	7.675	65	202567	500.00	ug/L		0.01
5) pentafluorobenzene	9.830	168	269568	50.00	ug/L		0.00
54) 1,4-difluorobenzene	10.745	114	385655	50.00	ug/L		0.00
75) chlorobenzene-d5	14.066	117	358419	50.00	ug/L		0.00
100) 1,4-dichlorobenzene-d4	16.645	152	203759	50.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	9.898	113	113713	50.38	ug/L		0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 100.76%				
55) 1,2-dichloroethane-d4 (s)	10.316	65	132028	49.28	ug/L		0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 98.56%				
76) toluene-d8 (s)	12.429	98	447135	49.93	ug/L		0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 99.86%				
101) 4-bromofluorobenzene (s)	15.342	95	179358	50.41	ug/L		0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 100.82%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.780	59	141245	255.42	ug/L		96
4) 1,4-dioxane	11.503	88	51843	1214.00	ug/L		94
7) chlorodifluoromethane	4.244	51	110694	49.18	ug/L		97
8) dichlorodifluoromethane	4.228	85	163663	47.18	ug/L		99
9) chloromethane	4.563	50	197863	43.79	ug/L		100
10) vinyl chloride	4.835	62	190764	44.76	ug/L		99
11) bromomethane	5.494	94	112770	45.44	ug/L		100
12) chloroethane	5.661	64	89658	46.37	ug/L		96
13) trichlorofluoromethane	6.164	101	200843	52.53	ug/L		99
14) vinyl bromide	6.028	106	139937	35.68	ug/L		99
15) ethyl ether	6.535	74	87923	55.23	ug/L		98
16) 2-chloropropane	6.749	43	230942	52.31	ug/L		98
17) acrolein	6.812	56	35773	57.28	ug/L		91
18) freon 113	6.938	151	135141	64.24	ug/L		99
19) 1,1-dichloroethene	6.985	96	135067	50.35	ug/L		99
20) acetone	7.037	58	82643	248.98	ug/L		97
21) acetonitrile	7.497	41	482595	971.34	ug/L	#	52
22) iodomethane	7.267	142	259921	52.50	ug/L		100
23) carbon disulfide	7.419	76	451459	52.45	ug/L		99
24) methylene chloride	7.701	84	147224	51.21	ug/L		97
25) methyl acetate	7.476	43	142880	48.32	ug/L		99
26) methyl tert butyl ether	7.989	73	909251	105.94	ug/L		92
27) trans-1,2-dichloroethene	8.052	96	139099	50.45	ug/L		99
28) hexane	8.324	57	148566	37.38	ug/L		100
29) di-isopropyl ether	8.564	45	511570	50.96	ug/L		98
30) ethyl tert-butyl ether	9.024	59	488681	52.73	ug/L		100
31) 2-butanone	9.302	72	111167	274.84	ug/L		97
32) 1,1-dichloroethane	8.611	63	266472	51.62	ug/L		100
33) chloroprene	8.711	53	238921	54.68	ug/L		99
34) acrylonitrile	8.020	53	76167	59.94	ug/L		98
35) vinyl acetate	8.580	86	32296	55.18	ug/L	#	90
36) ethyl acetate	9.302	45	30126	52.75	ug/L		88
37) 2,2-dichloropropane	9.338	77	187156	48.83	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212488.D
Acq On : 3 Mar 2017 7:02 pm
Operator : [redacted]
Sample : icv9728-50
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 06 15:01:49 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 15:00:53 2017
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
38) cis-1,2-dichloroethene	9.338	96	157209	51.96	ug/L		99
39) methyl acrylate	9.390	85	28777	55.99	ug/L		99
40) propionitrile	9.422	54	276904	530.50	ug/L		93
41) bromochloromethane	9.652	128	78631	52.68	ug/L		97
42) tetrahydrofuran	9.683	42	72656	49.03	ug/L		100
43) chloroform	9.699	83	250624	49.60	ug/L		100
44) tert-butyl Formate	9.725	59	119816	40.43	ug/L		98
45) iso-butyl alcohol	10.133	43	113241	445.60	ug/L		99
47) methacrylonitrile	9.589	67	74289	51.15	ug/L		99
48) 1,1,1-trichloroethane	9.950	97	208995	53.18	ug/L		98
49) cyclohexane	10.013	84	202822	56.88	ug/L		99
50) 1,1-dichloropropene	10.117	75	203034	52.60	ug/L		99
51) carbon tetrachloride	10.144	117	195909	53.92	ug/L		99
52) tert amyl alcohol	10.259	73	68198	247.61	ug/L		98
53) isopropyl acetate	10.285	87	37498	51.35	ug/L		97
56) iso-octane	10.369	57	528429	52.63	ug/L		99
57) n-butyl alcohol	10.886	56	355185	2449.98	ug/L		97
58) benzene	10.384	78	564577	49.19	ug/L		100
59) tert-amyl methyl ether	10.400	73	466814	51.39	ug/L		99
60) heptane	10.525	57	117724	54.10	ug/L		98
61) 1,2-dichloroethane	10.405	62	198698	51.35	ug/L		99
62) ethyl acrylate	11.080	55	234847	53.25	ug/L		98
63) trichloroethene	11.090	95	151291	52.05	ug/L		98
64) methylcyclohexane	11.305	83	240086	52.75	ug/L		97
65) 2-nitropropane	11.890	46	3834	56.32	ug/L	#	90
66) 2-chloroethyl vinyl ether	11.896	63	557018	270.29	ug/L		100
67) methyl methacrylate	11.352	100	48004	52.90	ug/L		97
68) 1,2-dichloropropane	11.362	63	159114	51.47	ug/L		100
69) dibromomethane	11.535	93	98117	53.11	ug/L		98
70) bromodichloromethane	11.660	83	203432	51.75	ug/L		98
71) epichlorohydrin	12.042	57	101845	239.59	ug/L		99
72) cis-1,3-dichloropropene	12.131	75	263391	51.85	ug/L		98
73) 4-methyl-2-pentanone	12.220	58	375297	253.80	ug/L		99
74) 3-methyl-1-butanol	12.241	55	237970	978.26	ug/L		98
77) toluene	12.508	92	363262	50.93	ug/L		100
78) ethyl methacrylate	12.696	69	227987	51.57	ug/L		99
79) trans-1,3-dichloropropene	12.722	75	241138	52.75	ug/L		99
80) 1,1,2-trichloroethane	12.952	83	120915	50.57	ug/L		99
81) 2-hexanone	13.125	58	392823	257.09	ug/L		99
82) tetrachloroethene	13.130	164	136498	53.14	ug/L		97
83) 1,3-dichloropropane	13.151	76	234401	52.17	ug/L		99
84) butyl acetate	13.198	56	128789	49.74	ug/L		99
85) dibromochloromethane	13.439	129	170926	52.13	ug/L		98
86) 1,2-dibromoethane	13.606	107	158310	51.75	ug/L		97
87) 3,3-dimethyl-1-Butanol	13.313	57	232935	496.67	ug/L		99
88) n-butyl ether	13.977	57	667388	53.35	ug/L		99
89) chlorobenzene	14.103	112	424958	50.87	ug/L		99
90) 1,1,1,2-tetrachloroethane	14.166	131	157177	52.78	ug/L		99
91) ethylbenzene	14.150	91	705947	50.60	ug/L		99
92) m,p-xylene	14.270	106	551113	102.46	ug/L		100

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Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212488.D
Acq On : 3 Mar 2017 7:02 pm
Operator : [redacted]
Sample : icv9728-50
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 06 15:01:49 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 15:00:53 2017
Response via : Initial Calibration

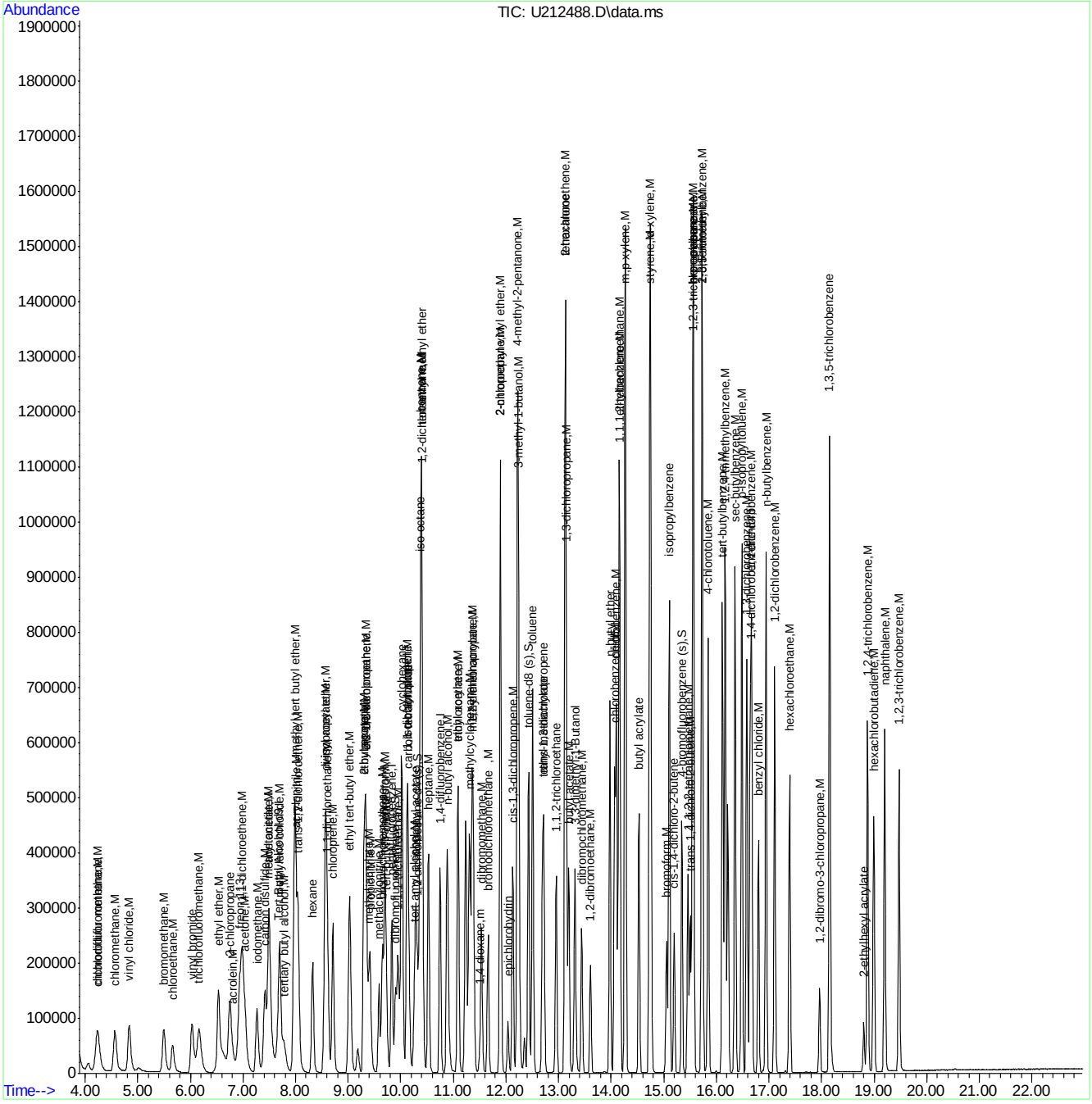
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
93) o-xylene	14.730	106	272240	50.51	ug/L	97
94) styrene	14.746	104	475231	51.82	ug/L	98
95) butyl acrylate	14.526	55	363653	55.19	ug/L	99
96) bromoform	15.055	173	142433	54.18	ug/L	99
97) isopropylbenzene	15.107	105	713378	50.37	ug/L	99
98) cis-1,4-dichloro-2-butene	15.196	88	72931	54.51	ug/L	98
102) bromobenzene	15.567	156	203677	51.12	ug/L	98
103) 1,1,2,2-tetrachloroethane	15.463	83	220618	50.60	ug/L	100
104) trans-1,4-dichloro-2-b...	15.505	53	66377	54.58	ug/L	99
105) 1,2,3-trichloropropane	15.546	110	58693	52.39	ug/L	99
106) n-propylbenzene	15.562	91	856242	49.66	ug/L	99
107) 2-chlorotoluene	15.735	126	181813	50.78	ug/L	99
108) 4-chlorotoluene	15.844	91	533388	49.98	ug/L	99
109) 1,3,5-trimethylbenzene	15.724	105	609354	49.96	ug/L	99
110) tert-butylbenzene	16.116	119	540964	50.19	ug/L	99
111) 1,2,4-trimethylbenzene	16.169	105	631031	50.73	ug/L	100
112) sec-butylbenzene	16.357	105	792957	50.22	ug/L	100
113) 1,3-dichlorobenzene	16.582	146	385141	50.31	ug/L	99
114) p-isopropyltoluene	16.488	119	689627	49.65	ug/L	100
115) 1,4-dichlorobenzene	16.671	146	388860	50.64	ug/L	98
116) benzyl chloride	16.802	91	360817	42.20	ug/L	98
117) 1,2-dichlorobenzene	17.110	146	371971	51.00	ug/L	100
118) n-butylbenzene	16.948	92	348232	50.51	ug/L	98
119) 1,2-dibromo-3-chloropr...	17.963	157	57016	54.41	ug/L	96
120) 1,3,5-trichlorobenzene	18.156	180	493292	82.94	ug/L	99
121) 2-ethylhexyl acrylate	18.805	70	30514	11.57	ug/L	93
122) 1,2,4-trichlorobenzene	18.873	180	270434	51.32	ug/L	99
123) hexachlorobutadiene	18.993	225	143934	49.28	ug/L	99
124) naphthalene	19.202	128	614400	51.38	ug/L	100
125) 1,2,3-trichlorobenzene	19.474	180	232645	52.85	ug/L	98
126) hexachloroethane	17.393	201	138259	54.06	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U212488.D
Acq On : 3 Mar 2017 7:02 pm
Operator : [redacted]
Sample : icv9728-50
Misc : ms13029,vu9728,w,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 06 15:01:49 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Mar 06 15:00:53 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U213371.D
Acq On : 1 Apr 2017 3:56 pm
Operator : [redacted]
Sample : icv9728-50
Misc : ms14105,vu9728,w,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 03 10:11:02 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

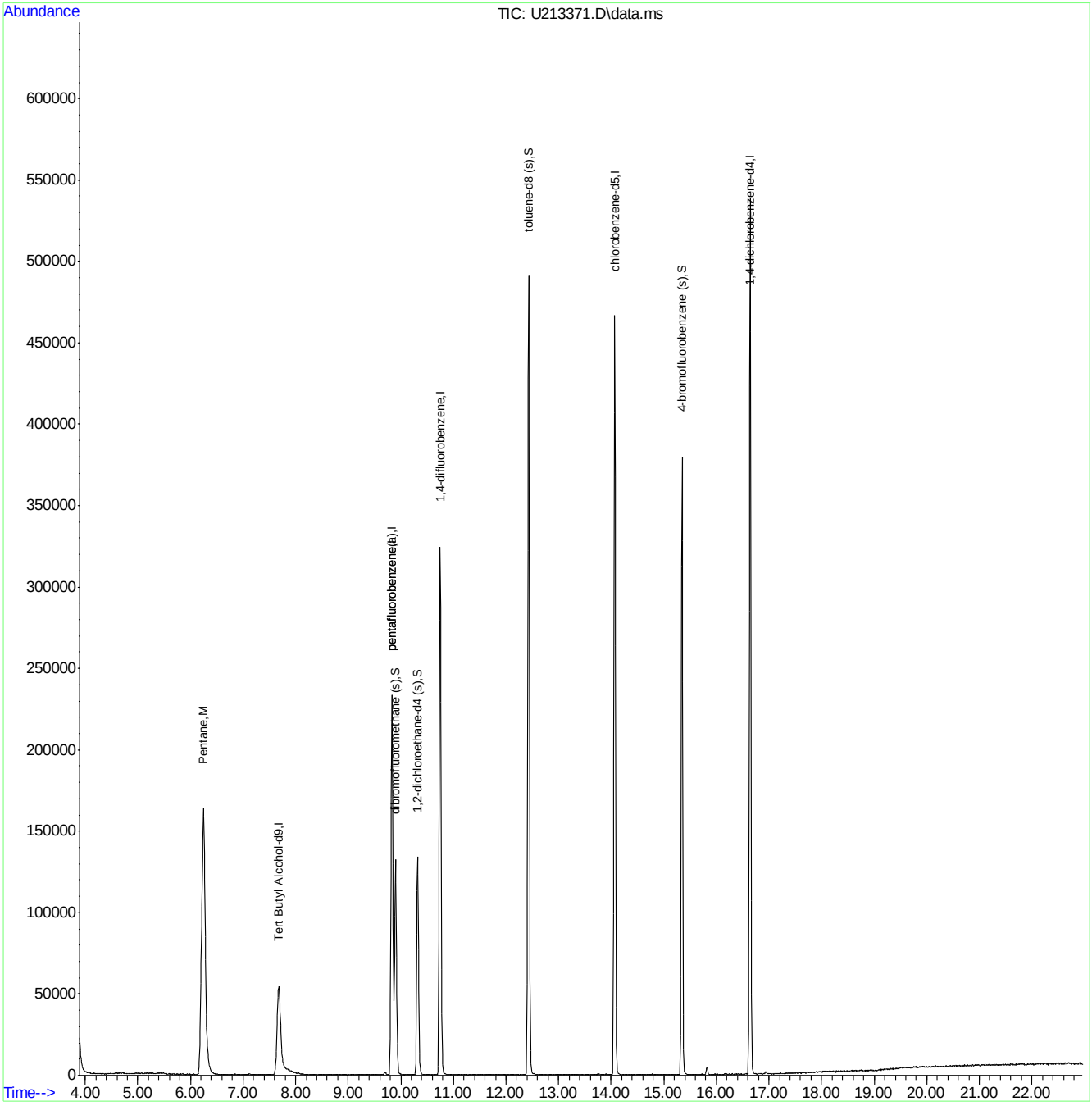
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Tert Butyl Alcohol-d9	7.685	65	181171	500.00	ug/L	0.02
5) pentafluorobenzene	9.829	168	227700	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.749	114	336640	50.00	ug/L	0.00
75) chlorobenzene-d5	14.065	117	318166	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.644	152	172488	50.00	ug/L	0.00
128) pentafluorobenzene(a)	9.829	168	227700	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.897	113	102272	53.64	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 107.28%			
55) 1,2-dichloroethane-d4 (s)	10.321	65	115373	49.33	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 98.66%			
76) toluene-d8 (s)	12.428	98	399974	50.32	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 100.64%			
101) 4-bromofluorobenzene (s)	15.347	95	153466	50.96	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 101.92%			
Target Compounds						Qvalue
129) Pentane	6.252	43	296346	63.91	ug/L	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]
Data File : U213371.D
Acq On : 1 Apr 2017 3:56 pm
Operator : [redacted]
Sample : icv9728-50
Misc : ms14105,vu9728,w,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 03 10:11:02 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213688.D
Acq On : 12 Apr 2017 8:01 am
Operator : [redacted]
Sample : CC9728-20
Misc : ms14578,vu9776,w,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 12 16:10:32 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.623	65	220000	500.00	ug/L		-0.04
5) pentafluorobenzene	9.830	168	282718	50.00	ug/L		0.00
54) 1,4-difluorobenzene	10.745	114	418169	50.00	ug/L		0.00
75) chlorobenzene-d5	14.066	117	392027	50.00	ug/L		0.00
100) 1,4-dichlorobenzene-d4	16.639	152	212728	50.00	ug/L		0.00
128) pentafluorobenzene(a)	9.830	168	282718	50.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	9.898	113	125851	53.16	ug/L		0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 106.32%				
55) 1,2-dichloroethane-d4 (s)	10.316	65	142019	48.88	ug/L		0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 97.76%				
76) toluene-d8 (s)	12.429	98	485997	49.62	ug/L		0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 99.24%				
101) 4-bromofluorobenzene (s)	15.342	95	187838	50.57	ug/L		0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 101.14%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.733	59	53800	89.58	ug/L		85
4) 1,4-dioxane	11.472	88	20625	444.70	ug/L		99
7) chlorodifluoromethane	4.249	51	68318	28.94	ug/L		92
8) dichlorodifluoromethane	4.223	85	55971	15.38	ug/L		91
9) chloromethane	4.579	50	90145	19.02	ug/L		97
10) vinyl chloride	4.861	62	86026	19.25	ug/L		99
11) bromomethane	5.499	94	55092	21.17	ug/L		98
12) chloroethane	5.661	64	45848	22.61	ug/L		99
13) trichlorofluoromethane	6.164	101	79177	19.75	ug/L		91
14) vinyl bromide	6.043	106	83419	20.28	ug/L		97
15) ethyl ether	6.530	74	37074	22.21	ug/L	#	83
16) 2-chloropropane	6.749	43	98591	21.29	ug/L		96
17) acrolein	6.812	56	14859	22.68	ug/L		94
18) freon 113	6.938	151	41189	18.67	ug/L		99
19) 1,1-dichloroethene	6.990	96	57224	20.34	ug/L		98
20) acetone	7.016	58	34957	100.42	ug/L		93
21) acetonitrile	7.471	41	98848	189.70	ug/L		99
22) iodomethane	7.262	142	107692	20.74	ug/L		99
23) carbon disulfide	7.429	76	187347	20.75	ug/L		99
24) methylene chloride	7.691	84	62278	20.66	ug/L		98
25) methyl acetate	7.466	43	59599	19.22	ug/L		98
26) methyl tert butyl ether	7.989	73	183805	20.42	ug/L		99
27) trans-1,2-dichloroethene	8.046	96	61209	21.17	ug/L		97
28) hexane	8.324	57	79962	19.19	ug/L		97
29) di-isopropyl ether	8.559	45	204841	19.46	ug/L		90
30) ethyl tert-butyl ether	9.019	59	193766	19.93	ug/L		99
31) 2-butanone	9.291	72	48832	115.11	ug/L		96
32) 1,1-dichloroethane	8.606	63	114257	21.10	ug/L		98
33) chloroprene	8.705	53	87977	19.20	ug/L		97
34) acrylonitrile	8.015	53	30356	22.78	ug/L		95
35) vinyl acetate	8.580	86	13054	21.27	ug/L	#	80
36) ethyl acetate	9.291	45	12846	21.45	ug/L	#	73
37) 2,2-dichloropropane	9.333	77	82224	20.45	ug/L		99
38) cis-1,2-dichloroethene	9.333	96	66848	21.07	ug/L		99
39) methyl acrylate	9.385	85	11758	21.81	ug/L	#	76
40) propionitrile	9.406	54	130031	237.53	ug/L		89
41) bromochloromethane	9.647	128	33569	21.44	ug/L		98
42) tetrahydrofuran	9.678	42	32695	21.04	ug/L		99
43) chloroform	9.694	83	105924	19.99	ug/L		97
44) tert-butyl Formate	9.720	59	62323	20.05	ug/L		95
45) iso-butyl alcohol	10.123	43	45252	169.78	ug/L		97
47) methacrylonitrile	9.584	67	32368	21.25	ug/L		96
48) 1,1,1-trichloroethane	9.945	97	83257	20.20	ug/L		96
49) cyclohexane	10.018	84	83036	22.20	ug/L	#	84

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213688.D
Acq On : 12 Apr 2017 8:01 am
Operator : [redacted]
Sample : CC9728-20
Misc : ms14578,vu9776,w,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 12 16:10:32 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
50)	1,1-dichloropropene	10.117	75	84266	20.82	ug/L		99
51)	carbon tetrachloride	10.144	117	78585	20.62	ug/L		95
52)	tert amyl alcohol	10.243	73	29739	102.95	ug/L		89
53)	isopropyl acetate	10.285	87	15650	20.44	ug/L	#	72
56)	iso-octane	10.363	57	210244	19.31	ug/L		96
57)	n-butyl alcohol	10.865	56	142608	907.19	ug/L		100
58)	benzene	10.384	78	245309	19.71	ug/L		100
59)	tert-amyl methyl ether	10.400	73	189781	19.27	ug/L		99
60)	heptane	10.525	57	43991	18.65	ug/L		96
61)	1,2-dichloroethane	10.405	62	80166	19.11	ug/L		99
62)	ethyl acrylate	11.080	55	106361	22.24	ug/L		99
63)	trichloroethene	11.090	95	62577	19.85	ug/L		98
64)	methylcyclohexane	11.305	83	97345	19.72	ug/L		97
65)	2-nitropropane	11.880	46	1343	18.20	ug/L	#	37
66)	2-chloroethyl vinyl ether	11.890	63	213552	95.57	ug/L		97
67)	methyl methacrylate	11.352	100	19752	20.07	ug/L		97
68)	1,2-dichloropropane	11.362	63	66982	19.98	ug/L		98
69)	dibromomethane	11.530	93	41771	20.85	ug/L		94
70)	bromodichloromethane	11.655	83	84816	19.90	ug/L		99
71)	epichlorohydrin	12.032	57	41538	90.12	ug/L		97
72)	cis-1,3-dichloropropene	12.126	75	110116	19.99	ug/L		96
73)	4-methyl-2-pentanone	12.220	58	168518	105.10	ug/L		97
74)	3-methyl-1-butanol	12.236	55	86953	329.66	ug/L		97
77)	toluene	12.502	92	151031	19.36	ug/L		98
78)	ethyl methacrylate	12.691	69	96083	19.87	ug/L		99
79)	trans-1,3-dichloropropene	12.717	75	100480	20.10	ug/L		99
80)	1,1,2-trichloroethane	12.952	83	52203	19.96	ug/L		98
81)	2-hexanone	13.125	58	176489	105.61	ug/L		99
82)	tetrachloroethene	13.130	164	56210	20.01	ug/L		96
83)	1,3-dichloropropane	13.146	76	99372	20.22	ug/L		99
84)	butyl acetate	13.193	56	52606	18.58	ug/L		97
85)	dibromochloromethane	13.439	129	71425	19.91	ug/L		98
86)	1,2-dibromoethane	13.601	107	67960	20.31	ug/L		97
87)	3,3-dimethyl-1-Butanol	13.318	57	73083	142.47	ug/L		96
88)	n-butyl ether	13.977	57	297389	21.74	ug/L		99
89)	chlorobenzene	14.098	112	171689	18.79	ug/L		100
90)	1,1,1,2-tetrachloroethane	14.166	131	64064	19.67	ug/L		100
91)	ethylbenzene	14.150	91	291592	19.11	ug/L		99
92)	m,p-xylene	14.265	106	222363	37.80	ug/L		99
93)	o-xylene	14.730	106	111626	18.93	ug/L		97
94)	styrene	14.746	104	193749	19.32	ug/L		97
95)	butyl acrylate	14.526	55	157288	21.82	ug/L		100
96)	bromoform	15.055	173	57930	20.15	ug/L		97
97)	isopropylbenzene	15.107	105	291024	18.79	ug/L		99
98)	cis-1,4-dichloro-2-butene	15.196	88	34055	23.27	ug/L		96
102)	bromobenzene	15.562	156	82686	19.88	ug/L		96
103)	1,1,2,2-tetrachloroethane	15.457	83	95083	20.89	ug/L		99
104)	trans-1,4-dichloro-2-b...	15.505	53	24991	19.68	ug/L		90
105)	1,2,3-trichloropropane	15.541	110	24189	20.68	ug/L		96
106)	n-propylbenzene	15.557	91	355054	19.72	ug/L		97
107)	2-chlorotoluene	15.735	126	73792	19.74	ug/L		98
108)	4-chlorotoluene	15.844	91	215676	19.36	ug/L		99
109)	1,3,5-trimethylbenzene	15.724	105	245868	19.31	ug/L		99
110)	tert-butylbenzene	16.116	119	214875	19.09	ug/L		99
111)	1,2,4-trimethylbenzene	16.169	105	248861	19.16	ug/L		99
112)	sec-butylbenzene	16.357	105	321892	19.53	ug/L		98
113)	1,3-dichlorobenzene	16.577	146	155109	19.41	ug/L		97
114)	p-isopropyltoluene	16.483	119	276152	19.04	ug/L		98
115)	1,4-dichlorobenzene	16.671	146	153493	19.15	ug/L		99
116)	benzyl chloride	16.796	91	181176	20.29	ug/L		98
117)	1,2-dichlorobenzene	17.110	146	146386	19.22	ug/L		100
118)	n-butylbenzene	16.943	92	142200	19.75	ug/L		98
119)	1,2-dibromo-3-chloropr...	17.963	157	21258	19.43	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213688.D
Acq On : 12 Apr 2017 8:01 am
Operator : [redacted]
Sample : CC9728-20
Misc : ms14578,vu9776,w,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 12 16:10:32 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
120) 1,3,5-trichlorobenzene	18.151	180	125169	20.16	ug/L	100
121) 2-ethylhexyl acrylate	18.805	70	1418	0.52	ug/L #	73
122) 1,2,4-trichlorobenzene	18.873	180	98391	17.89	ug/L	98
123) hexachlorobutadiene	18.993	225	57662	18.91	ug/L	98
124) naphthalene	19.202	128	214941	17.22	ug/L	99
125) 1,2,3-trichlorobenzene	19.474	180	78723	17.13	ug/L	99
126) hexachloroethane	17.393	201	51776	19.39	ug/L	94
127) 2-methylnaphthalene	20.525	142	14105	4.66	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

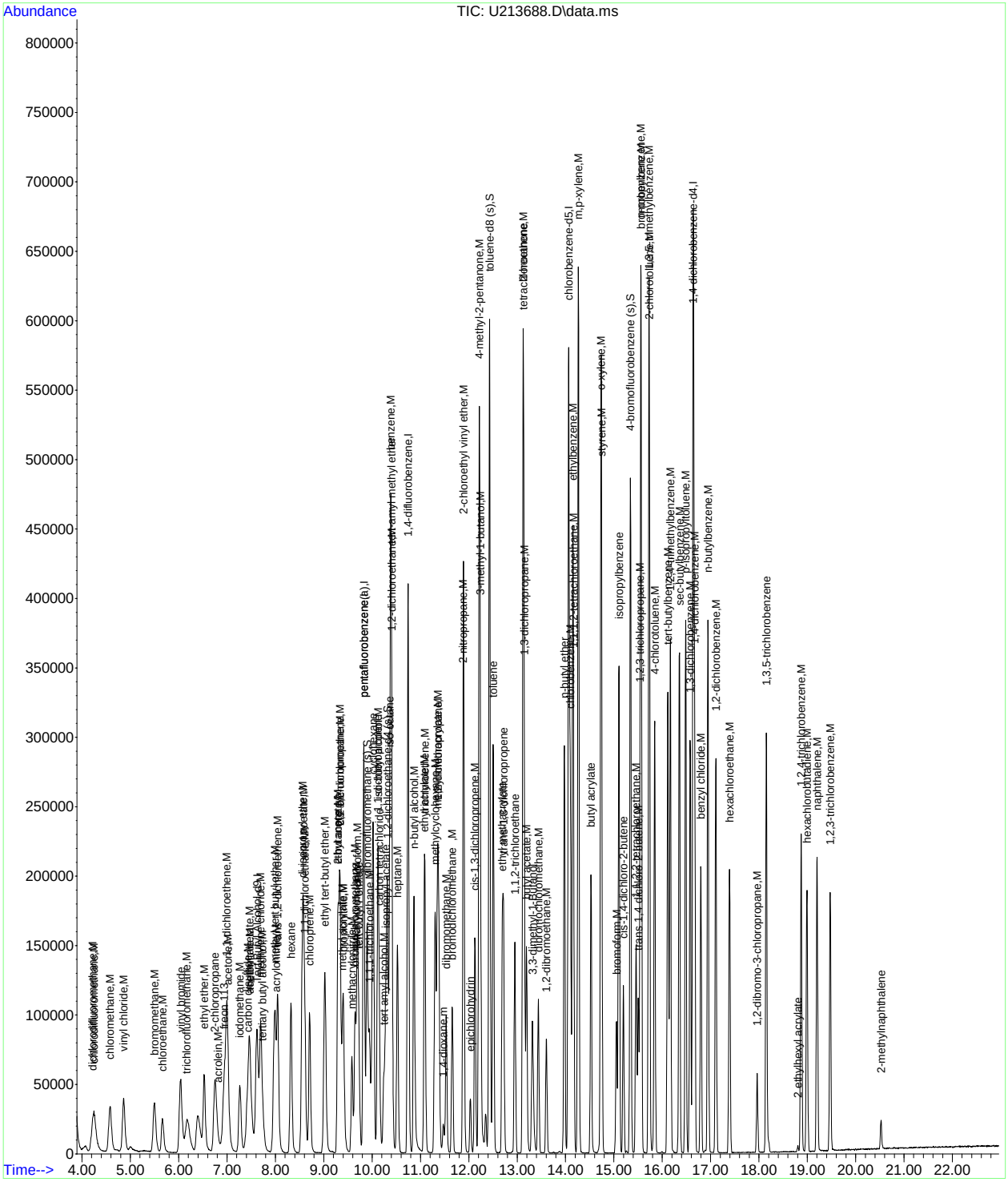
7.7.13

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Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213688.D
Acq On : 12 Apr 2017 8:01 am
Operator : [redacted]
Sample : CC9728-20
Misc : ms14578,vu9776,w,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 12 16:10:32 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213689.D
Acq On : 12 Apr 2017 8:48 am
Operator : [redacted]
Sample : CC9728-1
Misc : ms14578,vu9776,w,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 12 16:11:20 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.632	65	205124	500.00	ug/L	-0.03
5) pentafluorobenzene	9.829	168	281175	50.00	ug/L	0.00
54) 1,4-difluorobenzene	10.744	114	418356	50.00	ug/L	0.00
75) chlorobenzene-d5	14.065	117	387340	50.00	ug/L	0.00
100) 1,4-dichlorobenzene-d4	16.643	152	207088	50.00	ug/L	0.00
128) pentafluorobenzene(a)	9.829	168	281175	50.00	ug/L	0.00
System Monitoring Compounds						
46) dibromofluoromethane (s)	9.897	113	127119	53.99	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 107.98%			
55) 1,2-dichloroethane-d4 (s)	10.315	65	141200	48.58	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 97.16%			
76) toluene-d8 (s)	12.428	98	485064	50.13	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 100.26%			
101) 4-bromofluorobenzene (s)	15.346	95	182327	50.43	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 100.86%			
Target Compounds						Qvalue
8) dichlorodifluoromethane	4.206	85	2402	0.66	ug/L	# 51

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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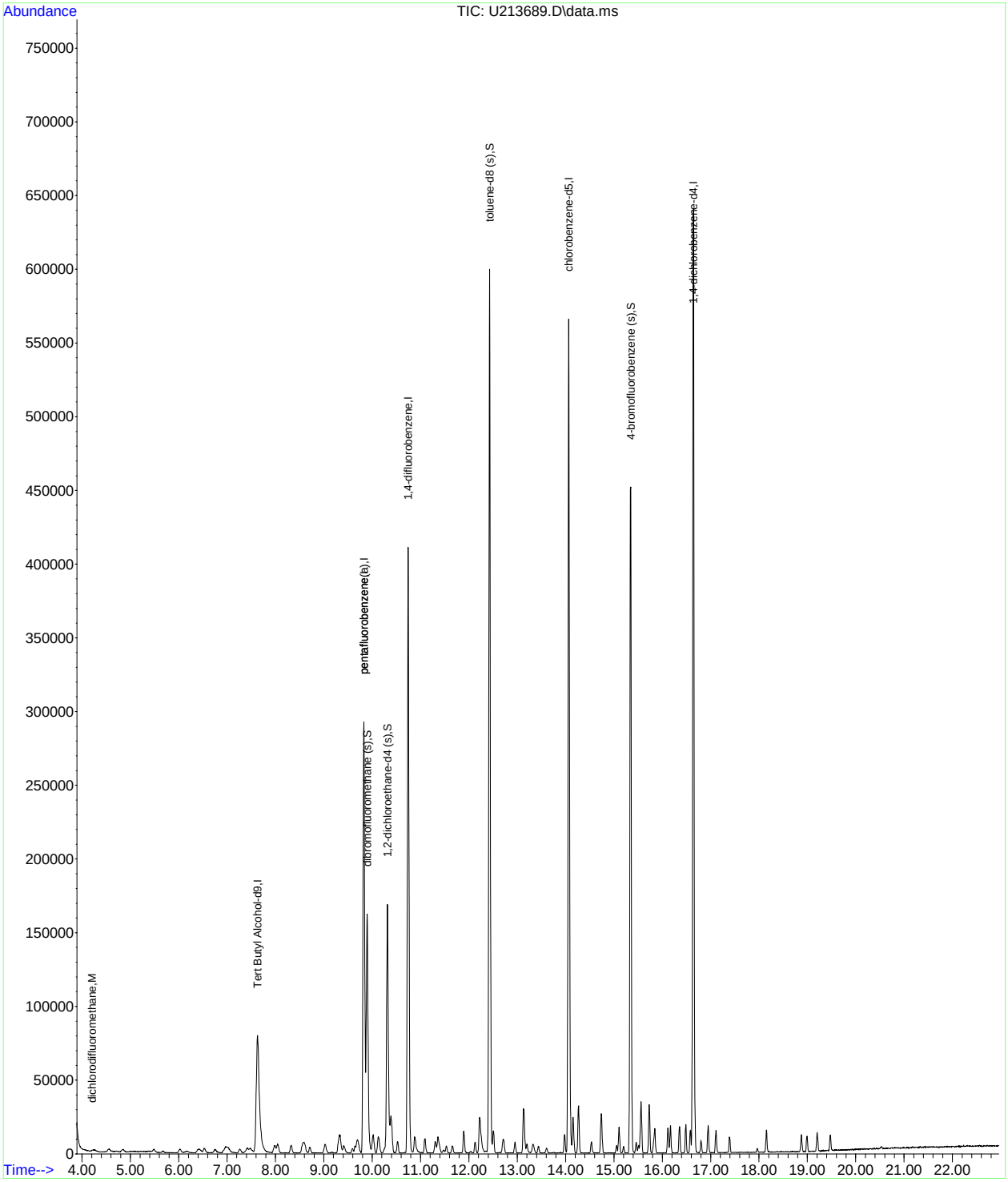
7.7.14

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Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213689.D
Acq On : 12 Apr 2017 8:48 am
Operator : [redacted]
Sample : CC9728-1
Misc : ms14578,vu9776,w,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 12 16:11:20 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration



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7
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Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213701.D
Acq On : 12 Apr 2017 3:28 pm
Operator : [redacted]
Sample : ecc9728-50
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Apr 12 16:16:17 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.617	65	189397	500.00	ug/L		-0.05
5) pentafluorobenzene	9.829	168	272978	50.00	ug/L		0.00
54) 1,4-difluorobenzene	10.745	114	409752	50.00	ug/L		0.00
75) chlorobenzene-d5	14.066	117	380425	50.00	ug/L		0.00
100) 1,4-dichlorobenzene-d4	16.644	152	210138	50.00	ug/L		0.00
128) pentafluorobenzene(a)	9.829	168	272978	50.00	ug/L		0.00
System Monitoring Compounds							
46) dibromofluoromethane (s)	9.892	113	124106	54.29	ug/L		0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 108.58%				
55) 1,2-dichloroethane-d4 (s)	10.316	65	137712	48.38	ug/L		0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 96.76%				
76) toluene-d8 (s)	12.429	98	470941	49.55	ug/L		0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 99.10%				
101) 4-bromofluorobenzene (s)	15.342	95	184625	50.32	ug/L		0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 100.64%				
Target Compounds							Qvalue
2) tertiary butyl alcohol	7.732	59	118715	229.60	ug/L		84
4) 1,4-dioxane	11.472	88	52631	1318.16	ug/L		98
7) chlorodifluoromethane	4.254	51	168732	74.03	ug/L		93
8) dichlorodifluoromethane	4.223	85	158645	45.16	ug/L		99
9) chloromethane	4.594	50	220105	48.11	ug/L		99
10) vinyl chloride	4.866	62	213542	49.48	ug/L		99
11) bromomethane	5.493	94	132663	52.79	ug/L		99
12) chloroethane	5.656	64	111272	56.83	ug/L		97
13) trichlorofluoromethane	6.173	101	205092	52.97	ug/L		97
14) vinyl bromide	6.043	106	202754	51.05	ug/L		100
15) ethyl ether	6.529	74	86904	53.91	ug/L	#	85
16) 2-chloropropane	6.754	43	224939	50.32	ug/L		96
17) acrolein	6.811	56	36641	57.93	ug/L		97
18) freon 113	6.947	151	109004	51.16	ug/L		98
19) 1,1-dichloroethene	6.995	96	134130	49.38	ug/L		93
20) acetone	7.015	58	75128	223.51	ug/L		98
21) acetonitrile	7.465	41	228473	454.11	ug/L		97
22) iodomethane	7.266	142	248632	49.59	ug/L		98
23) carbon disulfide	7.423	76	427063	48.99	ug/L		99
24) methylene chloride	7.695	84	150298	51.63	ug/L		98
25) methyl acetate	7.465	43	131733	44.00	ug/L		98
26) methyl tert butyl ether	7.983	73	428110	49.26	ug/L		97
27) trans-1,2-dichloroethene	8.046	96	141458	50.66	ug/L		98
28) hexane	8.323	57	207466	51.55	ug/L		99
29) di-isopropyl ether	8.558	45	492083	48.41	ug/L		95
30) ethyl tert-butyl ether	9.024	59	477414	50.87	ug/L		99
31) 2-butanone	9.291	72	104334	254.72	ug/L		94
32) 1,1-dichloroethane	8.605	63	267424	51.15	ug/L		99
33) chloroprene	8.705	53	214228	48.42	ug/L		96
34) acrylonitrile	8.009	53	67195	52.22	ug/L		97
35) vinyl acetate	8.579	86	30801	51.97	ug/L	#	94
36) ethyl acetate	9.296	45	28311	48.96	ug/L		95
37) 2,2-dichloropropane	9.332	77	196241	50.56	ug/L		98
38) cis-1,2-dichloroethene	9.332	96	157547	51.42	ug/L		98
39) methyl acrylate	9.385	85	26340	50.60	ug/L	#	90
40) propionitrile	9.406	54	258189	488.47	ug/L		92
41) bromochloromethane	9.646	128	79124	52.35	ug/L		98
42) tetrahydrofuran	9.678	42	67017	44.66	ug/L		99
43) chloroform	9.693	83	245683	48.01	ug/L		98
44) tert-butyl Formate	9.719	59	149315	49.76	ug/L		97
45) iso-butyl alcohol	10.117	43	99817	387.87	ug/L		97
47) methacrylonitrile	9.578	67	72333	49.18	ug/L		98
48) 1,1,1-trichloroethane	9.944	97	198706	49.93	ug/L		99
49) cyclohexane	10.012	84	210468	58.29	ug/L		99

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Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213701.D
Acq On : 12 Apr 2017 3:28 pm
Operator : [redacted]
Sample : ecc9728-50
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Apr 12 16:16:17 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
50)	1,1-dichloropropene	10.117	75	197769	50.60	ug/L		99
51)	carbon tetrachloride	10.143	117	187476	50.95	ug/L		99
52)	tert amyl alcohol	10.237	73	57646	206.68	ug/L		85
53)	isopropyl acetate	10.284	87	35290	47.72	ug/L	#	80
56)	iso-octane	10.368	57	543473	50.95	ug/L		98
57)	n-butyl alcohol	10.860	56	329342	2138.12	ug/L		96
58)	benzene	10.384	78	572305	46.93	ug/L		100
59)	tert-amyl methyl ether	10.399	73	461018	47.76	ug/L		99
60)	heptane	10.520	57	113700	49.18	ug/L		98
61)	1,2-dichloroethane	10.399	62	187029	45.49	ug/L		99
62)	ethyl acrylate	11.074	55	209917	44.80	ug/L		99
63)	trichloroethene	11.090	95	149141	48.29	ug/L		98
64)	methylcyclohexane	11.304	83	253919	52.50	ug/L		99
65)	2-nitropropane	11.885	46	2979	41.19	ug/L	#	89
66)	2-chloroethyl vinyl ether	11.890	63	444529	203.02	ug/L		97
67)	methyl methacrylate	11.346	100	44225	45.87	ug/L		92
68)	1,2-dichloropropane	11.362	63	157988	48.10	ug/L		99
69)	dibromomethane	11.529	93	97568	49.71	ug/L		95
70)	bromodichloromethane	11.655	83	201921	48.35	ug/L		98
71)	epichlorohydrin	12.031	57	91787	203.23	ug/L		99
72)	cis-1,3-dichloropropene	12.125	75	261130	48.38	ug/L		95
73)	4-methyl-2-pentanone	12.214	58	362504	230.73	ug/L		97
74)	3-methyl-1-butanol	12.235	55	195421	756.10	ug/L		99
77)	toluene	12.502	92	355765	46.99	ug/L		99
78)	ethyl methacrylate	12.690	69	219163	46.70	ug/L		98
79)	trans-1,3-dichloropropene	12.716	75	235062	48.45	ug/L		100
80)	1,1,2-trichloroethane	12.952	83	121255	47.78	ug/L		97
81)	2-hexanone	13.119	58	366511	226.00	ug/L		99
82)	tetrachloroethene	13.129	164	131521	48.24	ug/L		98
83)	1,3-dichloropropane	13.145	76	230670	48.37	ug/L		99
84)	butyl acetate	13.192	56	118510	43.12	ug/L		98
85)	dibromochloromethane	13.438	129	168441	48.40	ug/L		99
86)	1,2-dibromoethane	13.605	107	160224	49.35	ug/L		99
87)	3,3-dimethyl-1-Butanol	13.307	57	173525	348.59	ug/L		99
88)	n-butyl ether	13.977	57	634642	47.80	ug/L		98
89)	chlorobenzene	14.097	112	406795	45.88	ug/L		98
90)	1,1,1,2-tetrachloroethane	14.165	131	153083	48.43	ug/L		99
91)	ethylbenzene	14.149	91	688694	46.51	ug/L		99
92)	m,p-xylene	14.264	106	531214	93.05	ug/L		99
93)	o-xylene	14.730	106	266804	46.64	ug/L		96
94)	styrene	14.746	104	463985	47.67	ug/L		97
95)	butyl acrylate	14.526	55	327383	46.81	ug/L		99
96)	bromoform	15.054	173	133908	47.99	ug/L		99
97)	isopropylbenzene	15.106	105	698857	46.49	ug/L		100
98)	cis-1,4-dichloro-2-butene	15.195	88	61745	43.48	ug/L		96
102)	bromobenzene	15.561	156	196588	47.85	ug/L		95
103)	1,1,2,2-tetrachloroethane	15.457	83	222539	49.49	ug/L		99
104)	trans-1,4-dichloro-2-b...	15.504	53	56913	45.38	ug/L		94
105)	1,2,3-trichloropropane	15.546	110	56000	48.47	ug/L		97
106)	n-propylbenzene	15.561	91	848830	47.74	ug/L		98
107)	2-chlorotoluene	15.734	126	176194	47.71	ug/L		99
108)	4-chlorotoluene	15.844	91	522181	47.44	ug/L		99
109)	1,3,5-trimethylbenzene	15.724	105	593001	47.15	ug/L		100
110)	tert-butylbenzene	16.116	119	520269	46.80	ug/L		99
111)	1,2,4-trimethylbenzene	16.168	105	608126	47.40	ug/L		99
112)	sec-butylbenzene	16.356	105	779695	47.88	ug/L		99
113)	1,3-dichlorobenzene	16.576	146	376167	47.65	ug/L		99
114)	p-isopropyltoluene	16.482	119	670098	46.78	ug/L		99
115)	1,4-dichlorobenzene	16.670	146	374726	47.32	ug/L		99
116)	benzyl chloride	16.801	91	454194	51.50	ug/L		97
117)	1,2-dichlorobenzene	17.110	146	363180	48.28	ug/L		99
118)	n-butylbenzene	16.947	92	349653	49.17	ug/L		99
119)	1,2-dibromo-3-chloropr...	17.967	157	51864	47.99	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213701.D
Acq On : 12 Apr 2017 3:28 pm
Operator : [redacted]
Sample : ecc9728-50
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Apr 12 16:16:17 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
120) 1,3,5-trichlorobenzene	18.156	180	315908	51.50	ug/L	99
121) 2-ethylhexyl acrylate	18.804	70	9635	3.54	ug/L	100
122) 1,2,4-trichlorobenzene	18.872	180	259628	47.78	ug/L	99
123) hexachlorobutadiene	18.992	225	139887	46.44	ug/L	98
124) naphthalene	19.202	128	566963	45.97	ug/L	99
125) 1,2,3-trichlorobenzene	19.474	180	215113	47.38	ug/L	99
126) hexachloroethane	17.392	201	126491	47.95	ug/L	99
127) 2-methylnaphthalene	20.525	142	64783	21.66	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

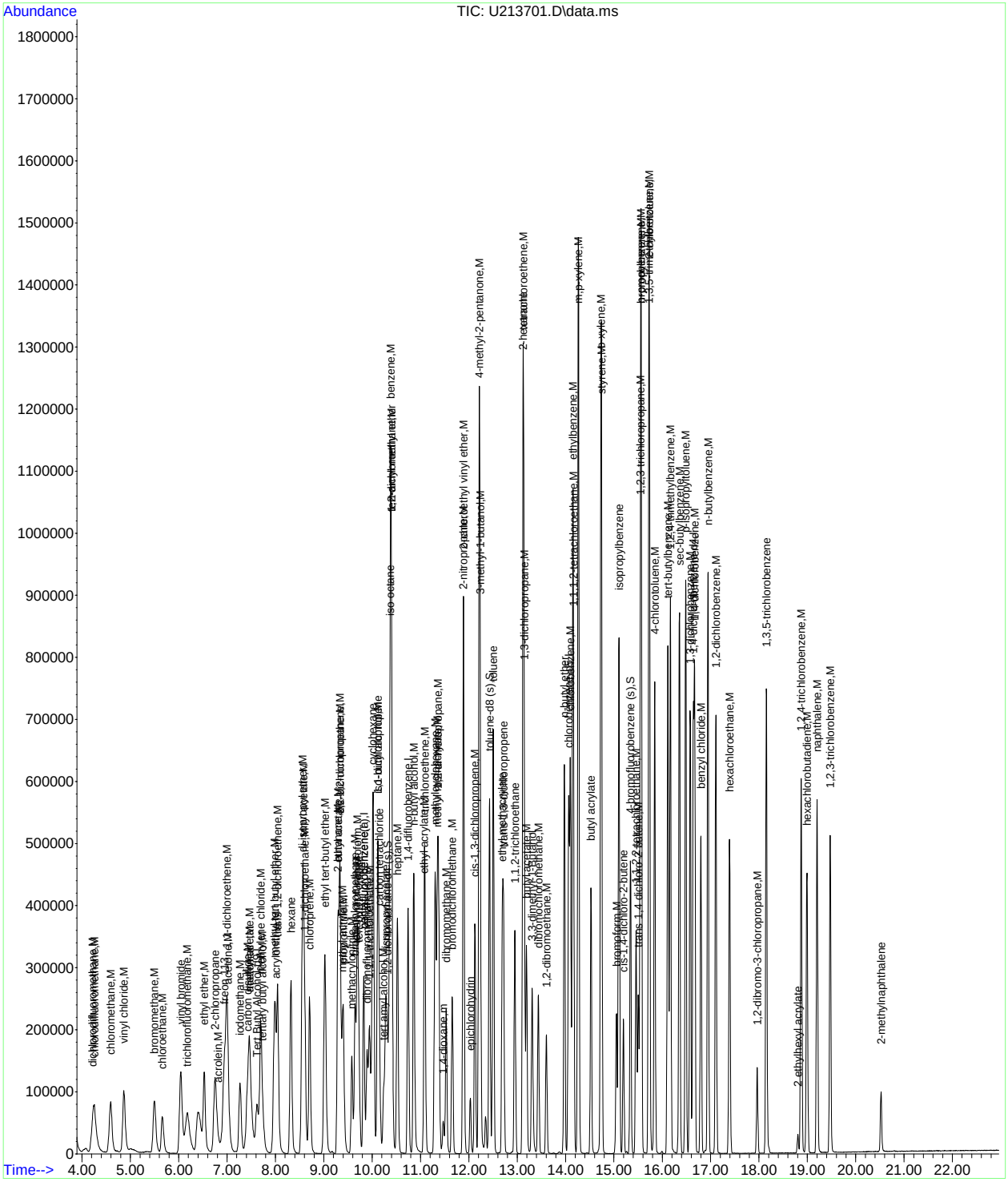
7.7.15

7

Quantitation Report (QT Reviewed)

Data Path : [redacted]U\vu9775-9776\
Data File : U213701.D
Acq On : 12 Apr 2017 3:28 pm
Operator : [redacted]
Sample : ecc9728-50
Misc : ms14688,vu9776,w,,,,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Apr 12 16:16:17 2017
Quant Method : [redacted]MU9728.M
Quant Title : SW-846 8260C, ZB624 60m x 250um x 1.40um
QLast Update : Mon Apr 03 10:07:26 2017
Response via : Initial Calibration



SGS ACCUTEST

VOLATILE ANALYSIS LOG

Batch ID: VU9728

Print Analyst Name: [redacted]

Analyst Signature: [redacted]

Date: MARCH 03, 2017

Columns: 7B0 A (100mm ID, 25mm id, 4m)

Method V82 WCC

Initial Cal. Method MU9728

Standard Data

Lot #	Description	Conc.
VO16-2451-	32.16 A	100ppm
VO16-2451-	41.8 B	100ppm
VO16-2451-	47.4 C	100ppm
VO16-2451-	33.11 E	100ppm
VO16-2451-	27 K	100ppm

Standard Data

Lot #	Description	Conc.
VO16-2451-	18 Ext A	100ppm
VO16-2451-	30 Ext B	100ppm
VO16-2451-	49.9 Ext C	100ppm
VO16-2451-	34.12 Ext E	100ppm
VO16-2451-	09.17 Ext K HEX	100ppm
VO16-2451-	22 3 Ext HEX	100ppm

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] **Date:** 3/6/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	U212473	lb					5						/		
	212474	DFB					5						RR	AREA down	
	212475	DFB					5						OK	12:40pm	
	212476	IC9728-0.2	8200 Initial Calibration	A O			5		1X	-	-	-	OK	2uLABCEK/100mL	
	212477	IC9728-0.5	√	A O			5		1X	-	-	-	OK	5uLABCEK(10)/100mL	
	212478	IC9728-1.0	√	A O			5		1X	-	-	-	OK	5uLABCEK/500mL	
	212479	IC9728-2.0	√	A O			5		1X	-	-	-	OK	10uLABCEK/500mL	
	212480	IC9728-5.0	√	A O			5		1X	-	-	-	OK	10uLABCEK/200mL	
	212481	IC9728-10.0	√	A O			5		1X	-	-	-	OK	10uLABCEK/100mL	
	212482	IC9728-20.0	√	A O			5		1X	-	-	-	OK	20uLABCEK/100mL	
	212483	IC9728-50	√	A O			5		1X	-	-	-	OK	50uLABCEK/100mL	
	212484	IC9728-100	√	A O			5		1X	-	-	-	OK	100uLABCEK/100mL	
	212485	IC9728-200	√	A O			5		1X	-	-	-	OK	200uLABCEK/100mL	
	212486	GCA 3/3/17 IC9728 1B					5						/		
	212487	1B					5						/		
	212488	ICV9728-SD	√	A S			5		1X	-	-	-	OK	SD,uLABCEHEXKEK)/100mL	
														GCA 3/3/17	

MTX = Matrix Designate W for water, S for soil, O for oil. L+ = Library Search. IS = Internal Standard Area. SU = Surrogate. Sample Amt = Volume (ML) or Weight (g); MOH amt. = volume (ul) extract injected * IF pH > 2, comment on sample result. All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

Form: OR001-10
Rev. Date: 1/19/16

SGS ACCUTEST JC40923

SGS ACCUTEST

VOLATILE ANALYSIS LOG

Batch ID: VU9765 (VU9728) (MM 4/13/17)

Date: 4/11/2017

Print Analyst Name: [redacted]

Analyst Signature: [redacted]

Columns: ZB624(60mx0.32mmx1.5µm)

Method V8260C

Initial Cal. Method MU9728.

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
017-245-145	IPA MIX	100ppm
017-245-114	EXT. PENTANE	100ppm

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 4/13/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	U213358	BFB											ok	9:18 AM	
	213359	IC9728-0.2	8260 Add on pentane				5						not used	0.2µl IPA MIX/100ml D.I H2O	
	213360	IC9728-0.5	✓				5						ok	0.5µl	
	213361	IC9728-1	✓				5						ok	1µl	
	213362	IC9728-2	✓				5						ok	2µl	
	213363	IC9728-5	✓				5						ok	5µl	
	213364	IC9728-10	✓				5						ok	10µl	
	213365	IC9728-20	✓				5						ok	20µl	
	213366	IC9728-50	✓				5						ok	50µl	
	213367	IC9728-100	✓				5						ok	100µl	
	213368	IC9728-200	✓				5						ok	200µl	
	213369	IB											—		
	213370	IB											—		
	213371	IC9728-50	✓				5						ok	50µl EXT. pentane/100ml D.I H2O	
	213372	IB											—		
														4/11/2017	

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate. Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result. All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

Form: OR001-10
Rev. Date: 1/19/16

7

7.8.2

SGS ACCUTEST

VOLATILE ANALYSIS LOG

PH216315

Batch ID: VU9776

Date: APRIL 12, 2017

Print Analyst Name: [redacted]

Analyst Signature: [redacted]

Columns: ZB624 100mX0.25mmX1.4u

Method V8260C

Initial Cal. Method MU9778

Standard Data

Lot #	Description		Conc.
VO17ASI-97.31		A	100ppm
VO17ASI-109.23		B	100ppm
VO17ASI-124.15		C	100ppm
VO17ASI-135.3		F	100ppm
VO17ASI-123.		IS	25ppm

Standard Data

Lot #	Description		Conc.
VO17ASI-121.11	fxt A		100ppm
VO17ASI-130.35	fxt B		100ppm
VO17ASI-129.5	fxt C		100ppm
VO17ASI-132.14	fxt F		100ppm
VO17ASI-128.9	fxt IS		100ppm

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

VO17ASI-98.15 fxt IS 100ppm VO17ASI-80.25 fxt F 400ppm

Supervisor Signature: HS Date: 4/12/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	U2131086	IB													
	2131087	BFB					5						CC	7:32am	
	2131089	CC9778-20					5						CC	#8V DUPLICATE 4/100ML	
	2131090	CC9778-1					5						CC	#8	
	2131091	MB GCA 4/12					5						NO DATA	CONTINUATION OF 90	
	2131092	IB GCA MB 4/12					5						NOT USED	BENZ GCA 4/12 BEAZ4 PURGED IB	
	2131093	MB					5						NO DATA		
	2131094	MB					5						CC		
	2131097	BS					5						CC		
	2131095	JC40923-3	14088 BTX	GW	2		5	1X					CC	DUP	
	2131096	JC40923-2	V	GW	2		5	1X					CC		
	2131097	JC40923-1	V	GW	2		5	1X					CC		
	2131098	JC40923-4	V	GW	2		5	1X					CC		
	2131099	JC40923-2dup 3ms GCA 4/12	V	GW	1		5	1X					CC		
	2131100	JC40923-3ms	V	GW	1		5	1X					CC		
	2131101	CC9778-50					5						CC	SOLVENT BLK/100ML	
														GCA 4/12/17	

TX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate.
Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result.
All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

Form: OR001-10
Rev. Date: 1/19/16

SGS ACCUTEST JC40923

SGS ACCUTEST IS PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

e-Hardcopy 2.0
Automated Report

Technical Report for

USACE-Philadelphia District

Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

SGS Accutest Job Number: [redacted]



Sampling Date: 04/19/17

Report to:

USACE-Philadelphia District
[redacted]@usace.army.mil
ATTN: [redacted]

Total number of pages in report: **112**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

[redacted]
Laboratory Director

Client Service contact: Matt Cordova 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (L-A-B L2248)

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Test results relate only to samples analyzed.

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Sample Summary

USACE-Philadelphia District

Job No: [redacted]

Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
[redacted]1	04/19/17	08:00	[redacted]	04/21/17	AQ	Equipment Blank	TANK RINSE
[redacted]2	04/19/17	08:30	[redacted]	04/21/17	AQ	Equipment Blank	TANK

CASE NARRATIVE / CONFORMANCE SUMMARY

Client: USACE-Philadelphia District **Job No** [redacted]

Site: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philad **Report Date** 4/25/2017 2:32:40 PM

On 04/21/2017, 2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS Accutest at a maximum corrected temperature of 2.8 C. Samples were intact and chemically preserved, unless noted below. A SGS Accutest Job Number of [redacted] was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method SW846 8260C

Matrix: AQ **Batch ID:** V3B6056

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JC41326-13MSD, JC41326-13MS were used as the QC samples indicated.
- JC41326-13MS: (pH=7) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

SGS Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS Accutest is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS Accutest indicated via signature on the report cover

Summary of Hits

Job Number: [redacted]
Account: USACE-Philadelphia District
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA
Collected: 04/19/17

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method

[redacted]**1** **TANK RINSE**

No hits reported in this sample.

[redacted]**2** **TANK**

No hits reported in this sample.

Sample Results

Report of Analysis

SGS Accutest

Report of Analysis

Client Sample ID: TANK RINSE
Lab Sample ID: [redacted]1
Matrix: AQ - Equipment Blank
Method: SW846 8260C
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Date Sampled: 04/19/17
Date Received: 04/21/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B136499.D	1	04/22/17	[redacted]	n/a	n/a	V3B6056
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	LOQ	LOD	Units	Q
71-43-2	Benzene	0.25 U	0.50	0.25	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	0.50 U	1.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		76-120%
17060-07-0	1,2-Dichloroethane-D4	102%		73-122%
2037-26-5	Toluene-D8	99%		84-119%
460-00-4	4-Bromofluorobenzene	94%		78-117%

U = Not detected LOD = Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS Accutest

Report of Analysis

Client Sample ID: TANK
Lab Sample ID: [redacted]2
Matrix: AQ - Equipment Blank
Method: SW846 8260C
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Date Sampled: 04/19/17
Date Received: 04/21/17
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3B136500.D	1	04/22/17	[redacted]	n/a	n/a	V3B6056
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	LOQ	LOD	Units	Q
71-43-2	Benzene	0.25 U	0.50	0.25	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	0.50 U	1.0	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		76-120%
17060-07-0	1,2-Dichloroethane-D4	104%		73-122%
2037-26-5	Toluene-D8	98%		84-119%
460-00-4	4-Bromofluorobenzene	92%		78-117%

U = Not detected LOD = Limit of Detection
LOQ = Limit of Quantitation
E = Indicates value exceeds calibration range

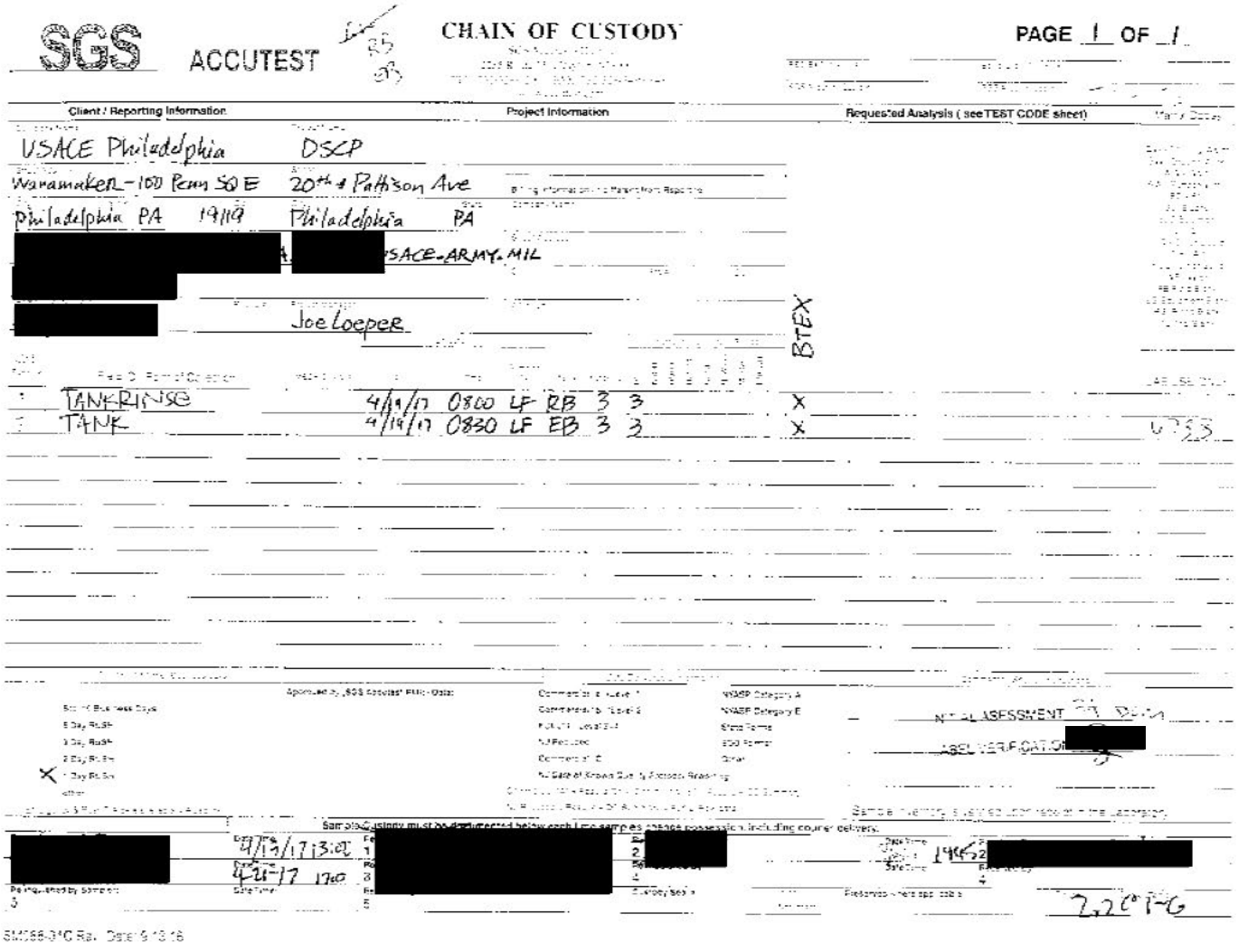
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody



SGS ACCUTEST

CHAIN OF CUSTODY

PAGE 1 OF 1

Client / Reporting Information | Project Information | Requested Analysis (see TEST CODE sheet)

USACE Philadelphia
Waramaker-100 Penn Sq E
Philadelphia PA 19119

DSCP
20th & Pattison Ave
Philadelphia PA

[redacted] SACE.ARMY.MIL

[redacted]

Joe Loeper

BTEX

1	TANK RINSE	4/19/17	0800	LF	RB	3	3	X	
2	TANK	4/19/17	0830	LF	EB	3	3	X	

1 Day Rush

[redacted]

4/19/17 13:00

4-20-17 1700

[redacted]

[redacted]

2.2°C-G

SM088-3°C Rev. Date: 9.13.16

JC41761: Chain of Custody
Page 1 of 2

SGS Accutest Sample Receipt Summary

Job Number: [redacted] **Client:** _____ **Project:** _____

Date / Time Received: 4/21/2017 5:10:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.2);

Cooler Temps (Corrected) °C: Cooler 1: (2.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☑	☐
2. Trip Blank listed on COC:	☐		☑	☐
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

SM089-02
Rev. Date 12/1/16

[redacted] Chain of Custody
Page 2 of 2

Internal Sample Tracking Chronicle

USACE-Philadelphia District

Job No: JC41761

Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC41761-1	Collected: 19-APR-17 08:00 By: [redacted]			Received: 21-APR-17 By: [redacted]		
TANK RINSE						
JC41761-1	SW846 8260C	22-APR-17 13:31	[redacted]			V8260BTX
JC41761-2	Collected: 19-APR-17 08:30 By: [redacted]			Received: 21-APR-17 By: [redacted]		
TANK						
JC41761-2	SW846 8260C	22-APR-17 13:59	[redacted]			V8260BTX

SGS Accutest Internal Chain of Custody

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA
Received: 04/21/17

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
[redacted] 1.2	Secured Storage	[redacted]	04/22/17 16:01	Retrieve from Storage
1.2	[redacted]	GCMS3B	04/22/17 16:01	Load on Instrument
[redacted] 2.1	Secured Storage	[redacted]	04/22/17 16:01	Retrieve from Storage
2.1	[redacted]	GCMS3B	04/22/17 16:01	Load on Instrument

GC/MS Volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3B6056-MB	3B136494.D	1	04/22/17	[redacted]	n/a	n/a	V3B6056

The QC reported here applies to the following samples: **Method:** SW846 8260C

[redacted] 1, [redacted] 2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.14	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	1.0	0.23	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	107%	76-120%
17060-07-0	1,2-Dichloroethane-D4	102%	73-122%
2037-26-5	Toluene-D8	99%	84-119%
460-00-4	4-Bromofluorobenzene	95%	78-117%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Blank Spike Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3B6056-BS	3B136495.D	1	04/22/17	[redacted]	n/a	n/a	V3B6056

The QC reported here applies to the following samples: **Method:** SW846 8260C

[redacted]1, [redacted]2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	50.1	100	80-118
100-41-4	Ethylbenzene	50	49.8	100	84-115
108-88-3	Toluene	50	50.0	100	84-117
1330-20-7	Xylene (total)	150	149	99	85-117

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	106%	76-120%
17060-07-0	1,2-Dichloroethane-D4	97%	73-122%
2037-26-5	Toluene-D8	99%	84-119%
460-00-4	4-Bromofluorobenzene	96%	78-117%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC41326-13MS [a]	3B136505.D	1	04/22/17	[redacted]	n/a	n/a	V3B6056
JC41326-13MSD	3B136506.D	1	04/22/17		n/a	n/a	V3B6056
JC41326-13 [a]	3B136501.D	1	04/22/17		n/a	n/a	V3B6056

The QC reported here applies to the following samples: **Method:** SW846 8260C

[redacted] 1, [redacted] 2

CAS No.	Compound	JC41326-13 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	0.58		50	51.7	102	50	52.8	104	2	54-138/11
100-41-4	Ethylbenzene	ND		50	49.3	99	50	50.3	101	2	48-143/11
108-88-3	Toluene	ND		50	48.1	96	50	48.6	97	1	61-136/11
1330-20-7	Xylene (total)	ND		150	145	97	150	149	99	3	56-141/11

CAS No.	Surrogate Recoveries	MS	MSD	JC41326-13	Limits
1868-53-7	Dibromofluoromethane	104%	105%	109%	76-120%
17060-07-0	1,2-Dichloroethane-D4	99%	101%	104%	73-122%
2037-26-5	Toluene-D8	98%	97%	98%	84-119%
460-00-4	4-Bromofluorobenzene	96%	96%	93%	78-117%

(a) (pH= 7) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

* = Outside of Control Limits.

Instrument Performance Check (BFB)

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Sample: V3B5999-BFB
Lab File ID: 3B135068.D
Instrument ID: GCMS3B
Injection Date: 03/02/17
Injection Time: 15:57

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	11859	17.6		Pass
75	30.0 - 60.0% of mass 95	31005	46.0		Pass
95	Base peak, 100% relative abundance	67445	100.0		Pass
96	5.0 - 9.0% of mass 95	4204	6.23		Pass
173	Less than 2.0% of mass 174	0	0.00	(0.00) [a]	Pass
174	50.0 - 150.0% of mass 95	62291	92.4		Pass
175	5.0 - 9.0% of mass 174	4618	6.85	(7.41) [a]	Pass
176	95.0 - 101.0% of mass 174	60531	89.7	(97.2) [a]	Pass
177	5.0 - 9.0% of mass 176	4139	6.14	(6.84) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3B5999-IC5999	3B135069.D	03/02/17	16:44	00:47	Initial cal 0.2
V3B5999-IC5999	3B135070.D	03/02/17	17:13	01:16	Initial cal 0.5
V3B5999-IC5999	3B135071.D	03/02/17	17:41	01:44	Initial cal 1
V3B5999-IC5999	3B135072.D	03/02/17	18:09	02:12	Initial cal 2
V3B5999-IC5999	3B135073.D	03/02/17	18:38	02:41	Initial cal 5
V3B5999-IC5999	3B135074.D	03/02/17	19:06	03:09	Initial cal 10
V3B5999-IC5999	3B135075.D	03/02/17	19:34	03:37	Initial cal 20
V3B5999-ICC5999	3B135076.D	03/02/17	20:03	04:06	Initial cal 50
V3B5999-IC5999	3B135077.D	03/02/17	20:31	04:34	Initial cal 100
V3B5999-IC5999	3B135078.D	03/02/17	21:00	05:03	Initial cal 200
V3B5999-ICV5999	3B135081.D	03/02/17	22:25	06:28	Initial cal verification 50

Instrument Performance Check (BFB)

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Sample:	V3B6056-BFB	**Injection Date:**	04/22/17
Lab File ID:	3B136493A.D	**Injection Time:**	10:09
Instrument ID:	GCMS3B		

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	15.0 - 40.0% of mass 95	10433	18.1		Pass
75	30.0 - 60.0% of mass 95	26221	45.4		Pass
95	Base peak, 100% relative abundance	57800	100.0		Pass
96	5.0 - 9.0% of mass 95	3905	6.76		Pass
173	Less than 2.0% of mass 174	203	0.35	(0.37) [a]	Pass
174	50.0 - 150.0% of mass 95	54509	94.3		Pass
175	5.0 - 9.0% of mass 174	4207	7.28	(7.72) [a]	Pass
176	95.0 - 101.0% of mass 174	53411	92.4	(98.0) [a]	Pass
177	5.0 - 9.0% of mass 176	3505	6.06	(6.56) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3B6056-CC5999	3B136493.D	04/22/17	10:09	00:00	Continuing cal 20
V3B6056-MB	3B136494.D	04/22/17	10:48	00:39	Method Blank
V3B6056-BS	3B136495.D	04/22/17	11:28	01:19	Blank Spike
[redacted] 1	3B136499.D	04/22/17	13:31	03:22	TANK RINSE
[redacted] 2	3B136500.D	04/22/17	13:59	03:50	TANK
JC41326-13	3B136501.D	04/22/17	14:28	04:19	(used for QC only; not part of job [redacted]
JC41326-13MS	3B136505.D	04/22/17	16:21	06:12	Matrix Spike
JC41326-13MSD	3B136506.D	04/22/17	16:49	06:40	Matrix Spike Duplicate
V3B6056-ECC5999	3B136516.D	04/22/17	21:32	11:23	Ending cal 20

Volatile Internal Standard Area Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Check Std:	V3B6056-CC5999	**Injection Date:**	04/22/17
Lab File ID:	3B136493.D	**Injection Time:**	10:09
Instrument ID:	GCMS3B	**Method:**	SW846 8260C

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	79709	7.98	155622	10.53	221585	11.51	221478	14.85	148443	17.35
Upper Limit [a]	159418	8.48	311244	11.03	443170	12.01	442956	15.35	296886	17.85
Lower Limit [b]	39855	7.48	77811	10.03	110793	11.01	110739	14.35	74222	16.85

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
V3B6056-MB	86599	7.98	155023	10.52	214882	11.51	214012	14.85	149800	17.35
V3B6056-BS	77994	7.98	150501	10.52	218727	11.51	215973	14.85	146727	17.35
[redacted]1	70250	7.99	149964	10.52	208557	11.51	205186	14.85	145949	17.35
[redacted]2	73757	7.98	156225	10.52	215990	11.51	216811	14.85	155156	17.35
JC41326-13	68947	7.98	149258	10.52	210327	11.51	209089	14.85	147903	17.35
JC41326-13MS [c]	69690	7.99	151818	10.52	212248	11.51	216848	14.85	147823	17.35
JC41326-13MSD	78063	7.99	157071	10.52	219855	11.51	227979	14.85	153961	17.35
V3B6056-ECC5999	77827	7.99	150771	10.52	212107	11.51	214646	14.85	144507	17.35

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) (pH= 7) Sample is not acid preserved per method/client criteria. Sample analyzed within 7 days holding time.

Volatile Surrogate Recovery Summary

Job Number: [redacted]
Account: USACEPAP USACE-Philadelphia District
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Method: SW846 8260C **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
[redacted]1	3B136499.D	104	102	99	94
[redacted]2	3B136500.D	107	104	98	92
JC41326-13MS	3B136505.D	104	99	98	96
JC41326-13MSD	3B136506.D	105	101	97	96
V3B6056-BS	3B136495.D	106	97	99	96
V3B6056-MB	3B136494.D	107	102	99	95

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	76-120%
S2 = 1,2-Dichloroethane-D4	73-122%
S3 = Toluene-D8	84-119%
S4 = 4-Bromofluorobenzene	78-117%

Initial Calibration Summary

Job Number: [redacted] **Sample:** V3B5999-ICC5999
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** 3B135076.D
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Response Factor Report MS3B

Method : [redacted]M3B5999.m (RTE Integrator)
Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
Last Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

Calibration Files
1 =3b135071.D 5 =3b135073.D 100 =3b135077.D 50 =3b135076.D
20 =3b135075.D 200 =3b135078.D 10 =3b135074.D 0.5 =3b135070.D
2 =3b135072.D 0.2 =3b135069.D = =

Compound	1	5	100	50	20	200	10	0.5	2	0.2	Avg	%RSD
1) I Tert Butyl Alcohol-d9	----------ISTD----------											
2) ethanol											0.000	-1.00
3) tertiary butyl alcohol	1.125	1.143	1.160	1.232	1.162	1.141		0.775			1.105	13.56
4) 1,4-dioxane	0.098	0.104	0.104	0.113	0.105	0.106					0.105	4.49
5) I pentafluorobenzene	----------ISTD----------											
6) chlorodifluoromethane	1.112	1.148	1.135	1.207	1.077	1.122		0.908			1.101	8.53
7) dichlorodifluoromethane	1.047	1.471	1.478	1.404	1.432	1.317	1.421	1.213	1.337		1.347	10.41
8) chloromethane	1.121	1.237	1.469	1.348	1.246	1.411	1.201	1.241	1.094		1.263	9.91
9) vinyl chloride	1.276	1.505	1.581	1.516	1.460	1.456	1.421	1.349	1.283		1.427	7.41
10) bromomethane	0.703	0.739	0.809	0.763	0.745	0.707	0.711	0.713	0.698		0.732	4.96
11) chloroethane	0.547	0.601	0.608	0.595	0.589	0.558	0.575	0.461	0.504		0.560	8.79
12) trichlorofluoromethane	1.019	1.292	1.278	1.217	1.234	1.170	1.206		1.110		1.191	7.57
13) vinyl bromide--The compound does not meet initial criteria.	1.005	1.154	1.228	1.186	1.147	1.146	1.120	1.041	1.015		1.116	7.01
14) ethyl ether	0.248	0.268	0.267	0.277	0.256	0.267		0.213			0.257	8.28
15) 2-chloropropane	1.148	1.136	1.121	1.133	1.233	1.036	1.192	1.184	1.013		1.133	6.26
16) acrolein	0.082	0.088	0.089	0.093	0.087	0.090		0.077			0.086	6.34
17) freon 113	0.639	0.625	0.637	0.684	0.582	0.639		0.521			0.618	8.43
18) 1,1-dichloroethene	0.480	0.563	0.559	0.550	0.598	0.512	0.591		0.478		0.541	8.59
19) acetone	0.035	0.040	0.040	0.045	0.040	0.040		0.030			0.038	12.24
20) acetonitrile	0.106	0.091	0.094	0.104	0.091	0.102		0.100			0.098	6.43
21) iodomethane	0.982	1.145	1.225	1.195	1.268	1.161	1.240	0.973	1.038		1.136	9.86
22) carbon disulfide	1.924	2.188	2.259	2.214	2.389	2.083	2.320	1.967	1.946		2.143	7.98
23) methylene chloride												

Initial Calibration Summary

Job Number: [redacted] **Sample:** V3B5999-ICC5999
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** 3B135076.D
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

	0.623	0.616	0.638	0.619	0.664	0.611	0.654	0.567	0.552		0.616	5.95
24)	methyl acetate											
		0.376	0.337	0.353	0.374	0.343	0.363		0.340		0.355	4.53
25)	methyl tert butyl ether											
	1.586	1.707	1.811	1.797	1.914	1.780	1.850	1.519	1.456		1.713	9.23
26)	trans-1,2-dichloroethene											
	0.545	0.548	0.566	0.567	0.604	0.527	0.605	0.591	0.516		0.563	5.74
27)	hexane											
	0.326	0.414	0.379	0.391	0.411	0.361	0.398		0.338		0.377	8.72
28)	di-isopropyl ether											
	1.849	2.181	2.207	2.252	2.370	2.179	2.235	2.054	1.996		2.147	7.27
29)	2-butanone											
		0.036	0.043	0.042	0.045	0.044	0.043		0.027		0.040	16.34
30)	1,1-dichloroethane											
	0.864	0.966	1.025	1.024	1.108	0.967	1.079		0.900		0.991	8.44
31)	chloroprene											
	0.651	0.811	0.824	0.847	0.884	0.790	0.824	0.720	0.710		0.785	9.58
32)	acrylonitrile											
		0.180	0.203	0.200	0.217	0.203	0.213				0.203	6.33
33)	vinyl acetate											
		0.059	0.082	0.074	0.088	0.080	0.076				0.076	12.88
34)	ethyl tert-butyl ether											
	1.524	1.905	2.030	2.020	2.112	2.028	1.978	1.708	1.680		1.887	10.67
35)	ethyl acetate											
		0.061	0.063	0.063	0.067	0.061	0.059				0.062	3.98
36)	2,2-dichloropropane											
	0.995	1.072	1.100	1.086	1.187	1.011	1.164	0.973	0.988		1.064	7.32
37)	cis-1,2-dichloroethene											
	0.585	0.601	0.621	0.612	0.665	0.594	0.647	0.617	0.541		0.609	5.86
38)	propionitrile											
	0.054	0.064	0.067	0.068	0.071	0.069	0.072		0.057		0.065	10.01
39)	methyl acrylate											
		0.048	0.061	0.060	0.062	0.062	0.056				0.058	9.57
40)	methacrylonitrile											
		0.160	0.174	0.170	0.187	0.181	0.183				0.176	5.59
41)	bromochloromethane											
	0.235	0.281	0.297	0.295	0.306	0.294	0.305		0.234		0.281	10.62
42)	tetrahydrofuran											
		0.144	0.136	0.138	0.149	0.140	0.146		0.145		0.143	3.20
43)	chloroform											
	0.819	0.913	0.939	0.920	0.982	0.907	0.965	0.945	0.857	1.060	0.931	7.14
44)	tert-Butyl Formate											
	0.468	0.599	0.645	0.646	0.672	0.650	0.611		0.541		0.604	11.31
45)	dibromofluoromethane (s)											
	0.472	0.465	0.471	0.476	0.467	0.485	0.463	0.461	0.463	0.465	0.469	1.58
46)	1,1,1-trichloroethane											
	0.856	0.984	1.074	1.039	1.111	1.011	1.087	0.927	0.847		0.993	9.85
47)	cyclohexane											
	0.692	0.953	0.948	0.944	0.992	0.892	0.948		0.924		0.912	10.20
48)	isobutyl alcohol											
											0.000	-1.00
49)	1,1-dichloropropene											
	0.554	0.666	0.709	0.694	0.744	0.668	0.733		0.567		0.667	10.68
50)	carbon tetrachloride											
	0.741	0.902	0.947	0.924	1.007	0.884	0.981		0.760		0.893	10.84
51)	tert-amyl alcohol											
		0.033	0.028	0.030	0.033	0.028	0.033		0.027		0.030	8.85
52)	isopropyl acetate											
		0.094	0.090	0.092	0.094	0.091	0.085				0.091	3.41

Initial Calibration Summary

Job Number: [redacted] **Sample:** V3B5999-ICC5999
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** 3B135076.D
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

53) I 1,4-difluorobenzene ----------ISTD----------
54) 1,2-dichloroethane-d4 (s)
0.333 0.329 0.328 0.329 0.329 0.323 0.328 0.336 0.332 0.334 0.330 1.10
55) n-butyl alcohol
0.011 0.009 0.009 0.011 0.009 0.010 0.010 8.74
56) 2,2,4-Trimethylpentane
1.601 1.912 1.823 1.796 1.879 1.626 1.377 1.716 11.13
57) benzene
1.295 1.399 1.489 1.454 1.579 1.417 1.533 1.273 1.229 1.206 1.388 9.41
58) tert-amyl methyl ether
1.043 1.229 1.264 1.272 1.345 1.245 1.227 1.171 1.118 1.213 7.42
59) heptane
0.228 0.320 0.291 0.298 0.321 0.270 0.307 0.262 0.287 11.15
60) 1,2-dichloroethane
0.346 0.420 0.434 0.430 0.468 0.422 0.451 0.378 0.419 9.40
61) ethyl acrylate
0.317 0.336 0.337 0.368 0.328 0.355 0.305 0.335 6.48
62) trichloroethene
0.304 0.330 0.361 0.351 0.379 0.344 0.373 0.303 0.343 8.49
63) 2-chloroethyl vinyl ether
0.160 0.206 0.201 0.203 0.222 0.197 0.210 0.180 0.181 0.131 0.189 14.31
64) methyl methacrylate
0.074 0.077 0.076 0.080 0.076 0.078 0.077 2.99
65) methylcyclohexane
0.648 0.820 0.843 0.842 0.901 0.793 0.828 0.726 0.800 9.86
66) 1,2-dichloropropane
0.317 0.372 0.397 0.388 0.420 0.379 0.409 0.336 0.377 9.27
67) dibromomethane
0.185 0.201 0.209 0.206 0.220 0.204 0.222 0.188 0.204 6.54
68) bromodichloromethane
0.392 0.439 0.475 0.460 0.498 0.469 0.476 0.401 0.451 8.29
69) 2-nitropropane
0.077 0.073 0.075 0.082 0.072 0.088 0.072 0.077 7.90
70) epichlorohydrin
0.031 0.032 0.031 0.030 0.033 0.031 0.031 0.032 0.031 2.74
71) cis-1,3-dichloropropene
0.497 0.548 0.581 0.569 0.614 0.567 0.591 0.464 0.478 0.545 9.75
72) 4-methyl-2-pentanone
0.115 0.112 0.122 0.124 0.134 0.120 0.132 0.113 0.123 0.122 6.48
73) isoamyl alcohol
0.011 0.009 0.009 0.011 0.009 0.011 0.008 0.010 12.28

74) I chlorobenzene-d5 ----------ISTD----------
75) toluene-d8 (s)
1.261 1.249 1.263 1.263 1.244 1.259 1.266 1.269 1.258 1.282 1.261 0.82
76) toluene
0.787 0.855 0.937 0.914 0.973 0.879 0.976 0.734 0.799 0.873 9.84
77) ethyl methacrylate
0.355 0.416 0.427 0.431 0.456 0.403 0.441 0.385 0.365 0.409 8.47
78) trans-1,3-dichloropropene
0.435 0.482 0.505 0.495 0.538 0.480 0.519 0.419 0.484 8.30
79) 1,1,2-trichloroethane
0.246 0.243 0.258 0.253 0.270 0.247 0.269 0.206 0.249 8.05
80) tetrachloroethene
0.287 0.322 0.340 0.332 0.360 0.316 0.351 0.285 0.324 8.52
81) 2-hexanone
0.103 0.103 0.105 0.108 0.121 0.100 0.118 0.096 0.114 0.107 7.91
82) 1,3-dichloropropane
0.452 0.472 0.491 0.488 0.526 0.471 0.522 0.406 0.451 0.436 0.471 7.92
83) butyl acetate

Initial Calibration Summary

Job Number: [redacted] **Sample:** V3B5999-ICC5999
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** 3B135076.D
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

		0.190	0.226	0.205	0.214	0.231	0.191	0.222	0.170	0.199	0.205	9.69
84)	3,3-Dimethyl-1-Butanol											
		0.028	0.034	0.027	0.029	0.034	0.026	0.034	0.028	0.030	0.030	11.10
85)	dibromochloromethane											
		0.314	0.348	0.388	0.382	0.401	0.380	0.389		0.303	0.363	10.19
86)	1,2-dibromoethane											
		0.264	0.320	0.326	0.319	0.343	0.316	0.329		0.275	0.312	8.78
87)	n-butyl ether											
		1.618	1.725	1.848	1.839	1.943	1.750	1.915	1.601	1.514	1.750	8.51
88)	chlorobenzene											
		0.940	1.039	1.062	1.041	1.113	1.026	1.109	0.842	0.916	1.010	9.06
89)	1,1,1,2-tetrachloroethane											
		0.408	0.466	0.519	0.503	0.515	0.507	0.507		0.377	0.475	11.37
90)	ethylbenzene											
		1.650	1.828	1.910	1.864	2.012	1.790	1.990	1.659	1.599	1.546	1.785	9.21
91)	m,p-xylene											
		0.639	0.702	0.743	0.722	0.780	0.703	0.760	0.600	0.602	0.695	9.59
92)	o-xylene											
		1.484	1.608	1.775	1.714	1.808	1.709	1.784	1.400	1.418	1.633	9.90
93)	styrene											
		1.043	1.172	1.242	1.208	1.291	1.180	1.274	1.068	1.038	1.030	1.155	8.82
94)	butyl acrylate											
		0.665	0.698	0.654	0.674	0.719	0.619	0.720	0.718	0.648	0.679	5.36
95)	isopropylbenzene											
		1.876	2.161	2.412	2.322	2.437	2.297	2.383		1.888	2.222	10.20
96)	bromoform											
		0.251	0.262	0.285	0.277	0.282	0.279	0.280	0.169	0.226	0.257	14.84
97)	cis-1,4-dichloro-2-butene											
			0.109	0.126	0.124	0.130	0.122	0.127		0.108	0.121	7.24
98)	cyclohexanone											
											0.000	-1.00
99)	I 1,4-dichlorobenzene-d ----------ISTD----------											
100)	4-bromofluorobenzene (s)											
		0.728	0.724	0.752	0.744	0.735	0.746	0.728	0.711	0.724	0.739	0.733	1.69
101)	1,1,2,2-tetrachloroethane											
		0.602	0.656	0.737	0.732	0.766	0.723	0.728		0.608	0.694	9.08
102)	trans-1,4-dichloro-2-butene											
			0.158	0.169	0.170	0.178	0.162	0.178		0.136	0.164	8.93
103)	1,2,3-trichloropropane											
			0.157	0.176	0.172	0.186	0.172	0.180		0.132	0.168	10.83
104)	bromobenzene											
		0.610	0.735	0.790	0.764	0.811	0.761	0.786		0.631	0.736	10.20
105)	n-propylbenzene											
		3.033	3.426	3.936	3.778	3.993	3.674	3.853		3.011	3.588	10.88
106)	2-chlorotoluene											
		0.635	0.696	0.826	0.795	0.830	0.787	0.797		0.622	0.748	11.31
107)	4-chlorotoluene											
		1.842	2.033	2.179	2.105	2.247	2.077	2.198	1.732	1.804	2.024	9.25
108)	1,3,5-trimethylbenzene											
		2.294	2.659	3.267	3.084	3.222	3.158	3.032		2.287	2.875	14.11
109)	tert-butylbenzene											
			2.162	2.847	2.608	2.674	2.781	2.458		1.832	2.480	14.73
110)	1,2,4-trimethylbenzene											
		2.440	2.823	3.274	3.103	3.267	3.182	3.109		2.388	2.948	12.17
111)	sec-butylbenzene											
			3.594	4.535	4.230	4.445	4.323	4.163		3.073	4.052	13.03
112)	p-isopropyltoluene											
		2.776	3.308	3.988	3.765	3.948	3.816	3.723		2.783	3.513	14.16
113)	1,3-dichlorobenzene											

Initial Calibration Summary

Job Number: [redacted] **Sample:** V3B5999-ICC5999
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** 3B135076.D
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

```
       1.466 1.638 1.708 1.678 1.803 1.650 1.739 1.447 1.380 1.586  1.609    8.57
114)  1,4-dichlorobenzene
       1.547 1.616 1.705 1.662 1.776 1.658 1.745 1.391 1.434        1.615    8.26
115)  1,2-dichlorobenzene
       1.529 1.678 1.833 1.794 1.891 1.787 1.840 1.529 1.528        1.712    8.71
116)  Benzyl Chloride
       1.206 1.454 1.427 1.455 1.537 1.391 1.437 1.352 1.298        1.395    7.02
117)  n-butylbenzene
       1.562 1.739 2.004 1.933 2.034 1.901 1.956 1.475 1.504        1.790   12.51
118)  hexachloroethane
             0.532 0.770 0.695 0.688 0.761 0.629       0.443        0.645   18.69
119)  1,2-dibromo-3-chloropropane
             0.204 0.230 0.228 0.235 0.233 0.228       0.179        0.219    9.28
120)  1,3,5-trichlorobenzene
       1.687 1.888 2.189 2.085 2.239 2.057 2.136       1.687        1.996   10.89
121)  2-ethylhexyl acrylate
                   1.567 1.397 1.332 1.522 1.111                    1.386   13.02
122)  1,2,4-trichlorobenzene
       1.645 1.820 2.118 2.051 2.173 2.000 2.078 1.650 1.555        1.899   12.34
123)  hexachlorobutadiene
             0.947 1.097 1.049 1.102 1.004 1.066       0.801        1.010   10.59
124)  naphthalene
             3.393 3.984 3.922 4.155 3.815 3.896       2.887        3.722   11.71
125)  1,2,3-trichlorobenzene
       1.384 1.568 1.881 1.826 1.935 1.785 1.826 1.417 1.342 1.769  1.673   13.37
126)  2-methylnaphthalene--The compound does not meet initial criteria.
             1.350 2.196 2.027 1.977 2.181 1.644                    1.896   17.59
 ------------------------------------------------------------------------------
 (#) = Out of Range  ###  Number of calibration levels exceeded format  ###

           M3B5999.m         Fri Mar 03 12:05:49 2017   M3B
```

Initial Calibration Verification

Job Number: [redacted] **Sample:** V3B5999-ICV5999
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** 3B135081.D
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : [redacted]3b135081.D Vial: 14
Acq On : 2 Mar 2017 10:25 pm Operator: [redacted]
Sample : icv5999-50 Inst : MS3B
Misc : MS12964,V3B5999,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : [redacted]M3B5999.m (RTE Integrator)
Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
Last Update : Fri Mar 03 11:48:36 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	105	0.00	7.99
2		ethanol		----------NA----------				
3		tertiary butyl alcohol	1.105	1.147	-3.8	104	-0.02	8.12
4		1,4-dioxane	0.105	0.093	11.4	93	0.00	12.18
5	I	pentafluorobenzene	1.000	1.000	0.0	105	0.00	10.53
6		chlorodifluoromethane	1.101	0.908	17.5	84	0.00	4.16
7		dichlorodifluoromethane	1.347	1.094	18.8	82	-0.01	4.13
8		chloromethane	1.263	1.152	8.8	89	0.00	4.50
9		vinyl chloride	1.427	1.265	11.4	87	0.00	4.80
10		bromomethane	0.732	0.701	4.2	96	0.00	5.51
11		chloroethane	0.560	0.565	-0.9	99	0.00	5.72
12		trichlorofluoromethane	1.191	1.144	3.9	98	0.00	6.28
13		vinyl bromide	1.116	0.736	34.1#	65	0.00	6.13
14		ethyl ether	0.257	0.280	-8.9	110	0.00	6.73
15		2-chloropropane	1.133	1.175	-3.7	109	0.00	6.98
16		acrolein	0.086	0.108	-25.6	127	0.00	6.99
17		freon 113	0.618	0.709	-14.7	116	-0.01	7.24
18		1,1-dichloroethene	0.541	0.559	-3.3	106	0.00	7.21
19		acetone	0.038	0.042	-10.5	108	0.00	7.22
20		acetonitrile	0.098	0.077	21.4	85	0.00	7.70
21		iodomethane	1.136	1.262	-11.1	110	0.00	7.50
22		carbon disulfide	2.143	2.472	-15.4	117	0.00	7.66
23		methylene chloride	0.616	0.661	-7.3	112	0.00	8.04
24		methyl acetate	0.355	0.346	2.5	103	0.00	7.76
25		methyl tert butyl ether	1.713	1.854	-8.2	108	0.00	8.46
26		trans-1,2-dichloroethene	0.563	0.586	-4.1	108	0.00	8.49
27		hexane	0.377	0.276	26.8	74	0.00	8.90
28		di-isopropyl ether	2.147	2.184	-1.7	101	0.00	9.14
29		2-butanone	0.040	0.043	-7.5	108	0.00	9.85
30		1,1-dichloroethane	0.991	1.067	-7.7	109	0.00	9.14
31		chloroprene	0.785	0.843	-7.4	104	0.00	9.25
32		acrylonitrile	0.203	0.233	-14.8	122	0.00	8.38
33		vinyl acetate	0.076	0.078	-2.6	110	0.00	9.08
34		ethyl tert-butyl ether	1.887	2.031	-7.6	105	0.00	9.65
35		ethyl acetate	0.062	0.062	0.0	103	0.00	9.89
36		2,2-dichloropropane	1.064	1.087	-2.2	105	0.00	9.97
37		cis-1,2-dichloroethene	0.609	0.656	-7.7	112	0.00	9.93
38		propionitrile	0.065	0.069	-6.2	106	0.00	9.94
39		methyl acrylate	0.058	0.061	-5.2	105	0.00	9.97
40		methacrylonitrile	0.176	0.180	-2.3	111	0.00	10.16
41		bromochloromethane	0.281	0.307	-9.3	109	0.00	10.25

Initial Calibration Verification

Job Number: [redacted] **Sample:** V3B5999-ICV5999
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** 3B135081.D
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

42		tetrahydrofuran	0.143	0.143	0.0	109	0.00	10.26
43		chloroform	0.931	0.991	-6.4	113	0.00	10.35
44		tert-Butyl Formate	0.604	0.488	19.2	79	0.00	10.39
45	S	dibromofluoromethane (s)	0.469	0.482	-2.8	106	0.00	10.56
46		1,1,1-trichloroethane	0.993	1.094	-10.2	110	0.00	10.62
47		cyclohexane	0.912	1.061	-16.3	118	0.00	10.74
48		isobutyl alcohol		----------NA----------				
49		1,1-dichloropropene	0.667	0.718	-7.6	108	0.00	10.80
50		carbon tetrachloride	0.893	0.963	-7.8	109	0.00	10.83
51		tert-amyl alcohol	0.030	0.027	10.0	96	0.00	10.95
52		isopropyl acetate	0.091	0.087	4.4	99	0.00	10.98
53	I	1,4-difluorobenzene	1.000	1.000	0.0	105	0.00	11.51
54	S	1,2-dichloroethane-d4 (s)	0.330	0.331	-0.3	105	0.00	11.00
55		n-butyl alcohol	0.010	0.008	20.0	93	0.00	11.56
56		2,2,4-Trimethylpentane	1.716	1.811	-5.5	104	0.00	11.17
57		benzene	1.388	1.519	-9.4	109	0.00	11.06
58		tert-amyl methyl ether	1.213	1.312	-8.2	108	0.00	11.16
59		heptane	0.287	0.288	-0.3	101	0.00	11.34
60		1,2-dichloroethane	0.419	0.450	-7.4	110	0.00	11.10
61		ethyl acrylate	0.335	0.359	-7.2	111	0.00	11.82
62		trichloroethene	0.343	0.368	-7.3	110	0.00	11.83
63		2-chloroethyl vinyl ether	0.189	0.209	-10.6	108	0.00	12.67
64		methyl methacrylate	0.077	0.080	-3.9	111	0.00	12.10
65		methylcyclohexane	0.800	0.803	-0.4	100	0.00	12.15
66		1,2-dichloropropane	0.377	0.415	-10.1	112	0.00	12.13
67		dibromomethane	0.204	0.221	-8.3	112	0.00	12.26
68		bromodichloromethane	0.451	0.487	-8.0	111	0.00	12.42
69		2-nitropropane	0.077	0.080	-3.9	112	0.00	12.62
70		epichlorohydrin	0.031	0.029	6.5	100	0.00	12.76
71		cis-1,3-dichloropropene	0.545	0.592	-8.6	109	0.00	12.90
72		4-methyl-2-pentanone	0.122	0.126	-3.3	107	0.00	13.00
73		isoamyl alcohol	0.010	0.009	10.0	102	0.00	13.01
74	I	chlorobenzene-d5	1.000	1.000	0.0	105	0.00	14.85
75	S	toluene-d8 (s)	1.261	1.266	-0.4	105	0.00	13.23
76		toluene	0.873	0.953	-9.2	109	0.00	13.31
77		ethyl methacrylate	0.409	0.441	-7.8	107	0.00	13.49
78		trans-1,3-dichloropropene	0.484	0.520	-7.4	110	0.00	13.51
79		1,1,2-trichloroethane	0.249	0.266	-6.8	110	0.00	13.75
80		tetrachloroethene	0.324	0.350	-8.0	111	0.00	13.90
81		2-hexanone	0.107	0.110	-2.8	106	0.00	13.91
82		1,3-dichloropropane	0.471	0.511	-8.5	110	0.00	13.94
83		butyl acetate	0.205	0.215	-4.9	106	0.00	14.00
84		3,3-Dimethyl-1-Butanol	0.030	0.028	6.7	102	0.00	14.11
85		dibromochloromethane	0.363	0.403	-11.0	111	0.00	14.21
86		1,2-dibromoethane	0.312	0.331	-6.1	109	0.00	14.37
87		n-butyl ether	1.750	1.978	-13.0	113	0.00	14.83
88		chlorobenzene	1.010	1.096	-8.5	110	0.00	14.89
89		1,1,1,2-tetrachloroethane	0.475	0.526	-10.7	110	0.00	14.96
90		ethylbenzene	1.785	1.954	-9.5	110	0.00	14.95
91		m,p-xylene	0.695	0.760	-9.4	110	0.00	15.08
92		o-xylene	1.633	1.781	-9.1	109	0.00	15.51
93		styrene	1.155	1.269	-9.9	110	0.00	15.52
94		butyl acrylate	0.679	0.735	-8.2	114	0.00	15.32
95		isopropylbenzene	2.222	2.418	-8.8	109	0.00	15.88
96		bromoform	0.257	0.295	-14.8	112	0.00	15.78
97		cis-1,4-dichloro-2-butene	0.121	0.129	-6.6	109	0.00	15.92
98		cyclohexanone		----------NA----------				

Initial Calibration Verification

Job Number: [redacted] **Sample:** V3B5999-ICV5999
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** 3B135081.D
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

99	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	104	0.00	17.35
100	S	4-bromofluorobenzene (s)	0.733	0.754	-2.9	106	0.00	16.10
101		1,1,2,2-tetrachloroethane	0.694	0.754	-8.6	107	0.00	16.19
102		trans-1,4-dichloro-2-bute	0.164	0.175	-6.7	107	0.00	16.22
103		1,2,3-trichloropropane	0.168	0.186	-10.7	113	0.00	16.28
104		bromobenzene	0.736	0.812	-10.3	111	0.00	16.30
105		n-propylbenzene	3.588	3.951	-10.1	109	0.00	16.33
106		2-chlorotoluene	0.748	0.839	-12.2	110	0.00	16.48
107		4-chlorotoluene	2.024	2.215	-9.4	110	0.00	16.60
108		1,3,5-trimethylbenzene	2.875	3.245	-12.9	110	0.00	16.50
109		tert-butylbenzene	2.480	2.735	-10.3	109	0.00	16.86
110		1,2,4-trimethylbenzene	2.948	3.321	-12.7	112	0.00	16.92
111		sec-butylbenzene	4.052	4.435	-9.5	109	0.00	17.09
112		p-isopropyltoluene	3.513	3.877	-10.4	107	0.00	17.22
113		1,3-dichlorobenzene	1.609	1.735	-7.8	108	0.00	17.28
114		1,4-dichlorobenzene	1.615	1.743	-7.9	109	0.00	17.38
115		1,2-dichlorobenzene	1.712	1.888	-10.3	110	0.00	17.76
116		Benzyl Chloride	1.395	1.215	12.9	87	0.00	17.46
117		n-butylbenzene	1.790	1.988	-11.1	107	0.00	17.65
118		hexachloroethane	0.645	0.745	-15.5	112	0.00	18.07
119		1,2-dibromo-3-chloropropa	0.219	0.231	-5.5	106	0.00	18.54
120		1,3,5-trichlorobenzene	1.996	3.607	-80.7#	180	0.00	18.72
121		2-ethylhexyl acrylate	1.386	1.551	-11.9	116	0.00	19.32
122		1,2,4-trichlorobenzene	1.899	2.092	-10.2	106	0.00	19.34
123		hexachlorobutadiene	1.010	1.081	-7.0	107	0.00	19.45
124		naphthalene	3.722	3.974	-6.8	106	0.00	19.63
125		1,2,3-trichlorobenzene	1.673	1.876	-12.1	107	0.00	19.85
126		2-methylnaphthalene		----------NA----------				

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3b135076.D M3B5999.m Fri Mar 03 12:03:36 2017 M3B

Continuing Calibration Summary

Job Number: [redacted] **Sample:** V3B6056-CC5999
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** 3B136493.D
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : [redacted]3B\v3b6055-56\3b136493.D Vial: 2
Acq On : 22 Apr 2017 10:09 am Operator: [redacted]
Sample : cc5999-20 Inst : MS3B
Misc : MS14988,V3B6056,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : [redacted]M3B5999.M (RTE Integrator)
Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
Last Update : Fri Mar 03 11:48:36 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	88	-0.02	7.98
2		ethanol		----------NA----------				
3		tertiary butyl alcohol	1.105	1.237	-11.9	88	-0.02	8.12
4		1,4-dioxane	0.105	0.085	19.0	66	0.00	12.18
5	I	pentafluorobenzene	1.000	1.000	0.0	96	0.00	10.53
6		chlorodifluoromethane	1.101	1.148	-4.3	91	0.01	4.16
7		dichlorodifluoromethane	1.347	1.271	5.6	85	0.00	4.14
8		chloromethane	1.263	1.320	-4.5	101	0.00	4.50
9		vinyl chloride	1.427	1.506	-5.5	99	0.00	4.80
10		bromomethane	0.732	0.865	-18.2	111	-0.02	5.50
11		chloroethane	0.560	0.607	-8.4	99	0.00	5.72
12		trichlorofluoromethane	1.191	1.218	-2.3	95	0.00	6.28
13		vinyl bromide	1.116	0.769	31.1#	64	0.00	6.13
14		ethyl ether	0.257	0.274	-6.6	95	0.00	6.74
15		2-chloropropane	1.133	1.015	10.4	79	0.00	6.98
16		acrolein	0.086	0.098	-14.0	101	0.01	7.00
17		freon 113	0.618	0.682	-10.4	95	0.00	7.24
18		1,1-dichloroethene	0.541	0.525	3.0	84	0.00	7.21
19		acetone	0.038	0.047	-23.7#	102	0.00	7.21
20		acetonitrile	0.098	0.105	-7.1	97	0.00	7.70
21		iodomethane	1.136	1.217	-7.1	92	0.00	7.50
22		carbon disulfide	2.143	2.138	0.2	86	0.00	7.66
23		methylene chloride	0.616	0.668	-8.4	96	0.00	8.04
24		methyl acetate	0.355	0.365	-2.8	93	0.00	7.77
25		methyl tert butyl ether	1.713	1.728	-0.9	87	0.00	8.46
26		trans-1,2-dichloroethene	0.563	0.600	-6.6	95	0.00	8.49
27		hexane	0.377	0.357	5.3	83	0.00	8.90
28		di-isopropyl ether	2.147	2.243	-4.5	91	0.00	9.14
29		2-butanone	0.040	0.044	-10.0	93	0.00	9.85
30		1,1-dichloroethane	0.991	1.090	-10.0	94	0.00	9.14
31		chloroprene	0.785	0.794	-1.1	86	0.00	9.25
32		acrylonitrile	0.203	0.210	-3.4	93	0.00	8.37
33		vinyl acetate	0.076	0.073	3.9	80	0.00	9.08
34		ethyl tert-butyl ether	1.887	2.018	-6.9	92	0.00	9.65
35		ethyl acetate	0.062	0.064	-3.2	92	0.00	9.89
36		2,2-dichloropropane	1.064	1.156	-8.6	93	0.00	9.97
37		cis-1,2-dichloroethene	0.609	0.661	-8.5	95	0.00	9.93
38		propionitrile	0.065	0.075	-15.4	101	0.00	9.93
39		methyl acrylate	0.058	0.063	-8.6	98	0.00	9.97
40		methacrylonitrile	0.176	0.182	-3.4	93	0.00	10.16
41		bromochloromethane	0.281	0.320	-13.9	100	0.00	10.26

Continuing Calibration Summary

Job Number: [redacted] **Sample:** V3B6056-CC5999
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** 3B136493.D
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

42		tetrahydrofuran	0.143	0.154	-7.7	99	0.00	10.26
43		chloroform	0.931	0.998	-7.2	97	0.00	10.35
44		tert-Butyl Formate	0.604	0.543	10.1	78	0.00	10.38
45	S	dibromofluoromethane (s)	0.469	0.496	-5.8	102	0.00	10.56
46		1,1,1-trichloroethane	0.993	1.029	-3.6	89	0.00	10.62
47		cyclohexane	0.912	0.905	0.8	87	0.00	10.74
48		isobutyl alcohol		----------NA----------				
49		1,1-dichloropropene	0.667	0.688	-3.1	89	0.00	10.80
50		carbon tetrachloride	0.893	0.924	-3.5	88	0.00	10.83
51		tert-amyl alcohol	0.030	0.026	13.3	77	-0.01	10.94
52		isopropyl acetate	0.091	0.092	-1.1	95	0.00	10.98
53	I	1,4-difluorobenzene	1.000	1.000	0.0	97	0.00	11.51
54	S	1,2-dichloroethane-d4 (s)	0.330	0.328	0.6	97	0.00	11.00
55		n-butyl alcohol	0.010	0.009	10.0	84	0.00	11.56
56		2,2,4-Trimethylpentane	1.716	1.684	1.9	91	0.00	11.17
57		benzene	1.388	1.529	-10.2	94	0.00	11.06
58		tert-amyl methyl ether	1.213	1.293	-6.6	94	0.00	11.16
59		heptane	0.287	0.275	4.2	83	0.00	11.34
60		1,2-dichloroethane	0.419	0.458	-9.3	95	0.00	11.09
61		ethyl acrylate	0.335	0.329	1.8	87	0.00	11.82
62		trichloroethene	0.343	0.363	-5.8	93	0.00	11.83
63		2-chloroethyl vinyl ether	0.189	0.185	2.1	81	0.00	12.67
64		methyl methacrylate	0.077	0.074	3.9	89	0.00	12.10
65		methylcyclohexane	0.800	0.831	-3.9	90	0.00	12.15
66		1,2-dichloropropane	0.377	0.420	-11.4	97	0.00	12.13
67		dibromomethane	0.204	0.227	-11.3	101	0.00	12.25
68		bromodichloromethane	0.451	0.495	-9.8	97	0.00	12.42
69		2-nitropropane	0.077	0.068	11.7	80	0.00	12.62
70		epichlorohydrin	0.031	0.033	-6.5	99	0.00	12.76
71		cis-1,3-dichloropropene	0.545	0.592	-8.6	94	0.00	12.90
72		4-methyl-2-pentanone	0.122	0.135	-10.7	98	0.00	13.00
73		isoamyl alcohol	0.010	0.010	0.0	83	0.00	13.01
74	I	chlorobenzene-d5	1.000	1.000	0.0	100	0.00	14.85
75	S	toluene-d8 (s)	1.261	1.242	1.5	100	0.00	13.23
76		toluene	0.873	0.924	-5.8	95	0.00	13.31
77		ethyl methacrylate	0.409	0.399	2.4	88	0.00	13.49
78		trans-1,3-dichloropropene	0.484	0.511	-5.6	95	0.00	13.51
79		1,1,2-trichloroethane	0.249	0.269	-8.0	100	0.00	13.75
80		tetrachloroethene	0.324	0.339	-4.6	94	0.00	13.90
81		2-hexanone	0.107	0.117	-9.3	97	0.00	13.91
82		1,3-dichloropropane	0.471	0.524	-11.3	100	0.00	13.94
83		butyl acetate	0.205	0.210	-2.4	91	0.00	14.00
84		3,3-Dimethyl-1-Butanol	0.030	0.026	13.3	77	0.00	14.10
85		dibromochloromethane	0.363	0.404	-11.3	101	0.00	14.21
86		1,2-dibromoethane	0.312	0.329	-5.4	96	0.00	14.37
87		n-butyl ether	1.750	1.805	-3.1	93	0.00	14.84
88		chlorobenzene	1.010	1.089	-7.8	98	0.00	14.89
89		1,1,1,2-tetrachloroethane	0.475	0.508	-6.9	99	0.00	14.96
90		ethylbenzene	1.785	1.865	-4.5	93	0.00	14.95
91		m,p-xylene	0.695	0.733	-5.5	94	0.00	15.08
92		o-xylene	1.633	1.652	-1.2	91	0.00	15.51
93		styrene	1.155	1.226	-6.1	95	0.00	15.52
94		butyl acrylate	0.679	0.670	1.3	93	0.00	15.32
95		isopropylbenzene	2.222	2.165	2.6	89	0.00	15.88
96		bromoform	0.257	0.305	-18.7	109	0.00	15.78
97		cis-1,4-dichloro-2-butene	0.121	0.128	-5.8	98	0.00	15.93
98		cyclohexanone		----------NA----------				

Continuing Calibration Summary

Job Number: [redacted] **Sample:** V3B6056-CC5999
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** 3B136493.D
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

99	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	98	0.00	17.35
100	S	4-bromofluorobenzene (s)	0.733	0.701	4.4	94	0.00	16.10
101		1,1,2,2-tetrachloroethane	0.694	0.778	-12.1	100	0.00	16.19
102		trans-1,4-dichloro-2-bute	0.164	0.173	-5.5	95	0.00	16.22
103		1,2,3-trichloropropane	0.168	0.180	-7.1	95	0.00	16.28
104		bromobenzene	0.736	0.833	-13.2	101	0.00	16.31
105		n-propylbenzene	3.588	3.805	-6.0	94	0.00	16.33
106		2-chlorotoluene	0.748	0.811	-8.4	96	0.00	16.48
107		4-chlorotoluene	2.024	2.111	-4.3	92	0.00	16.60
108		1,3,5-trimethylbenzene	2.875	2.995	-4.2	91	0.00	16.50
109		tert-butylbenzene	2.480	2.361	4.8	87	0.00	16.86
110		1,2,4-trimethylbenzene	2.948	3.081	-4.5	93	0.00	16.92
111		sec-butylbenzene	4.052	4.030	0.5	89	0.00	17.09
112		p-isopropyltoluene	3.513	3.645	-3.8	91	0.00	17.23
113		1,3-dichlorobenzene	1.609	1.840	-14.4	100	0.00	17.28
114		1,4-dichlorobenzene	1.615	1.829	-13.3	101	0.00	17.38
115		1,2-dichlorobenzene	1.712	1.943	-13.5	101	0.00	17.76
116		Benzyl Chloride	1.395	1.693	-21.4#	108	0.00	17.47
117		n-butylbenzene	1.790	1.933	-8.0	93	0.00	17.65
118		hexachloroethane	0.645	0.687	-6.5	98	0.00	18.07
119		1,2-dibromo-3-chloropropa	0.219	0.233	-6.4	98	0.00	18.54
120		1,3,5-trichlorobenzene	1.996	2.411	-20.8#	106	0.00	18.72
121		2-ethylhexyl acrylate	1.386	0.876	36.8#	65	0.00	19.32
122		1,2,4-trichlorobenzene	1.899	2.151	-13.3	97	0.00	19.34
123		hexachlorobutadiene	1.010	1.084	-7.3	97	0.00	19.45
124		naphthalene	3.722	3.933	-5.7	93	0.00	19.63
125		1,2,3-trichlorobenzene	1.673	1.947	-16.4	99	0.00	19.85
126		2-methylnaphthalene	1.896	1.812	4.4	90	0.00	20.80

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3b135075.D M3B5999.M Mon Apr 24 15:53:06 2017 11

Continuing Calibration Summary

Job Number: [redacted] **Sample:** V3B6056-ECC5999
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** 3B136516.D
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

Evaluate Continuing Calibration Report

Data File : [redacted]3B\v3b6055-56\3b136516.D Vial: 24
Acq On : 22 Apr 2017 9:32 pm Operator: [redacted]
Sample : ecc5999-20 Inst : MS3B
Misc : MS14988,V3B6056,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : [redacted]M3B5999.M (RTE Integrator)
Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
Last Update : Fri Mar 03 11:48:36 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 50% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	Tert Butyl Alcohol-d9	1.000	1.000	0.0	86	0.00	7.99
2		ethanol		----------NA----------				
3		tertiary butyl alcohol	1.105	1.206	-9.1	84	-0.03	8.11
4		1,4-dioxane	0.105	0.113	-7.6	86	0.00	12.18
5	I	pentafluorobenzene	1.000	1.000	0.0	93	0.00	10.52
6		chlorodifluoromethane	1.101	1.095	0.5	84	0.00	4.15
7		dichlorodifluoromethane	1.347	1.046	22.3	68	-0.01	4.13
8		chloromethane	1.263	1.138	9.9	85	-0.01	4.49
9		vinyl chloride	1.427	1.379	3.4	88	-0.02	4.79
10		bromomethane	0.732	0.777	-6.1	97	-0.02	5.50
11		chloroethane	0.560	0.605	-8.0	95	0.00	5.72
12		trichlorofluoromethane	1.191	1.156	2.9	87	-0.01	6.27
13		vinyl bromide	1.116	0.714	36.0	58	-0.01	6.12
14		ethyl ether	0.257	0.255	0.8	85	0.00	6.73
15		2-chloropropane	1.133	0.981	13.4	74	-0.01	6.97
16		acrolein	0.086	0.078	9.3	78	0.00	6.99
17		freon 113	0.618	0.633	-2.4	86	-0.01	7.24
18		1,1-dichloroethene	0.541	0.502	7.2	78	0.00	7.21
19		acetone	0.038	0.041	-7.9	86	0.00	7.21
20		acetonitrile	0.098	0.101	-3.1	91	0.00	7.69
21		iodomethane	1.136	1.179	-3.8	86	0.00	7.49
22		carbon disulfide	2.143	2.074	3.2	81	0.00	7.65
23		methylene chloride	0.616	0.641	-4.1	90	0.00	8.04
24		methyl acetate	0.355	0.370	-4.2	92	0.00	7.76
25		methyl tert butyl ether	1.713	1.669	2.6	81	0.00	8.46
26		trans-1,2-dichloroethene	0.563	0.577	-2.5	89	0.00	8.49
27		hexane	0.377	0.340	9.8	77	0.00	8.90
28		di-isopropyl ether	2.147	2.200	-2.5	86	0.00	9.13
29		2-butanone	0.040	0.042	-5.0	86	0.00	9.85
30		1,1-dichloroethane	0.991	1.047	-5.7	88	0.00	9.14
31		chloroprene	0.785	0.760	3.2	80	0.00	9.25
32		acrylonitrile	0.203	0.215	-5.9	92	0.00	8.37
33		vinyl acetate	0.076	0.074	2.6	78	0.00	9.08
34		ethyl tert-butyl ether	1.887	1.947	-3.2	86	0.00	9.65
35		ethyl acetate	0.062	0.060	3.2	84	0.00	9.89
36		2,2-dichloropropane	1.064	1.041	2.2	81	0.00	9.96
37		cis-1,2-dichloroethene	0.609	0.621	-2.0	87	0.00	9.93
38		propionitrile	0.065	0.074	-13.8	96	0.00	9.93
39		methyl acrylate	0.058	0.065	-12.1	98	-0.01	9.96
40		methacrylonitrile	0.176	0.176	0.0	88	0.00	10.15
41		bromochloromethane	0.281	0.316	-12.5	96	0.00	10.25

Continuing Calibration Summary

Job Number: [redacted] **Sample:** V3B6056-ECC5999
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** 3B136516.D
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

42		tetrahydrofuran	0.143	0.144	-0.7	90	0.00	10.26
43		chloroform	0.931	0.962	-3.3	91	0.00	10.35
44		tert-Butyl Formate	0.604	0.525	13.1	73	0.00	10.38
45	S	dibromofluoromethane (s)	0.469	0.496	-5.8	99	0.00	10.56
46		1,1,1-trichloroethane	0.993	1.009	-1.6	84	0.00	10.62
47		cyclohexane	0.912	0.840	7.9	79	0.00	10.74
48		isobutyl alcohol		----------NA----------				
49		1,1-dichloropropene	0.667	0.670	-0.4	84	0.00	10.80
50		carbon tetrachloride	0.893	0.897	-0.4	83	0.00	10.83
51		tert-amyl alcohol	0.030	0.029	3.3	82	0.00	10.95
52		isopropyl acetate	0.091	0.082	9.9	81	0.00	10.98
53	I	1,4-difluorobenzene	1.000	1.000	0.0	93	0.00	11.51
54	S	1,2-dichloroethane-d4 (s)	0.330	0.337	-2.1	96	0.00	11.00
55		n-butyl alcohol	0.010	0.010	0.0	88	0.00	11.56
56		2,2,4-Trimethylpentane	1.716	1.638	4.5	85	0.00	11.17
57		benzene	1.388	1.513	-9.0	89	0.00	11.06
58		tert-amyl methyl ether	1.213	1.294	-6.7	90	0.00	11.15
59		heptane	0.287	0.262	8.7	76	0.00	11.34
60		1,2-dichloroethane	0.419	0.445	-6.2	89	0.00	11.09
61		ethyl acrylate	0.335	0.330	1.5	83	0.00	11.82
62		trichloroethene	0.343	0.361	-5.2	89	0.00	11.83
63		2-chloroethyl vinyl ether	0.189	0.185	2.1	78	0.00	12.66
64		methyl methacrylate	0.077	0.070	9.1	81	0.00	12.09
65		methylcyclohexane	0.800	0.784	2.0	81	0.00	12.15
66		1,2-dichloropropane	0.377	0.418	-10.9	93	0.00	12.13
67		dibromomethane	0.204	0.224	-9.8	95	0.00	12.25
68		bromodichloromethane	0.451	0.487	-8.0	91	0.00	12.42
69		2-nitropropane	0.077	0.079	-2.6	90	0.00	12.62
70		epichlorohydrin	0.031	0.031	0.0	88	0.00	12.75
71		cis-1,3-dichloropropene	0.545	0.588	-7.9	89	0.00	12.90
72		4-methyl-2-pentanone	0.122	0.133	-9.0	92	0.00	13.00
73		isoamyl alcohol	0.010	0.011	-10.0	89	0.00	13.01
74	I	chlorobenzene-d5	1.000	1.000	0.0	97	0.00	14.85
75	S	toluene-d8 (s)	1.261	1.228	2.6	96	0.00	13.22
76		toluene	0.873	0.870	0.3	87	0.00	13.31
77		ethyl methacrylate	0.409	0.385	5.9	82	0.00	13.49
78		trans-1,3-dichloropropene	0.484	0.491	-1.4	89	0.00	13.51
79		1,1,2-trichloroethane	0.249	0.262	-5.2	94	0.00	13.75
80		tetrachloroethene	0.324	0.314	3.1	84	0.00	13.90
81		2-hexanone	0.107	0.109	-1.9	88	0.00	13.91
82		1,3-dichloropropane	0.471	0.510	-8.3	94	0.00	13.94
83		butyl acetate	0.205	0.203	1.0	85	0.00	14.00
84		3,3-Dimethyl-1-Butanol	0.030	0.030	0.0	87	0.00	14.10
85		dibromochloromethane	0.363	0.389	-7.2	94	0.00	14.20
86		1,2-dibromoethane	0.312	0.330	-5.8	93	0.00	14.37
87		n-butyl ether	1.750	1.741	0.5	87	0.00	14.83
88		chlorobenzene	1.010	1.054	-4.4	92	0.00	14.89
89		1,1,1,2-tetrachloroethane	0.475	0.495	-4.2	93	0.00	14.96
90		ethylbenzene	1.785	1.794	-0.5	87	0.00	14.95
91		m,p-xylene	0.695	0.697	-0.3	87	0.00	15.08
92		o-xylene	1.633	1.597	2.2	86	0.00	15.51
93		styrene	1.155	1.178	-2.0	89	0.00	15.52
94		butyl acrylate	0.679	0.658	3.1	89	0.00	15.32
95		isopropylbenzene	2.222	2.068	6.9	82	0.00	15.88
96		bromoform	0.257	0.292	-13.6	100	0.00	15.78
97		cis-1,4-dichloro-2-butene	0.121	0.119	1.7	89	0.00	15.92
98		cyclohexanone		----------NA----------				

Continuing Calibration Summary

Job Number: [redacted] **Sample:** V3B6056-ECC5999
Account: USACEPAP USACE-Philadelphia District **Lab FileID:** 3B136516.D
Project: Defense Supply Center PA (DSCP), 20th & Pattison Avenue, Philadelphia, PA

99	I	1,4-dichlorobenzene-d4	1.000	1.000	0.0	96	0.00	17.35
100	S	4-bromofluorobenzene (s)	0.733	0.711	3.0	92	0.00	16.10
101		1,1,2,2-tetrachloroethane	0.694	0.769	-10.8	96	0.00	16.19
102		trans-1,4-dichloro-2-bute	0.164	0.161	1.8	86	0.00	16.22
103		1,2,3-trichloropropane	0.168	0.180	-7.1	93	0.00	16.28
104		bromobenzene	0.736	0.785	-6.7	93	0.00	16.30
105		n-propylbenzene	3.588	3.643	-1.5	87	0.00	16.33
106		2-chlorotoluene	0.748	0.776	-3.7	89	0.00	16.48
107		4-chlorotoluene	2.024	2.056	-1.6	87	0.00	16.60
108		1,3,5-trimethylbenzene	2.875	2.833	1.5	84	0.00	16.50
109		tert-butylbenzene	2.480	2.292	7.6	82	0.00	16.86
110		1,2,4-trimethylbenzene	2.948	2.955	-0.2	86	0.00	16.91
111		sec-butylbenzene	4.052	3.931	3.0	85	0.00	17.09
112		p-isopropyltoluene	3.513	3.457	1.6	84	0.00	17.22
113		1,3-dichlorobenzene	1.609	1.739	-8.1	92	0.00	17.28
114		1,4-dichlorobenzene	1.615	1.750	-8.4	94	0.00	17.38
115		1,2-dichlorobenzene	1.712	1.860	-8.6	94	0.00	17.76
116		Benzyl Chloride	1.395	1.377	1.3	86	0.00	17.46
117		n-butylbenzene	1.790	1.828	-2.1	86	0.00	17.65
118		hexachloroethane	0.645	0.663	-2.8	92	0.00	18.07
119		1,2-dibromo-3-chloropropa	0.219	0.227	-3.7	93	0.00	18.54
120		1,3,5-trichlorobenzene	1.996	2.301	-15.3	98	0.00	18.72
121		2-ethylhexyl acrylate	1.386	0.697	49.7	50	0.00	19.32
122		1,2,4-trichlorobenzene	1.899	2.073	-9.2	91	0.00	19.34
123		hexachlorobutadiene	1.010	1.047	-3.7	91	0.00	19.45
124		naphthalene	3.722	3.795	-2.0	87	0.00	19.63
125		1,2,3-trichlorobenzene	1.673	1.863	-11.4	92	0.00	19.85
126		2-methylnaphthalene	1.896	1.592	16.0	77	0.00	20.80

(#) = Out of Range SPCC's out = 0 CCC's out = 0
3b135075.D M3B5999.M Mon Apr 24 15:57:57 2017 11

GC/MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136499.D
Acq On : 22 Apr 2017 1:31 pm
Operator : [redacted]
Sample : [redacted]1
Misc : MS15126,V3B6056,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 24 15:54:49 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

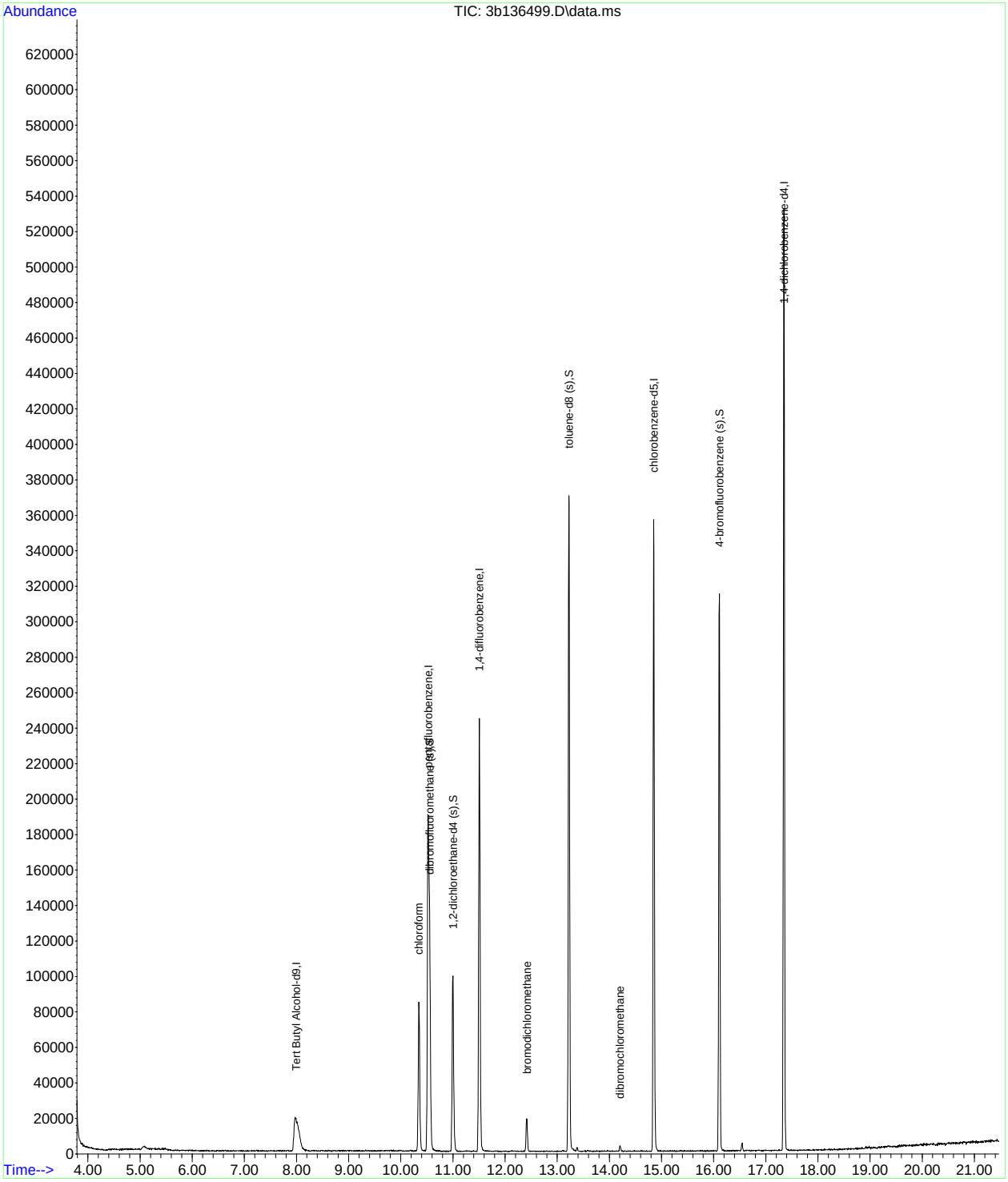
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.992	65	70250	500.00	ug/L	0.00
5) pentafluorobenzene	10.524	168	149964	50.00	ug/L	0.00
53) 1,4-difluorobenzene	11.507	114	208557	50.00	ug/L	0.00
74) chlorobenzene-d5	14.849	117	205186	50.00	ug/L	0.00
99) 1,4-dichlorobenzene-d4	17.349	152	145949	50.00	ug/L	0.00
System Monitoring Compounds						
45) dibromofluoromethane (s)	10.555	113	73312	52.14	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 104.28%			
54) 1,2-dichloroethane-d4 (s)	11.000	65	70311	51.11	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 102.22%			
75) toluene-d8 (s)	13.223	98	255251	49.31	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 98.62%			
100) 4-bromofluorobenzene (s)	16.110	95	100829	47.12	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 94.24%			
Target Compounds						Qvalue
43) chloroform	10.346	83	71089	25.46	ug/L	98
68) bromodichloromethane	12.422	83	13551	7.20	ug/L	93
85) dibromochloromethane	14.201	129	2143	1.44	ug/L	90

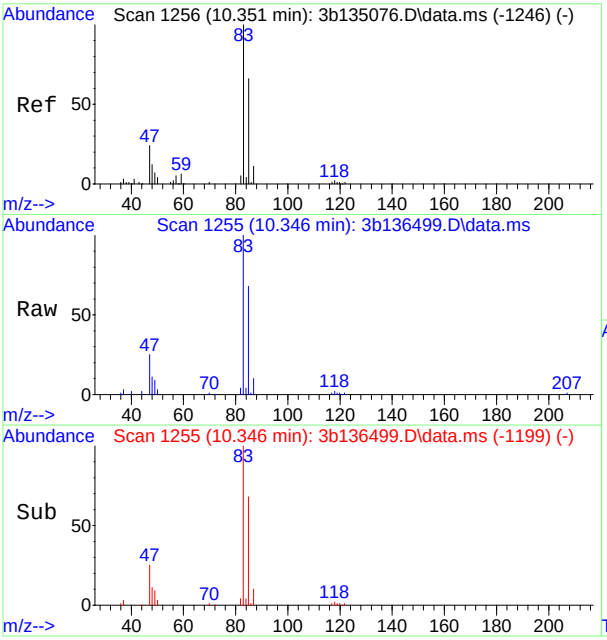
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136499.D
Acq On : 22 Apr 2017 1:31 pm
Operator : [redacted]
Sample : [redacted]1
Misc : MS15126,V3B6056,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 24 15:54:49 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

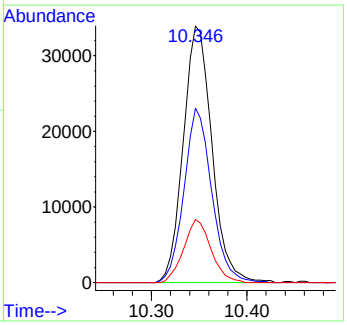


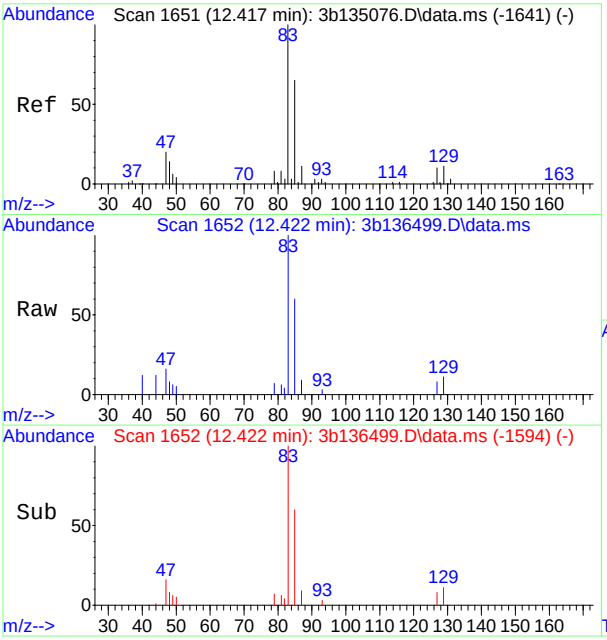


#43
chloroform
Concen: 25.46 ug/L
RT: 10.346 min Scan# 1255
Delta R.T. -0.005 min
Lab File: 3b136499.D
Acq: 22 Apr 2017 1:31 pm

Tgt Ion: 83 Resp: 71089

Ion	Ratio	Lower	Upper
83	100		
85	67.9	35.6	95.6
47	24.7	0.0	54.2

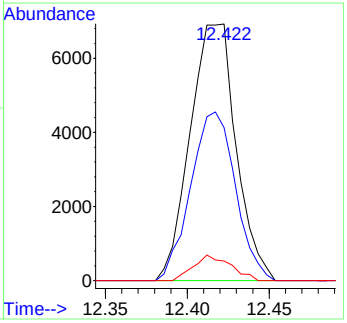


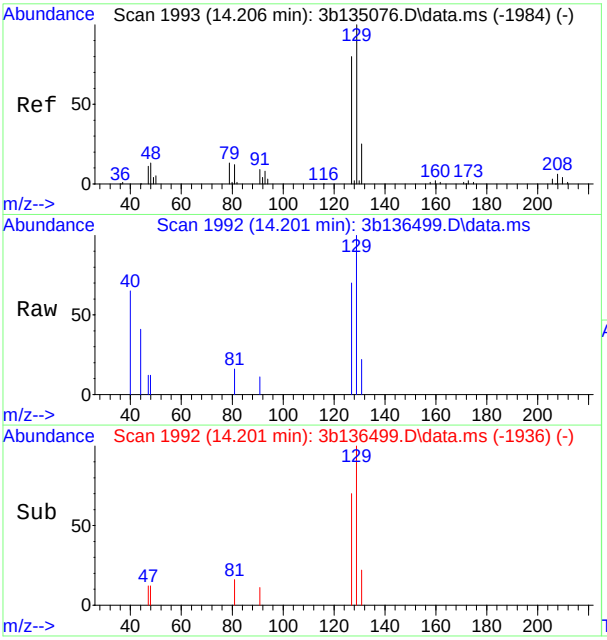


#68
bromodichloromethane
Concen: 7.20 ug/L
RT: 12.422 min Scan# 1652
Delta R.T. 0.005 min
Lab File: 3b136499.D
Acq: 22 Apr 2017 1:31 pm

Tgt Ion: 83 Resp: 13551

Ion	Ratio	Lower	Upper
83	100		
85	59.6	35.4	95.4
127	7.7	0.0	39.9

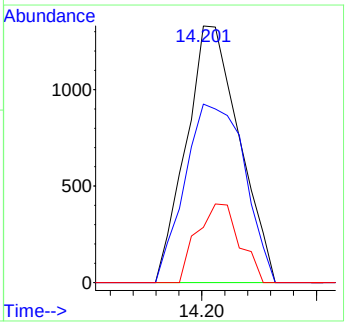




#85
dibromochloromethane
Concen: 1.44 ug/L
RT: 14.201 min Scan# 1992
Delta R.T. -0.005 min
Lab File: 3b136499.D
Acq: 22 Apr 2017 1:31 pm

Tgt Ion:129 Resp: 2143

Ion	Ratio	Lower	Upper
129	100		
127	69.5	49.8	109.8
131	21.6	0.0	54.9



7.1.1

7

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136500.D
Acq On : 22 Apr 2017 1:59 pm
Operator : [redacted]
Sample : [redacted]2
Misc : MS15126,V3B6056,5,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 24 15:55:26 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

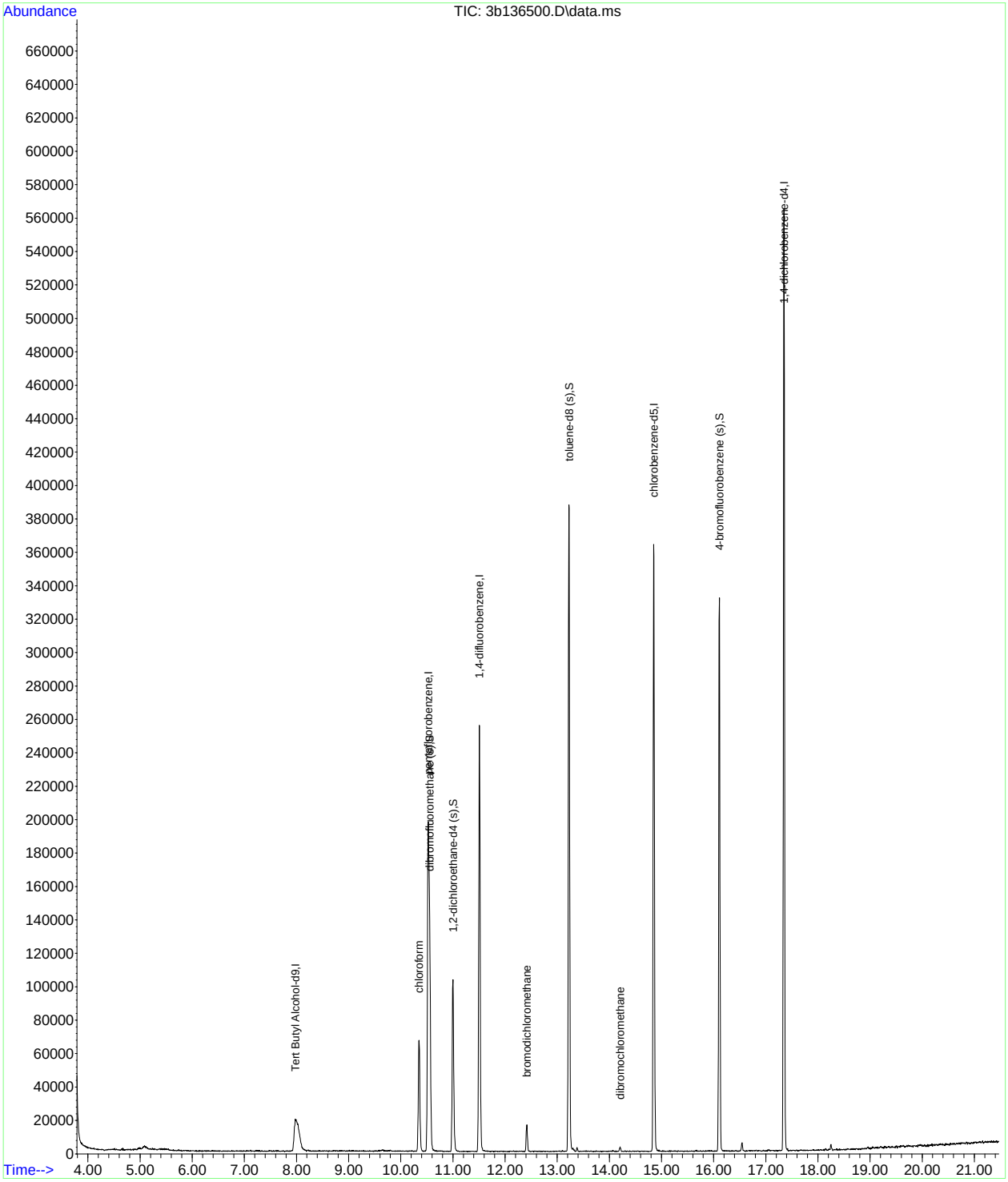
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.977	65	73757	500.00	ug/L	-0.02
5) pentafluorobenzene	10.524	168	156225	50.00	ug/L	0.00
53) 1,4-difluorobenzene	11.507	114	215990	50.00	ug/L	0.00
74) chlorobenzene-d5	14.849	117	216811	50.00	ug/L	0.00
99) 1,4-dichlorobenzene-d4	17.349	152	155156	50.00	ug/L	0.00
System Monitoring Compounds						
45) dibromofluoromethane (s)	10.555	113	78529	53.61	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 107.22%			
54) 1,2-dichloroethane-d4 (s)	11.000	65	73910	51.87	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 103.74%			
75) toluene-d8 (s)	13.228	98	267979	48.99	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 97.98%			
100) 4-bromofluorobenzene (s)	16.110	95	105127	46.21	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 92.42%			
Target Compounds						Qvalue
43) chloroform	10.351	83	58934	20.26	ug/L	96
68) bromodichloromethane	12.417	83	10981	5.63	ug/L	94
85) dibromochloromethane	14.206	129	1725	1.10	ug/L	87

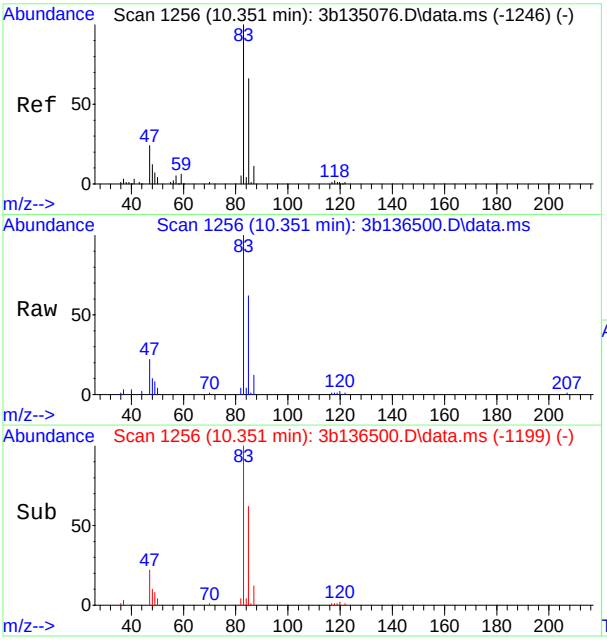
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136500.D
Acq On : 22 Apr 2017 1:59 pm
Operator : [redacted]
Sample : [redacted]2
Misc : MS15126,V3B6056,5,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 24 15:55:26 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

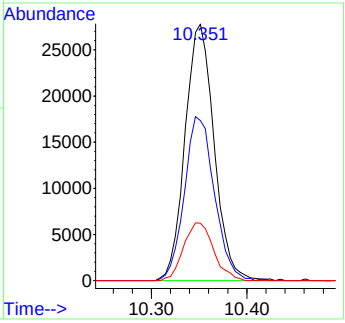


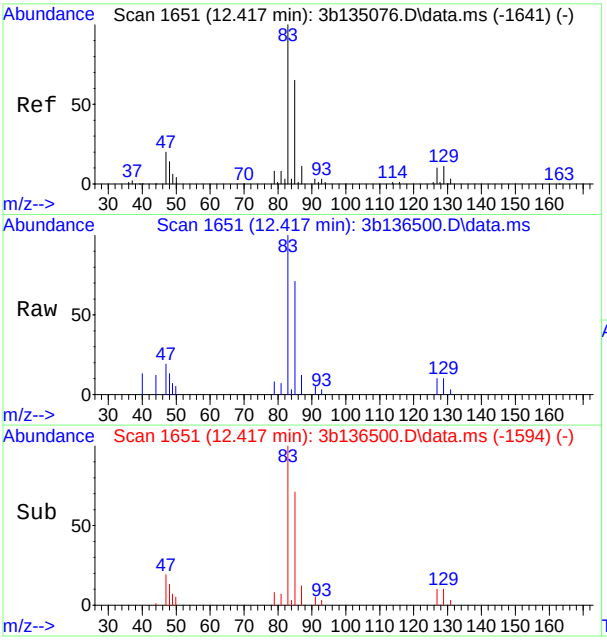


#43
chloroform
Concen: 20.26 ug/L
RT: 10.351 min Scan# 1256
Delta R.T. 0.000 min
Lab File: 3b136500.D
Acq: 22 Apr 2017 1:59 pm

Tgt Ion: 83 Resp: 58934

Ion	Ratio	Lower	Upper
83	100		
85	62.4	35.6	95.6
47	22.4	0.0	54.2

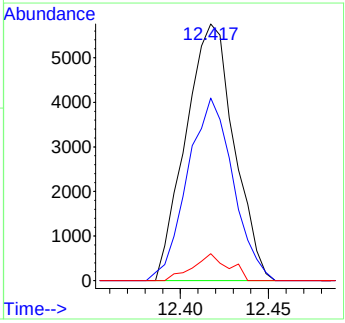


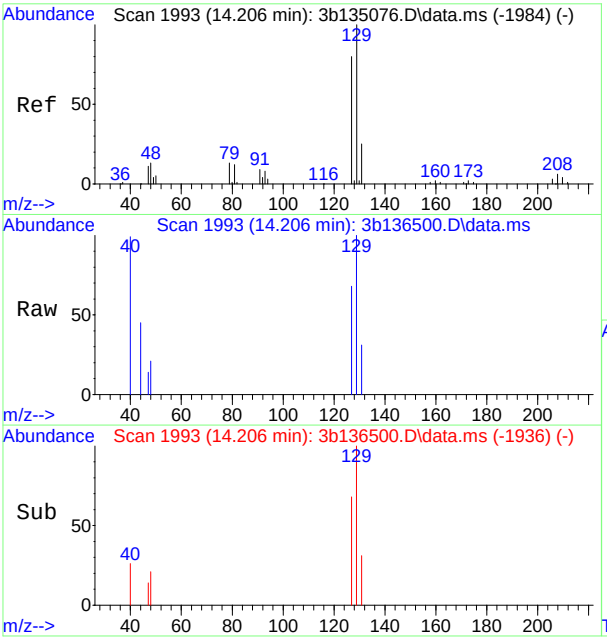


#68
bromodichloromethane
Concen: 5.63 ug/L
RT: 12.417 min Scan# 1651
Delta R.T. 0.000 min
Lab File: 3b136500.D
Acq: 22 Apr 2017 1:59 pm

Tgt Ion: 83 Resp: 10981

Ion	Ratio	Lower	Upper
83	100		
85	71.1	35.4	95.4
127	10.5	0.0	39.9

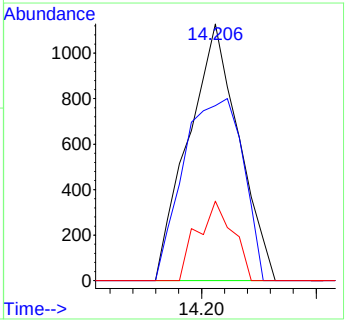




#85
dibromochloromethane
Concen: 1.10 ug/L
RT: 14.206 min Scan# 1993
Delta R.T. 0.000 min
Lab File: 3b136500.D
Acq: 22 Apr 2017 1:59 pm

Tgt Ion:129 Resp: 1725

Ion	Ratio	Lower	Upper
129	100		
127	68.2	49.8	109.8
131	30.9	0.0	54.9



7.1.2

7

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136494.D
Acq On : 22 Apr 2017 10:48 am
Operator : [redacted]
Sample : mb
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 24 15:53:48 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.982	65	86599	500.00	ug/L	-0.02
5) pentafluorobenzene	10.524	168	155023	50.00	ug/L	0.00
53) 1,4-difluorobenzene	11.507	114	214882	50.00	ug/L	0.00
74) chlorobenzene-d5	14.854	117	214012	50.00	ug/L	0.00
99) 1,4-dichlorobenzene-d4	17.349	152	149800	50.00	ug/L	0.00
System Monitoring Compounds						
45) dibromofluoromethane (s)	10.555	113	77525	53.34	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 106.68%			
54) 1,2-dichloroethane-d4 (s)	11.000	65	72436	51.10	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 102.20%			
75) toluene-d8 (s)	13.223	98	267415	49.53	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 99.06%			
100) 4-bromofluorobenzene (s)	16.110	95	104077	47.39	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 94.78%			

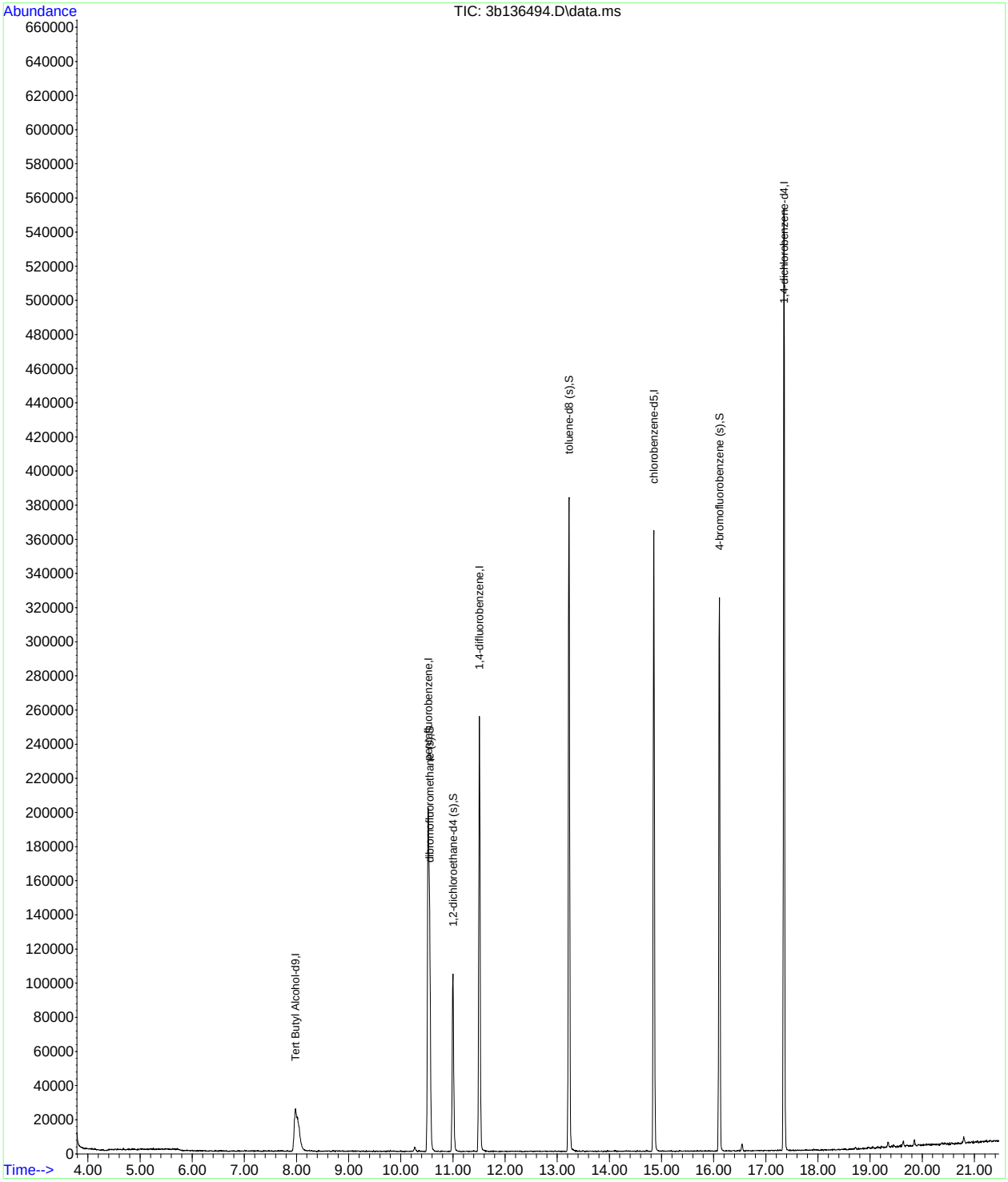
Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136494.D
Acq On : 22 Apr 2017 10:48 am
Operator : [redacted]
Sample : mb
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 24 15:53:48 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136495.D
Acq On : 22 Apr 2017 11:28 am
Operator : [redacted]
Sample : bs
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 22 11:51:49 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.977	65	77994	500.00	ug/L	-0.02
5) pentafluorobenzene	10.524	168	150501	50.00	ug/L	0.00
53) 1,4-difluorobenzene	11.507	114	218727	50.00	ug/L	0.00
74) chlorobenzene-d5	14.854	117	215973	50.00	ug/L	0.00
99) 1,4-dichlorobenzene-d4	17.349	152	146727	50.00	ug/L	0.00
System Monitoring Compounds						
45) dibromofluoromethane (s)	10.550	113	74568	52.84	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 105.68%			
54) 1,2-dichloroethane-d4 (s)	11.000	65	70250	48.69	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 97.38%			
75) toluene-d8 (s)	13.228	98	269468	49.45	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 98.90%			
100) 4-bromofluorobenzene (s)	16.110	95	102848	47.81	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 95.62%			
Target Compounds						Qvalue
3) tertiary butyl alcohol	8.118	59	44110	255.80	ug/L	98
4) 1,4-dioxane	12.182	88	20538	1254.82	ug/L	94
6) chlorodifluoromethane	4.148	51	168118	50.72	ug/L	97
7) dichlorodifluoromethane	4.132	85	177201	43.72	ug/L	97
8) chloromethane	4.493	50	186185	48.97	ug/L	96
9) vinyl chloride	4.797	62	214680	49.97	ug/L	99
10) bromomethane	5.503	94	123981	56.26	ug/L	99
11) chloroethane	5.712	64	87020	51.65	ug/L	97
12) trichlorofluoromethane	6.272	101	170614	47.60	ug/L	99
13) vinyl bromide	6.120	106	105588	31.43	ug/L	98
14) ethyl ether	6.727	74	38337	49.63	ug/L	97
15) 2-chloropropane	6.972	43	140422	41.18	ug/L	98
16) acrolein	6.993	56	14713	56.51	ug/L	97
17) freon 113	7.234	151	93199	50.09	ug/L	94
18) 1,1-dichloroethene	7.203	96	70971	43.55	ug/L	96
19) acetone	7.213	58	30815	266.92	ug/L	99
20) acetonitrile	7.694	41	143170	484.45	ug/L	97
21) iodomethane	7.490	142	164056	47.96	ug/L	100
22) carbon disulfide	7.647	76	287687	44.59	ug/L	99
23) methylene chloride	8.039	84	90536	48.82	ug/L	99
24) methyl acetate	7.757	43	51627	48.29	ug/L	95
25) methyl tert butyl ether	8.447	73	252636	48.99	ug/L	96
26) trans-1,2-dichloroethene	8.489	96	82034	48.39	ug/L	99
27) hexane	8.892	56	52278	46.04	ug/L	97
28) di-isopropyl ether	9.138	45	330070	51.08	ug/L	95
29) 2-butanone	9.849	72	32162	266.21	ug/L	96
30) 1,1-dichloroethane	9.138	63	151698	50.83	ug/L	99
31) chloroprene	9.248	53	112459	47.61	ug/L	97
32) acrylonitrile	8.369	53	31017	50.82	ug/L	90
33) vinyl acetate	9.075	86	10820	47.08	ug/L #	78
34) ethyl tert-butyl ether	9.640	59	290402	51.12	ug/L	98
35) ethyl acetate	9.875	45	9677	51.64	ug/L #	51
36) 2,2-dichloropropane	9.964	77	168297	52.54	ug/L	97
37) cis-1,2-dichloroethene	9.928	96	90204	49.19	ug/L	97
38) propionitrile	9.933	54	102862	524.24	ug/L	98
39) methyl acrylate	9.964	85	8982	51.44	ug/L #	91
40) methacrylonitrile	10.147	67	25848	48.85	ug/L	97
41) bromochloromethane	10.252	128	44461	52.58	ug/L	91
42) tetrahydrofuran	10.262	42	21051	49.07	ug/L	96
43) chloroform	10.351	83	135933	48.52	ug/L	98
44) tert-Butyl Formate	10.383	59	79415	43.69	ug/L	97
46) 1,1,1-trichloroethane	10.618	97	147815	49.47	ug/L	97
47) cyclohexane	10.743	84	130578	47.58	ug/L	91
49) 1,1-dichloropropene	10.801	75	99769	49.71	ug/L	97
50) carbon tetrachloride	10.827	117	131354	48.86	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136495.D
Acq On : 22 Apr 2017 11:28 am
Operator : [redacted]
Sample : bs
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 22 11:51:49 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) tert-amyl alcohol	10.947	73	19448	213.57	ug/L #	84
52) isopropyl acetate	10.974	87	13253	48.39	ug/L	95
55) n-butyl alcohol	11.559	56	94433	2209.67	ug/L	95
56) 2,2,4-Trimethylpentane	11.167	57	365518	48.69	ug/L	99
57) benzene	11.062	78	304040	50.09	ug/L	99
58) tert-amyl methyl ether	11.157	73	270602	51.00	ug/L	98
59) heptane	11.340	57	57345	45.64	ug/L	96
60) 1,2-dichloroethane	11.094	62	88855	48.53	ug/L	99
61) ethyl acrylate	11.821	55	71046	48.45	ug/L	99
62) trichloroethene	11.831	95	72165	48.09	ug/L	98
63) 2-chloroethyl vinyl ether	12.668	63	193014	233.46	ug/L	98
64) methyl methacrylate	12.098	100	15479	45.97	ug/L	98
65) methylcyclohexane	12.145	83	173467	49.56	ug/L	99
66) 1,2-dichloropropane	12.135	63	84320	51.08	ug/L	99
67) dibromomethane	12.250	93	45413	50.83	ug/L	96
68) bromodichloromethane	12.417	83	99577	50.44	ug/L	97
69) 2-nitropropane	12.621	41	16092	47.86	ug/L	98
70) epichlorohydrin	12.757	57	32702	238.57	ug/L	98
71) cis-1,3-dichloropropene	12.898	75	121133	50.77	ug/L	97
72) 4-methyl-2-pentanone	13.003	58	144579	271.68	ug/L	94
73) isoamyl alcohol	13.008	70	41258	971.83	ug/L	90
76) toluene	13.306	92	188283	49.96	ug/L	100
77) ethyl methacrylate	13.495	69	87515	49.56	ug/L	98
78) trans-1,3-dichloropropene	13.505	75	108299	51.80	ug/L	95
79) 1,1,2-trichloroethane	13.746	83	55097	51.21	ug/L	98
80) tetrachloroethene	13.897	164	68418	48.85	ug/L	97
81) 2-hexanone	13.913	58	120647	259.84	ug/L	100
82) 1,3-dichloropropane	13.939	76	106306	52.21	ug/L	93
83) butyl acetate	13.997	56	45464	51.30	ug/L	96
84) 3,3-Dimethyl-1-Butanol	14.106	69	59008	455.74	ug/L	96
85) dibromochloromethane	14.206	129	83376	53.14	ug/L	96
86) 1,2-dibromoethane	14.373	107	67845	50.40	ug/L	98
87) n-butyl ether	14.839	57	379778	50.23	ug/L	99
88) chlorobenzene	14.886	112	218238	50.03	ug/L	99
89) 1,1,1,2-tetrachloroethane	14.959	131	105258	51.26	ug/L	100
90) ethylbenzene	14.949	91	384206	49.84	ug/L	99
91) m,p-xylene	15.079	106	301088	100.35	ug/L	95
92) o-xylene	15.513	91	346577	49.13	ug/L	98
93) styrene	15.524	104	254592	51.05	ug/L	98
94) butyl acrylate	15.320	55	146123	49.80	ug/L	99
95) isopropylbenzene	15.885	105	467832	48.75	ug/L	99
96) bromoform	15.780	173	62236	56.10	ug/L	94
97) cis-1,4-dichloro-2-butene	15.927	88	26823	51.33	ug/L	97
101) 1,1,2,2-tetrachloroethane	16.188	83	107466	52.77	ug/L	98
102) trans-1,4-dichloro-2-b...	16.219	53	24838	51.46	ug/L	90
103) 1,2,3-trichloropropane	16.282	110	25753	52.28	ug/L	99
104) bromobenzene	16.308	156	112535	52.10	ug/L	98
105) n-propylbenzene	16.335	91	535861	50.89	ug/L	100
106) 2-chlorotoluene	16.481	126	113797	51.82	ug/L	94
107) 4-chlorotoluene	16.596	91	291142	49.02	ug/L	98
108) 1,3,5-trimethylbenzene	16.497	105	424653	50.33	ug/L	98
109) tert-butylbenzene	16.863	119	353990	48.64	ug/L	96
110) 1,2,4-trimethylbenzene	16.915	105	434916	50.27	ug/L	100
111) sec-butylbenzene	17.093	105	593055	49.88	ug/L	99
112) p-isopropyltoluene	17.224	119	526882	51.10	ug/L	98
113) 1,3-dichlorobenzene	17.276	146	247202	52.34	ug/L	99
114) 1,4-dichlorobenzene	17.375	146	244200	51.53	ug/L	98
115) 1,2-dichlorobenzene	17.762	146	263870	52.52	ug/L	98
116) Benzyl Chloride	17.470	91	232916	56.89	ug/L	98
117) n-butylbenzene	17.653	92	275212	52.40	ug/L	98
118) hexachloroethane	18.071	201	101658	53.69	ug/L	98
119) 1,2-dibromo-3-chloropr...	18.536	157	33627	52.21	ug/L	96
120) 1,3,5-trichlorobenzene	18.720	180	344075	58.75	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136495.D
Acq On : 22 Apr 2017 11:28 am
Operator : [redacted]
Sample : bs
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 22 11:51:49 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

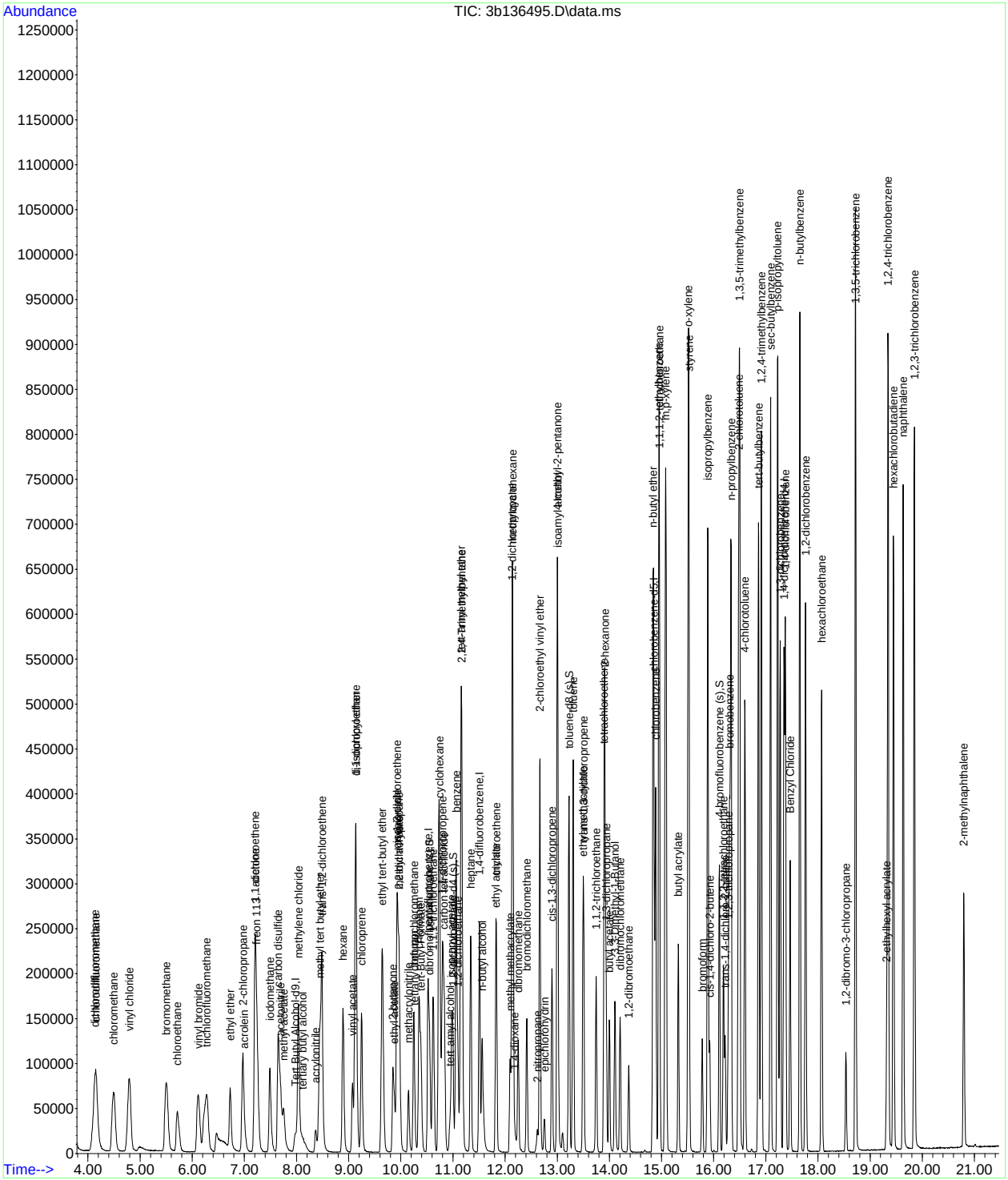
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) 2-ethylhexyl acrylate	19.316	70	33440	8.22	ug/L	99
122) 1,2,4-trichlorobenzene	19.342	180	311252	55.86	ug/L	99
123) hexachlorobutadiene	19.447	225	155338	52.43	ug/L	99
124) naphthalene	19.635	128	590591	54.07	ug/L	99
125) 1,2,3-trichlorobenzene	19.849	180	280338	57.10	ug/L	97
126) 2-methylnaphthalene	20.796	142	149074	26.79	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136495.D
Acq On : 22 Apr 2017 11:28 am
Operator : [redacted]
Sample : bs
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 22 11:51:49 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136505.D
Acq On : 22 Apr 2017 4:21 pm
Operator : [redacted]
Sample : jc41326-13ms
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 24 08:09:46 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.987	65	69690	500.00	ug/L		-0.01
5) pentafluorobenzene	10.524	168	151818	50.00	ug/L		0.00
53) 1,4-difluorobenzene	11.507	114	212248	50.00	ug/L		0.00
74) chlorobenzene-d5	14.849	117	216848	50.00	ug/L		0.00
99) 1,4-dichlorobenzene-d4	17.349	152	147823	50.00	ug/L		0.00
System Monitoring Compounds							
45) dibromofluoromethane (s)	10.555	113	74258	52.17	ug/L		0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 104.34%				
54) 1,2-dichloroethane-d4 (s)	11.000	65	69600	49.71	ug/L		0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 99.42%				
75) toluene-d8 (s)	13.228	98	267117	48.82	ug/L		0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 97.64%				
100) 4-bromofluorobenzene (s)	16.104	95	104290	48.12	ug/L		0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 96.24%				
Target Compounds							Qvalue
3) tertiary butyl alcohol	8.118	59	37873	245.80	ug/L		97
4) 1,4-dioxane	12.182	88	17423	1191.35	ug/L		91
6) chlorodifluoromethane	4.148	51	171487	51.29	ug/L		99
7) dichlorodifluoromethane	4.127	85	152677	37.34	ug/L		94
8) chloromethane	4.504	50	186070	48.51	ug/L		98
9) vinyl chloride	4.802	62	256906	59.28	ug/L		99
10) bromomethane	5.503	94	122107	54.93	ug/L		98
11) chloroethane	5.717	64	89269	52.53	ug/L		97
12) trichlorofluoromethane	6.277	101	183652	50.80	ug/L		99
13) vinyl bromide	6.115	106	110745	32.68	ug/L		99
14) ethyl ether	6.732	74	34593	44.39	ug/L		89
15) 2-chloropropane	6.972	43	137625	40.01	ug/L		99
16) acrolein	6.983	56	12715	48.42	ug/L		98
17) freon 113	7.239	151	104914	55.90	ug/L		95
18) 1,1-dichloroethene	7.202	96	73718	44.84	ug/L		97
19) acetone	7.213	58	33349	286.36	ug/L		94
20) acetonitrile	7.699	41	131141	439.90	ug/L		99
21) iodomethane	7.490	142	154914	44.90	ug/L		98
22) carbon disulfide	7.652	76	282606	43.42	ug/L		100
23) methylene chloride	8.034	84	86010	45.98	ug/L		99
24) methyl acetate	7.757	43	48942	45.38	ug/L		98
25) methyl tert butyl ether	8.453	73	262297	50.42	ug/L		96
26) trans-1,2-dichloroethene	8.489	96	79973	46.76	ug/L		98
27) hexane	8.892	56	58783	51.32	ug/L		99
28) di-isopropyl ether	9.132	45	321494	49.32	ug/L		97
29) 2-butanone	9.849	72	31323	257.02	ug/L		95
30) 1,1-dichloroethane	9.138	63	147323	48.94	ug/L		99
31) chloroprene	9.248	53	119823	50.29	ug/L		96
32) acrylonitrile	8.369	53	27469	44.61	ug/L		93
33) vinyl acetate	9.075	86	9913	42.76	ug/L	#	91
34) ethyl tert-butyl ether	9.645	59	283732	49.52	ug/L		97
35) ethyl acetate	9.880	45	8992	47.56	ug/L	#	61
36) 2,2-dichloropropane	9.964	77	167788	51.93	ug/L		98
37) cis-1,2-dichloroethene	9.927	96	107624	58.18	ug/L		99
38) propionitrile	9.933	54	92707	468.38	ug/L		97
39) methyl acrylate	9.964	85	8443	47.94	ug/L	#	77
40) methacrylonitrile	10.147	67	23208	43.48	ug/L		96
41) bromochloromethane	10.252	128	42904	50.30	ug/L		90
42) tetrahydrofuran	10.267	42	18293	42.27	ug/L		97
43) chloroform	10.346	83	132675	46.95	ug/L		98
44) tert-Butyl Formate	10.388	59	74231	40.48	ug/L		96
46) 1,1,1-trichloroethane	10.623	97	147951	49.08	ug/L		98
47) cyclohexane	10.743	84	163976	59.23	ug/L		84
49) 1,1-dichloropropene	10.801	75	102181	50.47	ug/L		98
50) carbon tetrachloride	10.832	117	134936	49.75	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136505.D
Acq On : 22 Apr 2017 4:21 pm
Operator : [redacted]
Sample : jc41326-13ms
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 24 08:09:46 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51)	tert-amyl alcohol	10.953	73	16861	183.56	ug/L		89
52)	isopropyl acetate	10.979	87	12514	45.30	ug/L	#	93
55)	n-butyl alcohol	11.559	56	81926	1975.54	ug/L		95
56)	2,2,4-Trimethylpentane	11.167	57	418393	57.44	ug/L		99
57)	benzene	11.062	78	304715	51.73	ug/L		99
58)	tert-amyl methyl ether	11.151	73	264951	51.46	ug/L		98
59)	heptane	11.340	57	65323	53.58	ug/L		97
60)	1,2-dichloroethane	11.094	62	84707	47.67	ug/L		98
61)	ethyl acrylate	11.821	55	64611	45.40	ug/L		93
62)	trichloroethene	11.831	95	201024	138.05	ug/L		99
63)	2-chloroethyl vinyl ether	12.668	63	187326	233.50	ug/L		98
64)	methyl methacrylate	12.093	100	13878	42.47	ug/L	#	86
65)	methylcyclohexane	12.145	83	197205	58.07	ug/L		98
66)	1,2-dichloropropane	12.135	63	80667	50.36	ug/L		97
67)	dibromomethane	12.250	93	43068	49.68	ug/L		97
68)	bromodichloromethane	12.417	83	94508	49.33	ug/L		97
69)	2-nitropropane	12.621	41	14115	43.26	ug/L		89
70)	epichlorohydrin	12.752	57	30298	227.77	ug/L		95
71)	cis-1,3-dichloropropene	12.898	75	118038	50.98	ug/L		96
72)	4-methyl-2-pentanone	13.003	58	131807	255.24	ug/L		100
73)	isoamyl alcohol	13.008	70	36741	891.85	ug/L		96
76)	toluene	13.306	92	181907	48.07	ug/L		97
77)	ethyl methacrylate	13.494	69	78368	44.20	ug/L		98
78)	trans-1,3-dichloropropene	13.505	75	101198	48.21	ug/L		95
79)	1,1,2-trichloroethane	13.746	83	51700	47.86	ug/L		98
80)	tetrachloroethene	13.897	164	72962	51.88	ug/L		96
81)	2-hexanone	13.913	58	115492	247.74	ug/L		99
82)	1,3-dichloropropane	13.939	76	100831	49.32	ug/L		95
83)	butyl acetate	13.997	56	41991	47.19	ug/L		94
84)	3,3-Dimethyl-1-Butanol	14.106	69	53157	408.90	ug/L		90
85)	dibromochloromethane	14.206	129	76816	48.76	ug/L		97
86)	1,2-dibromoethane	14.373	107	64491	47.71	ug/L		98
87)	n-butyl ether	14.833	57	376288	49.57	ug/L		98
88)	chlorobenzene	14.886	112	224137	51.17	ug/L		99
89)	1,1,1,2-tetrachloroethane	14.959	131	101827	49.39	ug/L		96
90)	ethylbenzene	14.948	91	381871	49.34	ug/L		99
91)	m,p-xylene	15.079	106	295069	97.95	ug/L		96
92)	o-xylene	15.513	91	336801	47.55	ug/L		97
93)	styrene	15.524	104	247266	49.38	ug/L		97
94)	butyl acrylate	15.320	55	137091	46.53	ug/L		99
95)	isopropylbenzene	15.885	105	463376	48.09	ug/L		100
96)	bromoform	15.780	173	58025	52.10	ug/L		98
97)	cis-1,4-dichloro-2-butene	15.921	88	24484	46.67	ug/L		95
101)	1,1,2,2-tetrachloroethane	16.188	83	101242	49.35	ug/L		99
102)	trans-1,4-dichloro-2-b...	16.214	53	22219	45.70	ug/L		92
103)	1,2,3-trichloropropane	16.282	110	23057	46.46	ug/L		96
104)	bromobenzene	16.303	156	109975	50.54	ug/L		94
105)	n-propylbenzene	16.329	91	534814	50.42	ug/L		99
106)	2-chlorotoluene	16.476	126	112827	50.99	ug/L		94
107)	4-chlorotoluene	16.596	91	288056	48.14	ug/L		97
108)	1,3,5-trimethylbenzene	16.497	105	419651	49.37	ug/L		99
109)	tert-butylbenzene	16.858	119	354415	48.33	ug/L		98
110)	1,2,4-trimethylbenzene	16.915	105	425179	48.78	ug/L		97
111)	sec-butylbenzene	17.093	105	600380	50.12	ug/L		98
112)	p-isopropyltoluene	17.224	119	526590	50.70	ug/L		99
113)	1,3-dichlorobenzene	17.276	146	243434	51.16	ug/L		100
114)	1,4-dichlorobenzene	17.375	146	241556	50.59	ug/L		98
115)	1,2-dichlorobenzene	17.762	146	257212	50.82	ug/L		98
116)	Benzyl Chloride	17.464	91	228273	55.34	ug/L		100
117)	n-butylbenzene	17.653	92	278678	52.67	ug/L		98
118)	hexachloroethane	18.071	201	103359	54.18	ug/L		96
119)	1,2-dibromo-3-chloropr...	18.536	157	31024	47.81	ug/L		96
120)	1,3,5-trichlorobenzene	18.719	180	336219	56.98	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136505.D
Acq On : 22 Apr 2017 4:21 pm
Operator : [redacted]
Sample : jc41326-13ms
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 24 08:09:46 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

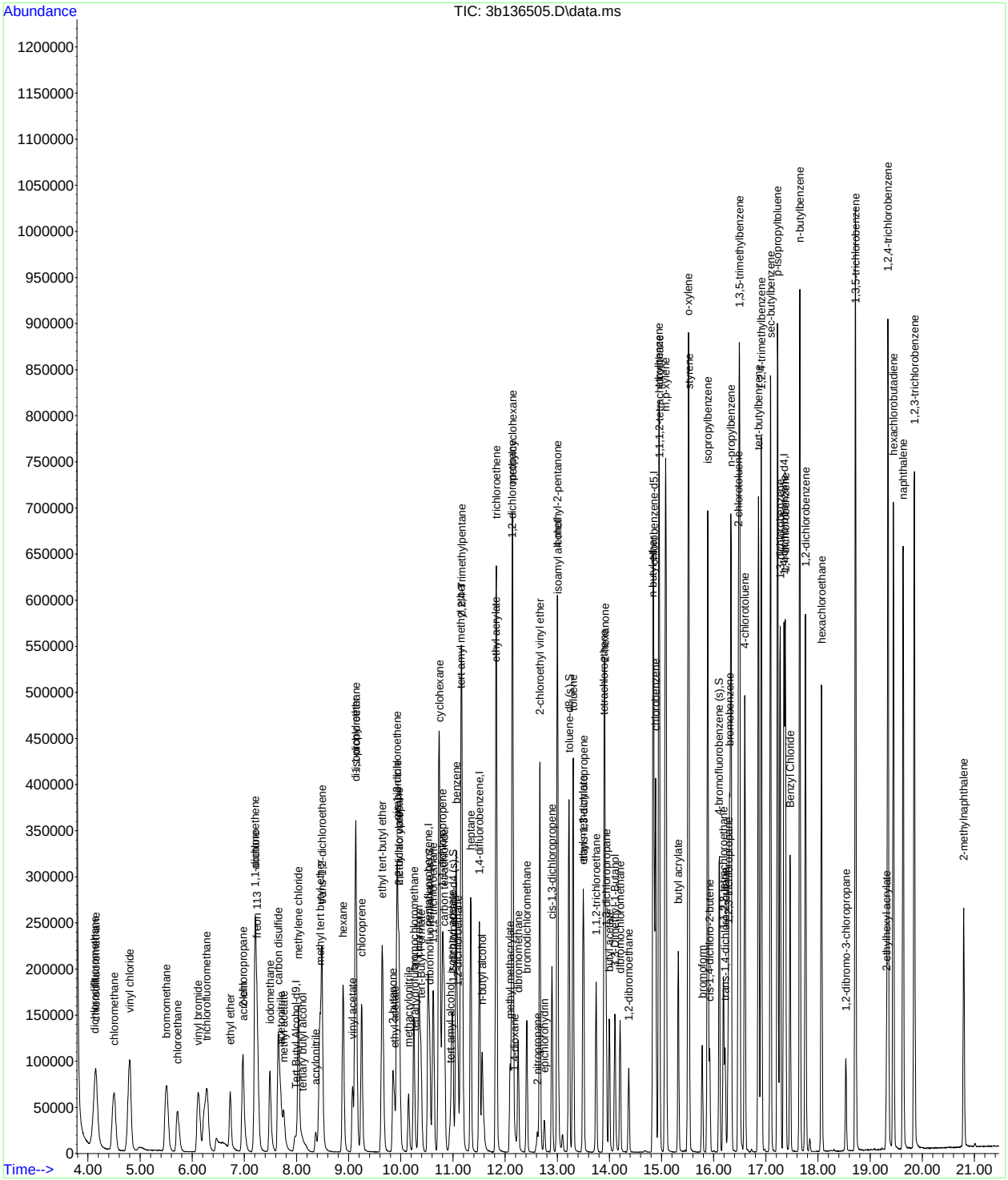
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) 2-ethylhexyl acrylate	19.316	70	27687	6.76	ug/L	98
122) 1,2,4-trichlorobenzene	19.342	180	298531	53.18	ug/L	97
123) hexachlorobutadiene	19.446	225	156810	52.54	ug/L	99
124) naphthalene	19.635	128	532736	48.42	ug/L	99
125) 1,2,3-trichlorobenzene	19.849	180	260247	52.61	ug/L	98
126) 2-methylnaphthalene	20.796	142	133530	23.82	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136505.D
Acq On : 22 Apr 2017 4:21 pm
Operator : [redacted]
Sample : jc41326-13ms
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 24 08:09:46 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136506.D
Acq On : 22 Apr 2017 4:49 pm
Operator : [redacted]
Sample : jc41326-13msd
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 22 17:12:05 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:41:10 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.992	65	78063	500.00	ug/L		0.00
5) pentafluorobenzene	10.524	168	157071	50.00	ug/L		0.00
53) 1,4-difluorobenzene	11.507	114	219855	50.00	ug/L		0.00
74) chlorobenzene-d5	14.849	117	227979	50.00	ug/L		0.00
99) 1,4-dichlorobenzene-d4	17.349	152	153961	50.00	ug/L		0.00
System Monitoring Compounds							
45) dibromofluoromethane (s)	10.555	113	77000	52.28	ug/L		0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 104.56%				
54) 1,2-dichloroethane-d4 (s)	11.000	65	73469	50.66	ug/L		0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 101.32%				
75) toluene-d8 (s)	13.223	98	278663	48.45	ug/L		0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 96.90%				
100) 4-bromofluorobenzene (s)	16.105	95	108893	48.24	ug/L		0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 96.48%				
Target Compounds							Qvalue
3) tertiary butyl alcohol	8.113	59	44012	255.01	ug/L		97
4) 1,4-dioxane	12.182	88	20558	1254.94	ug/L		94
6) chlorodifluoromethane	4.159	51	181940	52.59	ug/L		97
7) dichlorodifluoromethane	4.138	85	161223	38.11	ug/L		98
8) chloromethane	4.509	50	194466	49.01	ug/L		99
9) vinyl chloride	4.807	62	268837	59.96	ug/L		98
10) bromomethane	5.513	94	130252	56.64	ug/L		99
11) chloroethane	5.723	64	97403	55.39	ug/L		95
12) trichlorofluoromethane	6.282	101	191643	51.23	ug/L		97
13) vinyl bromide	6.120	106	117377	33.48	ug/L		99
14) ethyl ether	6.732	74	36442	45.20	ug/L		98
15) 2-chloropropane	6.978	43	145296	40.83	ug/L		98
16) acrolein	6.988	56	14291	52.60	ug/L		96
17) freon 113	7.234	151	111465	57.40	ug/L		94
18) 1,1-dichloroethene	7.203	96	80435	47.29	ug/L		94
19) acetone	7.218	58	37530	311.48	ug/L	#	83
20) acetonitrile	7.694	41	139706	452.95	ug/L		99
21) iodomethane	7.490	142	171042	47.91	ug/L		99
22) carbon disulfide	7.652	76	305215	45.33	ug/L		100
23) methylene chloride	8.040	84	93031	48.07	ug/L		95
24) methyl acetate	7.757	43	53006	47.51	ug/L		96
25) methyl tert butyl ether	8.453	73	278234	51.70	ug/L		100
26) trans-1,2-dichloroethene	8.489	96	87405	49.40	ug/L		95
27) hexane	8.897	56	61964	52.29	ug/L		95
28) di-isopropyl ether	9.138	45	340748	50.52	ug/L		97
29) 2-butanone	9.854	72	36206	287.15	ug/L		96
30) 1,1-dichloroethane	9.138	63	156801	50.35	ug/L		98
31) chloroprene	9.248	53	128244	52.03	ug/L		96
32) acrylonitrile	8.369	53	29728	46.67	ug/L		96
33) vinyl acetate	9.080	86	10965	45.72	ug/L	#	74
34) ethyl tert-butyl ether	9.645	59	300579	50.70	ug/L		98
35) ethyl acetate	9.886	45	9666	49.42	ug/L	#	89
36) 2,2-dichloropropane	9.964	77	173903	52.02	ug/L		98
37) cis-1,2-dichloroethene	9.928	96	113834	59.48	ug/L		94
38) propionitrile	9.933	54	101218	494.28	ug/L		99
39) methyl acrylate	9.969	85	9174	50.34	ug/L	#	75
40) methacrylonitrile	10.153	67	25476	46.13	ug/L		91
41) bromochloromethane	10.247	128	45298	51.33	ug/L		91
42) tetrahydrofuran	10.262	42	19679	43.95	ug/L		91
43) chloroform	10.351	83	141486	48.39	ug/L		99
44) tert-Butyl Formate	10.383	59	80232	42.29	ug/L		95
46) 1,1,1-trichloroethane	10.623	97	157675	50.56	ug/L		99
47) cyclohexane	10.744	84	171702	59.95	ug/L		85
49) 1,1-dichloropropene	10.801	75	107756	51.44	ug/L		100
50) carbon tetrachloride	10.832	117	143405	51.11	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136506.D
Acq On : 22 Apr 2017 4:49 pm
Operator : [redacted]
Sample : jc41326-13msd
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 22 17:12:05 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:41:10 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51)	tert-amyl alcohol	10.948	73	19017	200.11	ug/L		92
52)	isopropyl acetate	10.979	87	13483	47.17	ug/L	#	92
55)	n-butyl alcohol	11.559	56	98285	2288.01	ug/L		98
56)	2,2,4-Trimethylpentane	11.172	57	436320	57.82	ug/L		98
57)	benzene	11.063	78	322388	52.84	ug/L		99
58)	tert-amyl methyl ether	11.157	73	278537	52.23	ug/L		97
59)	heptane	11.340	57	68257	54.05	ug/L		99
60)	1,2-dichloroethane	11.094	62	89792	48.79	ug/L		95
61)	ethyl acrylate	11.821	55	68255	46.31	ug/L		93
62)	trichloroethene	11.831	95	210995	139.88	ug/L		98
63)	2-chloroethyl vinyl ether	12.668	63	196724	236.73	ug/L		99
64)	methyl methacrylate	12.098	100	15088	44.58	ug/L		94
65)	methylcyclohexane	12.145	83	206837	58.79	ug/L		98
66)	1,2-dichloropropane	12.135	63	86791	52.31	ug/L		100
67)	dibromomethane	12.250	93	45071	50.19	ug/L		99
68)	bromodichloromethane	12.417	83	101957	51.38	ug/L		95
69)	2-nitropropane	12.621	41	14236	42.13	ug/L		81
70)	epichlorohydrin	12.757	57	32581	236.46	ug/L		99
71)	cis-1,3-dichloropropene	12.898	75	122192	50.95	ug/L		97
72)	4-methyl-2-pentanone	13.003	58	150027	280.47	ug/L		97
73)	isoamyl alcohol	13.008	70	40362	945.85	ug/L		95
76)	toluene	13.306	92	193434	48.62	ug/L		94
77)	ethyl methacrylate	13.495	69	85713	45.98	ug/L		99
78)	trans-1,3-dichloropropene	13.505	75	106179	48.11	ug/L		94
79)	1,1,2-trichloroethane	13.746	83	54013	47.56	ug/L		99
80)	tetrachloroethene	13.903	164	77113	52.16	ug/L		98
81)	2-hexanone	13.908	58	132641	270.63	ug/L		99
82)	1,3-dichloropropane	13.939	76	107026	49.80	ug/L		89
83)	butyl acetate	13.997	56	46196	49.38	ug/L		98
84)	3,3-Dimethyl-1-Butanol	14.107	69	58980	431.54	ug/L		98
85)	dibromochloromethane	14.206	129	84147	50.80	ug/L		97
86)	1,2-dibromoethane	14.373	107	66950	47.11	ug/L		99
87)	n-butyl ether	14.834	57	403722	50.59	ug/L		99
88)	chlorobenzene	14.886	112	237390	51.55	ug/L		98
89)	1,1,1,2-tetrachloroethane	14.959	131	108360	50.00	ug/L		99
90)	ethylbenzene	14.949	91	409622	50.34	ug/L		99
91)	m,p-xylene	15.079	106	318774	100.65	ug/L		94
92)	o-xylene	15.514	91	362322	48.65	ug/L		98
93)	styrene	15.524	104	267105	50.74	ug/L		95
94)	butyl acrylate	15.320	55	149443	48.25	ug/L		98
95)	isopropylbenzene	15.885	105	493132	48.68	ug/L		99
96)	bromoform	15.780	173	63404	54.15	ug/L		99
97)	cis-1,4-dichloro-2-butene	15.927	88	26279	47.64	ug/L		96
101)	1,1,2,2-tetrachloroethane	16.188	83	107391	50.26	ug/L		97
102)	trans-1,4-dichloro-2-b...	16.214	53	23256	45.92	ug/L		91
103)	1,2,3-trichloropropane	16.282	110	25029	48.42	ug/L		95
104)	bromobenzene	16.303	156	116986	51.62	ug/L		96
105)	n-propylbenzene	16.329	91	573477	51.91	ug/L		100
106)	2-chlorotoluene	16.476	126	119708	51.95	ug/L		95
107)	4-chlorotoluene	16.596	91	310092	49.76	ug/L		97
108)	1,3,5-trimethylbenzene	16.497	105	446577	50.44	ug/L		98
109)	tert-butylbenzene	16.858	119	371342	48.62	ug/L		99
110)	1,2,4-trimethylbenzene	16.910	105	454011	50.01	ug/L		98
111)	sec-butylbenzene	17.088	105	632698	50.71	ug/L		99
112)	p-isopropyltoluene	17.224	119	561940	51.94	ug/L		98
113)	1,3-dichlorobenzene	17.276	146	257966	52.06	ug/L		98
114)	1,4-dichlorobenzene	17.375	146	258603	52.00	ug/L		96
115)	1,2-dichlorobenzene	17.763	146	274441	52.06	ug/L		98
116)	Benzyl Chloride	17.464	91	236047	54.94	ug/L		98
117)	n-butylbenzene	17.653	92	296491	53.80	ug/L		99
118)	hexachloroethane	18.071	201	108269	54.49	ug/L		99
119)	1,2-dibromo-3-chloropr...	18.537	157	32590	48.22	ug/L		94
120)	1,3,5-trichlorobenzene	18.720	180	353325	57.49	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136506.D
Acq On : 22 Apr 2017 4:49 pm
Operator : [redacted]
Sample : jc41326-13msd
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 22 17:12:05 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:41:10 2017
Response via : Initial Calibration

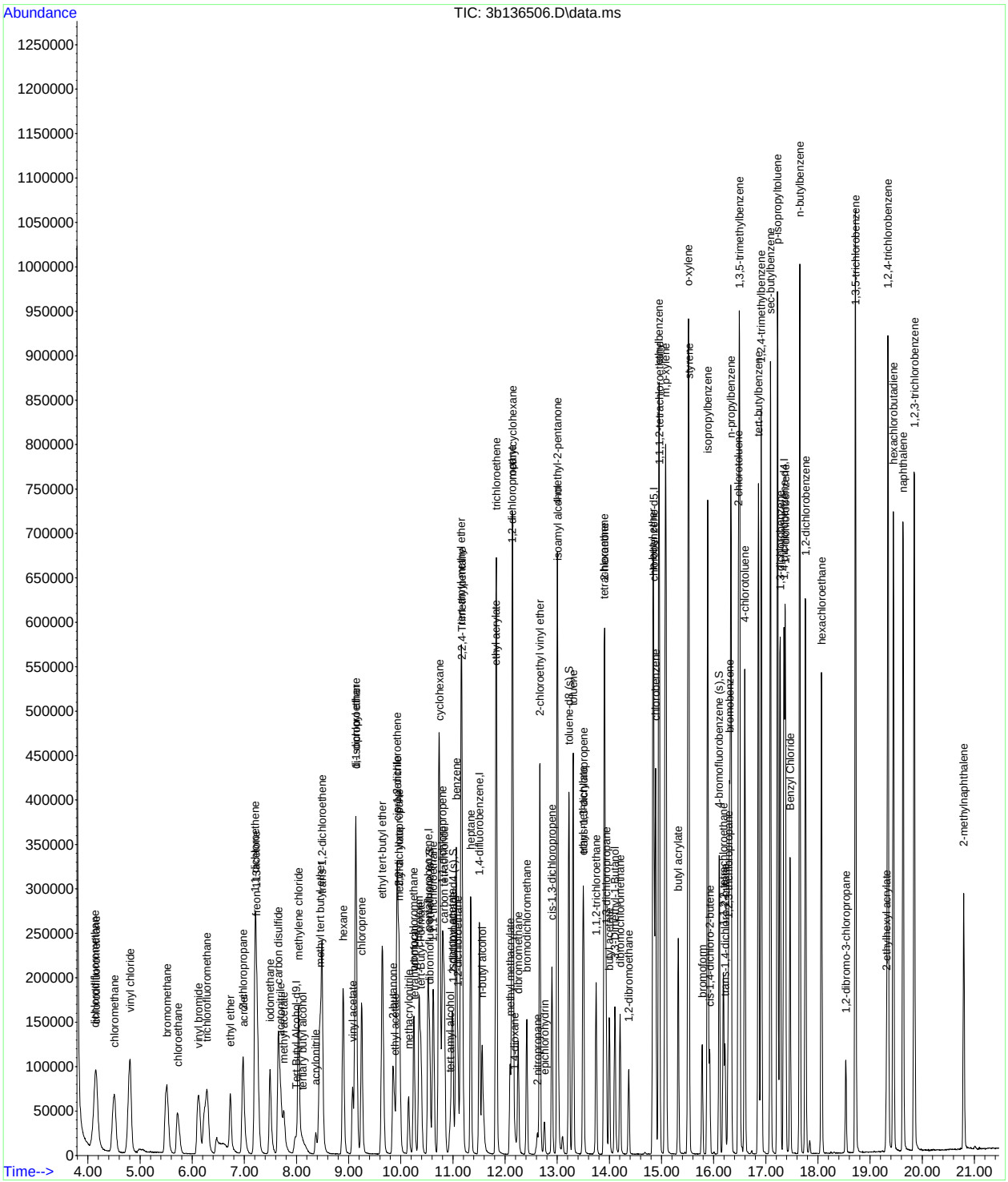
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) 2-ethylhexyl acrylate	19.316	70	29239	6.85	ug/L	93
122) 1,2,4-trichlorobenzene	19.342	180	309730	52.97	ug/L	99
123) hexachlorobutadiene	19.447	225	164291	52.85	ug/L	98
124) naphthalene	19.635	128	567273	49.50	ug/L	99
125) 1,2,3-trichlorobenzene	19.849	180	278375	54.03	ug/L	99
126) 2-methylnaphthalene	20.796	142	149057	25.53	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136506.D
Acq On : 22 Apr 2017 4:49 pm
Operator : [redacted]
Sample : jc41326-13msd
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 14 Sample Multiplier: 1

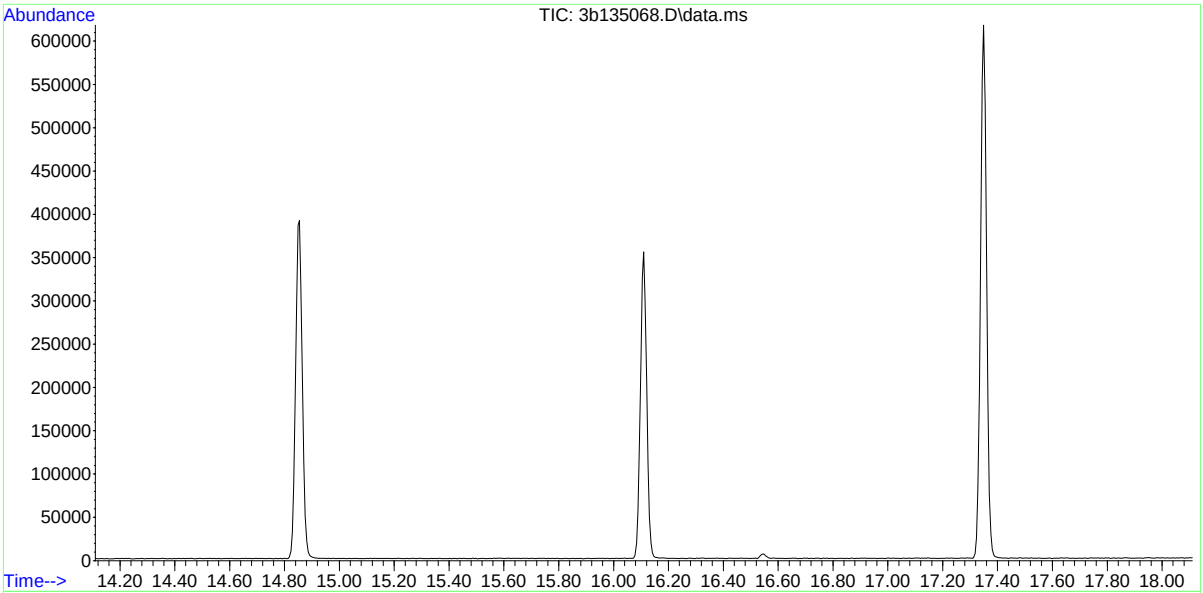
Quant Time: Apr 22 17:12:05 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:41:10 2017
Response via : Initial Calibration



SW-846 Method 8260

Data File : [redacted]3B\v3b5999final\3b135068.D Vial: 1
Acq On : 2 Mar 2017 3:57 pm Operator: [redacted]
Sample : bfb Inst : MS3B
Misc : MS12964,V3B5999,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : [redacted]M3B5999.m (RTE Integrator)
Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um



AutoFind: Scans 2356, 2357, 2358; Background Corrected with Scan 2347

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.6	11859	PASS
75	95	30	60	46.0	31005	PASS
95	95	100	100	100.0	67445	PASS
96	95	5	9	6.2	4204	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	150	92.4	62291	PASS
175	174	5	9	7.4	4618	PASS
176	174	95	101	97.2	60531	PASS
177	176	5	9	6.8	4139	PASS

3b135068.D M3B5999.m Fri Mar 03 16:06:27 2017 11

Average of 16.104 to 16.115 min.: 3b135068.D\data.ms
bfb
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.05	621	50.05	11859	67.05	209	78.90	1374
37.10	3205	51.05	3475	68.00	5930	80.00	416
38.05	2777	52.05	106	69.05	6044	80.90	1372
39.10	1077	55.10	135	70.05	480	81.90	280
41.10	50	56.00	866	72.00	348	87.00	3218
43.20	55	57.00	1575	73.00	2896	88.00	3079
44.00	369	60.05	664	74.00	9614	91.00	184
45.10	462	61.00	2549	75.00	31005	92.05	1473
47.05	951	62.05	2678	76.00	2665	93.00	2377
48.00	360	63.05	2002	77.00	436	94.00	6878
49.05	2567	64.00	200	77.95	325	95.00	67445

Average of 16.104 to 16.115 min.: 3b135068.D\data.ms
bfb
Modified:subtracted

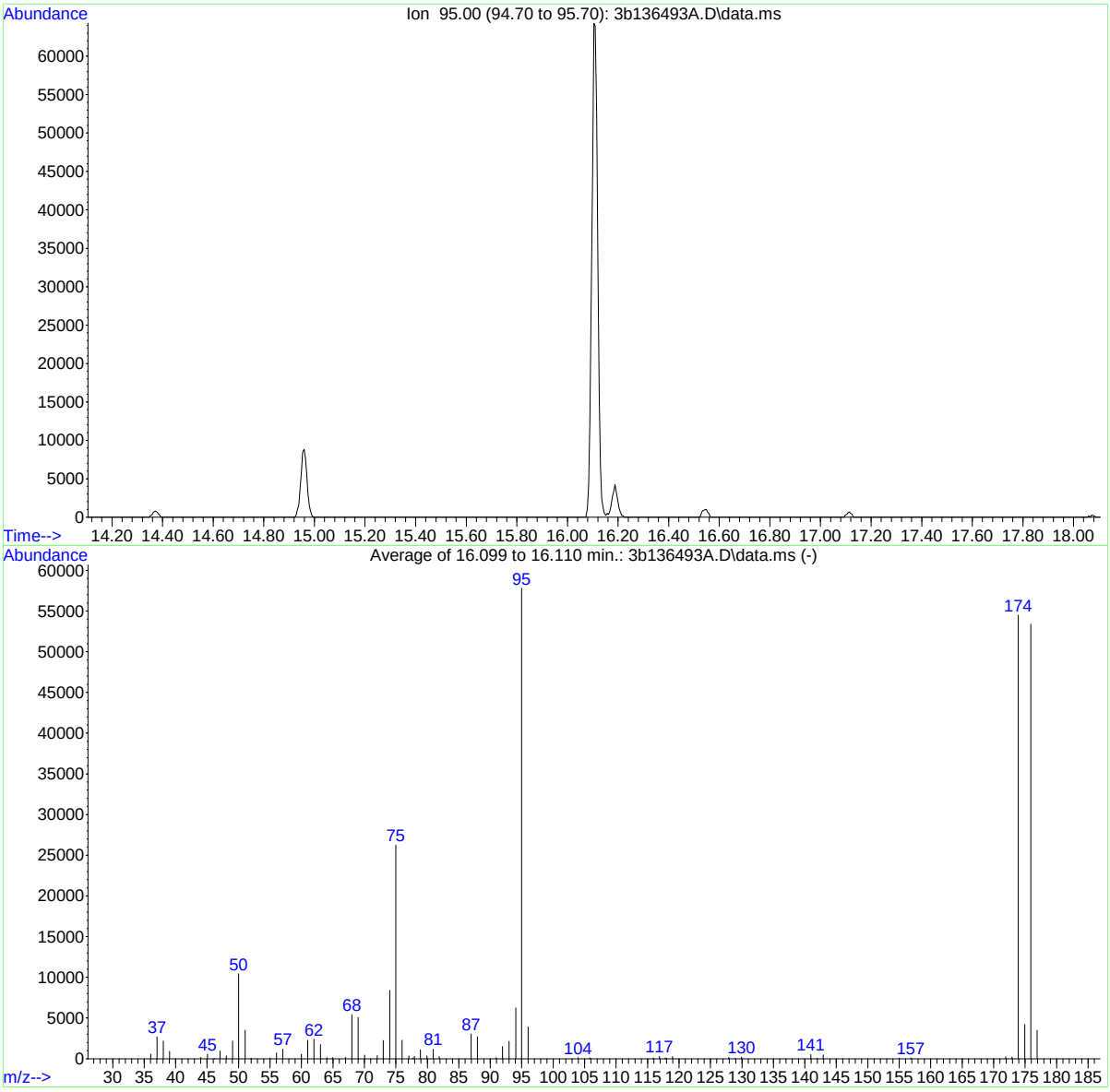
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
96.00	4204	142.90	536				
103.85	260	148.00	71				
105.85	220	154.90	67				
115.90	222	173.90	62291				
116.95	329	174.95	4618				
117.90	151	175.90	60531				
118.95	314	176.90	4139				
127.95	195	178.00	60				
129.85	215	207.00	80				
134.90	61						
140.95	526						

SGS ACCUTEST

SW-846 Method 8260

Data File : [redacted]3B\v3b6055-56\3b136493A.D Vial: 2
Acq On : 22 Apr 2017 10:09 am Operator: [redacted]
Sample : BFB Inst : MS3B
Misc : MS14988,V3B6056,5,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : [redacted]M3B5999.M (RTE Integrator)
Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um



AutoFind: Scans 2355, 2356, 2357; Background Corrected with Scan 2348

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.1	10433	PASS
75	95	30	60	45.4	26221	PASS
95	95	100	100	100.0	57800	PASS
96	95	5	9	6.8	3905	PASS
173	174	0.00	2	0.4	203	PASS
174	95	50	150	94.3	54509	PASS
175	174	5	9	7.7	4207	PASS
176	174	95	101	98.0	53411	PASS
177	176	5	9	6.6	3505	PASS

3b136493A.D M3B5999.M Mon Apr 24 15:59:00 2017 11

SGS ACCUTEST

Average of 16.099 to 16.110 min.: 3b136493A.D\data.ms
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.05	567	51.05	3512	67.00	171	77.95	289
37.05	2686	52.00	75	68.00	5401	78.90	1101
38.05	2170	55.00	74	69.00	5076	79.95	350
39.05	920	56.05	694	70.05	439	80.95	1172
44.00	185	57.05	1196	72.05	390	81.90	268
45.05	560	60.00	548	73.00	2243	86.95	3043
46.20	51	61.00	2275	74.05	8406	87.95	2709
47.05	935	62.00	2400	75.00	26221	90.95	143
48.05	344	63.00	1734	76.00	2260	91.95	1500
49.05	2164	64.05	154	77.05	345	93.00	2153
50.00	10433	64.95	134	77.70	67	94.05	6243

Average of 16.099 to 16.110 min.: 3b136493A.D\data.ms
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
95.00	57800	128.90	52	175.90	53411		
96.00	3905	129.95	190	176.90	3505		
103.95	147	140.95	518				
105.80	115	141.90	55				
106.00	51	142.90	489				
115.90	73	155.00	82				
116.90	309	156.85	110				
117.80	118	171.90	237				
118.00	57	172.90	203				
118.95	257	173.90	54509				
127.90	173	174.95	4207				

SGS ACCUTEST

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135069.D
Acq On : 2 Mar 2017 4:44 pm
Operator : [redacted]
Sample : 1c5999-0.2
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 03 11:28:30 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

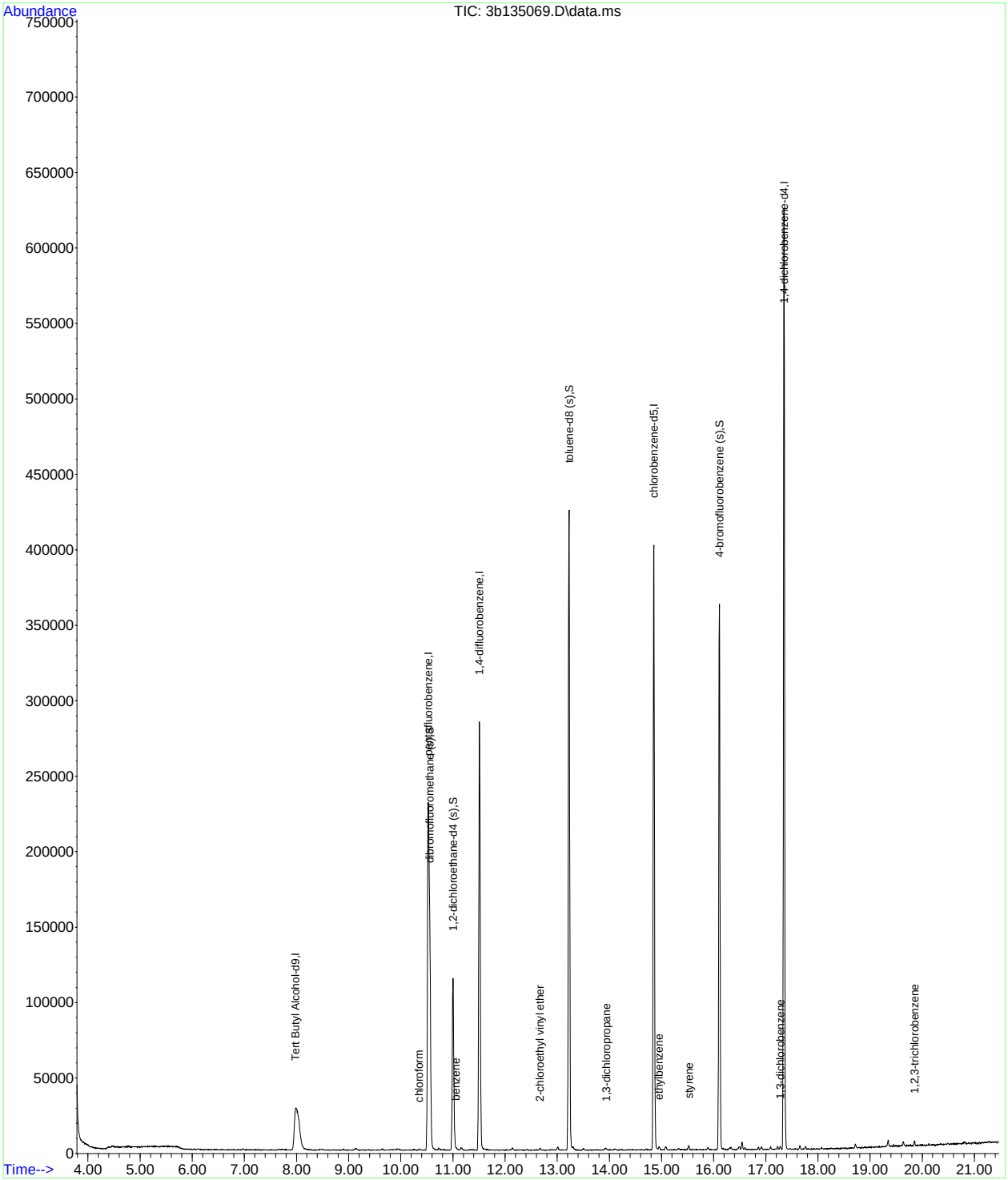
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.982	65	112931	500.00	ug/L		-0.02
5) pentafluorobenzene	10.529	168	181285	50.00	ug/L		0.00
53) 1,4-difluorobenzene	11.507	114	246079	50.00	ug/L		0.00
74) chlorobenzene-d5	14.854	117	229326	50.00	ug/L		0.00
99) 1,4-dichlorobenzene-d4	17.349	152	163478	50.00	ug/L		0.00
System Monitoring Compounds							
45) dibromofluoromethane (s)	10.555	113	84353	49.59	ug/L		0.00
Spiked Amount 50.000	Range 70 - 122		Recovery = 99.18%				
54) 1,2-dichloroethane-d4 (s)	11.000	65	82158	50.68	ug/L		0.00
Spiked Amount 50.000	Range 68 - 124		Recovery = 101.36%				
75) toluene-d8 (s)	13.228	98	293940	50.89	ug/L		0.00
Spiked Amount 50.000	Range 77 - 125		Recovery = 101.78%				
100) 4-bromofluorobenzene (s)	16.110	95	120837	50.46	ug/L		0.00
Spiked Amount 50.000	Range 72 - 130		Recovery = 100.92%				
Target Compounds							Qvalue
43) chloroform	10.351	83	769	0.23	ug/L		79
57) benzene	11.057	78	1187	0.17	ug/L	#	36
63) 2-chloroethyl vinyl ether	12.663	63	643	0.34	ug/L	#	46
82) 1,3-dichloropropane	13.944	76	400	0.18	ug/L	#	59
90) ethylbenzene	14.949	91	1418	0.17	ug/L		88
93) styrene	15.524	104	945	0.18	ug/L		86
113) 1,3-dichlorobenzene	17.276	146	1037	0.20	ug/L		92
125) 1,2,3-trichlorobenzene	19.849	180	1157	0.21	ug/L		91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135069.D
Acq On : 2 Mar 2017 4:44 pm
Operator : [redacted]
Sample : 1c5999-0.2
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 03 11:28:30 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration



SGS ACCUTEST

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135070.D
Acq On : 2 Mar 2017 5:13 pm
Operator : [redacted]
Sample : ic5999-0.5
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 03 11:34:58 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.982	65	105022	500.00	ug/L		-0.02
5) pentafluorobenzene	10.529	168	175166	50.00	ug/L		0.00
53) 1,4-difluorobenzene	11.512	114	239058	50.00	ug/L		0.00
74) chlorobenzene-d5	14.855	117	229355	50.00	ug/L		0.00
99) 1,4-dichlorobenzene-d4	17.349	152	171837	50.00	ug/L		0.00
System Monitoring Compounds							
45) dibromofluoromethane (s)	10.560	113	80707	49.10	ug/L		0.00
Spiked Amount 50.000	Range 70 - 122		Recovery = 98.20%				
54) 1,2-dichloroethane-d4 (s)	11.000	65	80218	50.94	ug/L		0.00
Spiked Amount 50.000	Range 68 - 124		Recovery = 101.88%				
75) toluene-d8 (s)	13.228	98	291145	50.40	ug/L		0.00
Spiked Amount 50.000	Range 77 - 125		Recovery = 100.80%				
100) 4-bromofluorobenzene (s)	16.110	95	122206	48.55	ug/L		0.00
Spiked Amount 50.000	Range 72 - 130		Recovery = 97.10%				
Target Compounds							Qvalue
7) dichlorodifluoromethane	4.143	85	2124	0.45	ug/L	#	50
8) chloromethane	4.483	50	2173	0.49	ug/L		83
9) vinyl chloride	4.781	62	2363	0.47	ug/L		79
10) bromomethane	5.492	94	1249	0.49	ug/L	#	63
11) chloroethane	5.712	64	807	0.41	ug/L	#	45
13) vinyl bromide	6.115	106	1824	0.47	ug/L	#	75
15) 2-chloropropane	6.978	43	2074	0.52	ug/L		72
21) iodomethane	7.506	142	1704	0.43	ug/L		89
22) carbon disulfide	7.658	76	3445	0.46	ug/L		88
23) methylene chloride	8.055	84	994	0.46	ug/L		92
25) methyl tert butyl ether	8.468	73	2661	0.44	ug/L		90
26) trans-1,2-dichloroethene	8.484	96	1035	0.52	ug/L	#	65
28) di-isopropyl ether	9.138	45	3598	0.48	ug/L		94
31) chloroprene	9.253	53	1262	0.46	ug/L		85
34) ethyl tert-butyl ether	9.650	59	2991	0.45	ug/L		91
36) 2,2-dichloropropane	9.954	77	1704	0.46	ug/L		84
37) cis-1,2-dichloroethene	9.933	96	1081	0.51	ug/L		76
43) chloroform	10.351	83	1655	0.52	ug/L		87
46) 1,1,1-trichloroethane	10.618	97	1623	0.47	ug/L		76
57) benzene	11.068	78	3043	0.45	ug/L		92
58) tert-amyl methyl ether	11.157	73	2799	0.48	ug/L		91
63) 2-chloroethyl vinyl ether	12.668	63	2150	1.18	ug/L		97
71) cis-1,3-dichloropropene	12.904	75	1109	0.43	ug/L		92
72) 4-methyl-2-pentanone	13.003	58	1348	2.32	ug/L	#	61
76) toluene	13.306	92	1683	0.42	ug/L	#	76
77) ethyl methacrylate	13.495	69	883	0.47	ug/L	#	66
81) 2-hexanone	13.918	58	1098	2.23	ug/L		91
82) 1,3-dichloropropane	13.939	76	931	0.43	ug/L		84
83) butyl acetate	14.007	56	389	0.41	ug/L	#	43
84) 3,3-Dimethyl-1-Butanol	14.101	69	651	1.44	ug/L		83
87) n-butyl ether	14.839	57	3673	0.46	ug/L	#	54
88) chlorobenzene	14.886	112	1932	0.42	ug/L		87
90) ethylbenzene	14.949	91	3804	0.46	ug/L		90
91) m,p-xylene	15.079	106	2750	0.70	ug/L		94
92) o-xylene	15.514	91	3211	0.43	ug/L		98
93) styrene	15.529	104	2449	0.46	ug/L		97
94) butyl acrylate	15.330	55	1646	0.53	ug/L	#	84
96) bromoform	15.780	173	388	0.33	ug/L	#	38
107) 4-chlorotoluene	16.601	91	2976	0.43	ug/L		95
113) 1,3-dichlorobenzene	17.276	146	2487	0.45	ug/L		83
114) 1,4-dichlorobenzene	17.375	146	2390	0.43	ug/L		84
115) 1,2-dichlorobenzene	17.763	146	2627	0.45	ug/L		96
116) Benzyl Chloride	17.470	91	2324	0.48	ug/L		91
117) n-butylbenzene	17.653	92	2535	0.41	ug/L		94
122) 1,2,4-trichlorobenzene	19.347	180	2836	0.43	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135070.D
Acq On : 2 Mar 2017 5:13 pm
Operator : [redacted]
Sample : 1c5999-0.5
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 03 11:34:58 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

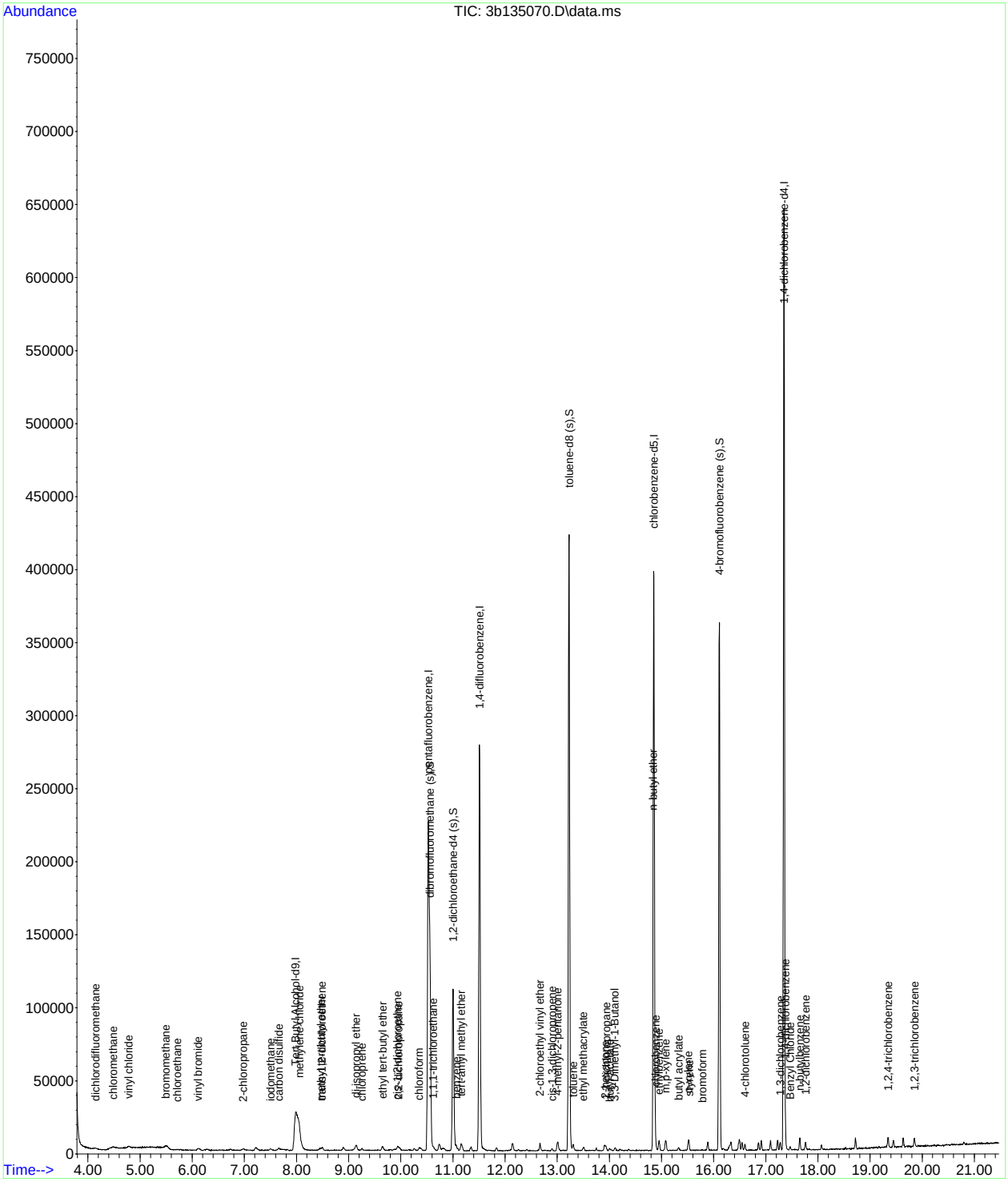
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
125) 1,2,3-trichlorobenzene	19.849	180	2435	0.43	ug/L	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135070.D
Acq On : 2 Mar 2017 5:13 pm
Operator : [redacted]
Sample : 1c5999-0.5
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 03 11:34:58 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135071.D
Acq On : 2 Mar 2017 5:41 pm
Operator : [redacted]
Sample : ic5999-1
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 03 11:35:05 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.987	65	106554	500.00	ug/L	-0.01
5) pentafluorobenzene	10.529	168	174661	50.00	ug/L	0.00
53) 1,4-difluorobenzene	11.507	114	242685	50.00	ug/L	0.00
74) chlorobenzene-d5	14.855	117	229444	50.00	ug/L	0.00
99) 1,4-dichlorobenzene-d4	17.349	152	165161	50.00	ug/L	0.00
System Monitoring Compounds						
45) dibromofluoromethane (s)	10.555	113	82369	50.26	ug/L	0.00
Spiked Amount 50.000	Range 70 - 122		Recovery = 100.52%			
54) 1,2-dichloroethane-d4 (s)	11.000	65	80787	50.53	ug/L	0.00
Spiked Amount 50.000	Range 68 - 124		Recovery = 101.06%			
75) toluene-d8 (s)	13.228	98	289253	50.06	ug/L	0.00
Spiked Amount 50.000	Range 77 - 125		Recovery = 100.12%			
100) 4-bromofluorobenzene (s)	16.110	95	120280	49.72	ug/L	0.00
Spiked Amount 50.000	Range 72 - 130		Recovery = 99.44%			
Target Compounds						Qvalue
7) dichlorodifluoromethane	4.127	85	3658	0.78	ug/L	87
8) chloromethane	4.467	50	3917	0.89	ug/L	82
9) vinyl chloride	4.797	62	4457	0.89	ug/L	88
10) bromomethane	5.482	94	2457	0.96	ug/L	80
11) chloroethane	5.723	64	1910	0.98	ug/L	66
12) trichlorofluoromethane	6.298	101	3561	0.88	ug/L	79
13) vinyl bromide	6.099	106	3510	0.90	ug/L #	68
15) 2-chloropropane	6.983	43	4011	1.01	ug/L	95
18) 1,1-dichloroethene	7.208	96	1677	0.91	ug/L	80
21) iodomethane	7.496	142	3430	0.86	ug/L	94
22) carbon disulfide	7.658	76	6720	0.90	ug/L	95
23) methylene chloride	8.045	84	2178	1.01	ug/L	93
25) methyl tert butyl ether	8.453	73	5539	0.93	ug/L	91
26) trans-1,2-dichloroethene	8.495	96	1905	0.97	ug/L	83
27) hexane	8.897	56	1139	0.89	ug/L	84
28) di-isopropyl ether	9.133	45	6458	0.86	ug/L	97
30) 1,1-dichloroethane	9.143	63	3019	0.89	ug/L	91
31) chloroprene	9.253	53	2274	0.83	ug/L	87
34) ethyl tert-butyl ether	9.656	59	5323	0.81	ug/L	97
36) 2,2-dichloropropane	9.964	77	3477	0.94	ug/L	92
37) cis-1,2-dichloroethene	9.938	96	2045	0.96	ug/L	98
38) propionitrile	9.949	54	1879	2.71	ug/L	58
41) bromochloromethane	10.247	128	820	0.87	ug/L	80
43) chloroform	10.357	83	2862	0.89	ug/L	97
44) tert-Butyl Formate	10.383	59	1635	0.80	ug/L	92
46) 1,1,1-trichloroethane	10.629	97	2990	0.86	ug/L	98
47) cyclohexane	10.744	84	2418	0.77	ug/L	88
49) 1,1-dichloropropene	10.801	75	1934	0.85	ug/L	95
50) carbon tetrachloride	10.838	117	2589	0.85	ug/L	97
57) benzene	11.063	78	6287	0.92	ug/L	89
58) tert-amyl methyl ether	11.152	73	5061	0.86	ug/L	94
59) heptane	11.345	57	1107	0.81	ug/L	98
60) 1,2-dichloroethane	11.099	62	1677	0.84	ug/L	82
62) trichloroethene	11.837	95	1475	1.75	ug/L	77
63) 2-chloroethyl vinyl ether	12.668	63	3881	2.10	ug/L	97
65) methylcyclohexane	12.145	83	3145	0.83	ug/L	96
66) 1,2-dichloropropane	12.135	63	1541	0.86	ug/L	76
67) dibromomethane	12.250	93	896	0.94	ug/L	79
68) bromodichloromethane	12.417	83	1905	0.89	ug/L	93
70) epichlorohydrin	12.757	57	743	2.68	ug/L	55
71) cis-1,3-dichloropropene	12.898	75	2413	0.91	ug/L	99
72) 4-methyl-2-pentanone	13.003	58	2787	4.72	ug/L	95
76) toluene	13.306	92	3611	0.90	ug/L	91
77) ethyl methacrylate	13.495	69	1628	0.87	ug/L	91
78) trans-1,3-dichloropropene	13.510	75	1997	0.92	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135071.D
Acq On : 2 Mar 2017 5:41 pm
Operator : [redacted]
Sample : ic5999-1
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 03 11:35:05 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
79)	1,1,2-trichloroethane	13.741	83	1131	1.03	ug/L	#	68
80)	tetrachloroethene	13.903	164	1317	0.92	ug/L		86
81)	2-hexanone	13.913	58	2356	4.78	ug/L		95
82)	1,3-dichloropropane	13.939	76	2073	0.95	ug/L		93
83)	butyl acetate	14.002	56	870	0.92	ug/L	#	67
84)	3,3-Dimethyl-1-Butanol	14.107	69	1277	2.83	ug/L		86
85)	dibromochloromethane	14.211	129	1442	0.88	ug/L		96
86)	1,2-dibromoethane	14.379	107	1212	0.87	ug/L		98
87)	n-butyl ether	14.834	57	7425	0.92	ug/L		87
88)	chlorobenzene	14.886	112	4313	0.93	ug/L		88
89)	1,1,1,2-tetrachloroethane	14.964	131	1874	0.88	ug/L		90
90)	ethylbenzene	14.954	91	7572	0.91	ug/L		89
91)	m,p-xylene	15.079	106	5867	1.49	ug/L		87
92)	o-xylene	15.514	91	6809	0.91	ug/L		99
93)	styrene	15.529	104	4787	0.89	ug/L		95
94)	butyl acrylate	15.325	55	3051	0.98	ug/L		93
95)	isopropylbenzene	15.885	105	8607	0.86	ug/L		96
96)	bromoform	15.780	173	1150	0.98	ug/L		91
101)	1,1,2,2-tetrachloroethane	16.188	83	1990	0.89	ug/L		94
104)	bromobenzene	16.298	156	2015	0.85	ug/L		87
105)	n-propylbenzene	16.329	91	10018	0.86	ug/L		99
106)	2-chlorotoluene	16.481	126	2097	0.87	ug/L	#	84
107)	4-chlorotoluene	16.596	91	6083	0.91	ug/L		94
108)	1,3,5-trimethylbenzene	16.497	105	7579	0.82	ug/L		95
110)	1,2,4-trimethylbenzene	16.915	105	8059	0.85	ug/L		94
112)	p-isopropyltoluene	17.224	119	9170	0.81	ug/L		93
113)	1,3-dichlorobenzene	17.276	146	4842	0.91	ug/L		98
114)	1,4-dichlorobenzene	17.376	146	5111	0.96	ug/L		97
115)	1,2-dichlorobenzene	17.768	146	5049	0.89	ug/L		91
116)	Benzyl Chloride	17.470	91	3985	0.86	ug/L		93
117)	n-butylbenzene	17.653	92	5158	0.87	ug/L		96
120)	1,3,5-trichlorobenzene	18.720	180	5571	0.86	ug/L		97
122)	1,2,4-trichlorobenzene	19.347	180	5434	0.87	ug/L		95
125)	1,2,3-trichlorobenzene	19.849	180	4571	0.83	ug/L		95

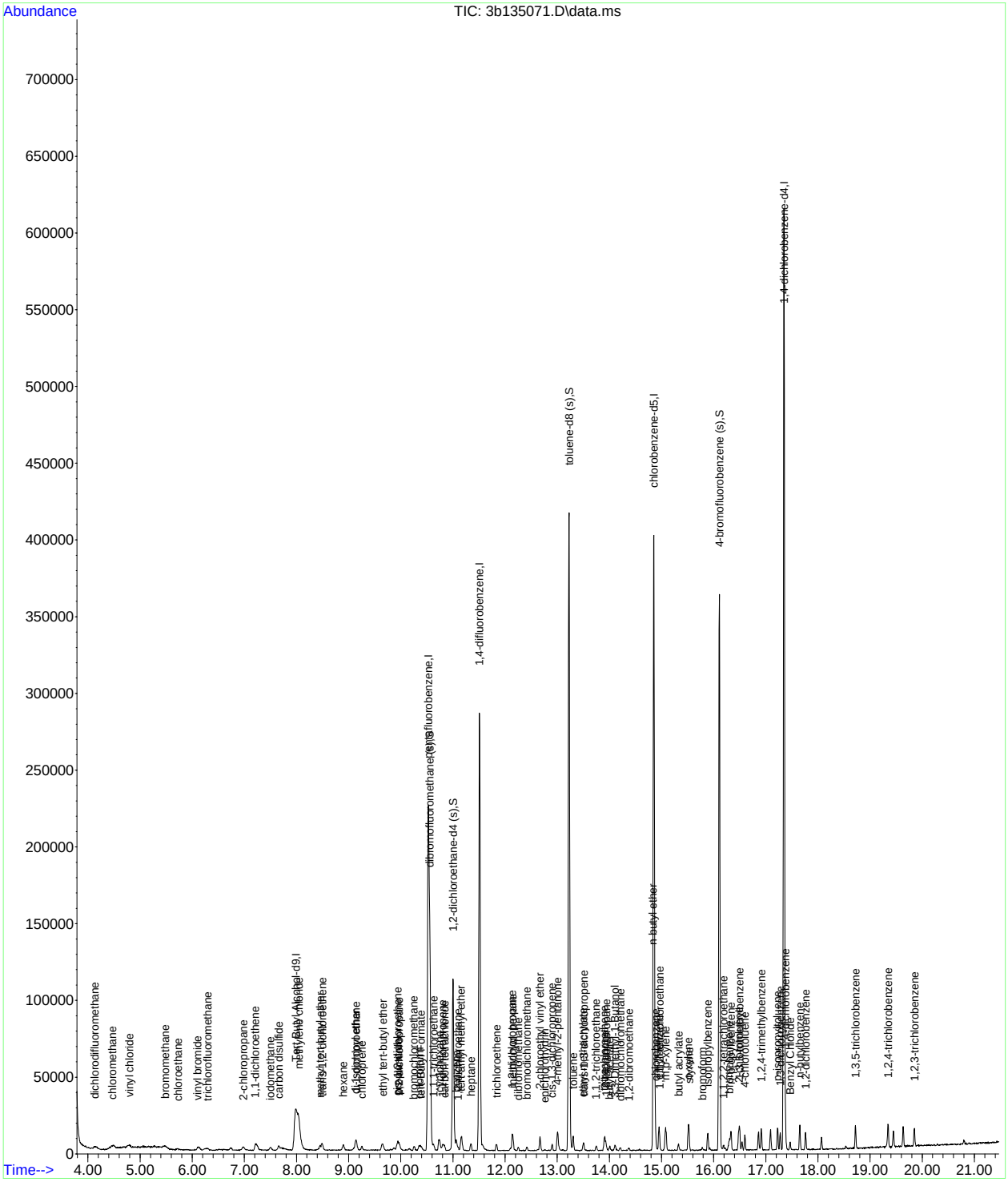
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135071.D
Acq On : 2 Mar 2017 5:41 pm
Operator : [redacted]
Sample : 1c5999-1
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 03 11:35:05 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration



SGS ACCUTEST

7.6.3 7

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135072.D
Acq On : 2 Mar 2017 6:09 pm
Operator : [redacted]
Sample : 1c5999-2
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 03 11:48:50 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.982	65	104517	500.00	ug/L		-0.02
5) pentafluorobenzene	10.529	168	171322	50.00	ug/L		0.00
53) 1,4-difluorobenzene	11.507	114	235689	50.00	ug/L		0.00
74) chlorobenzene-d5	14.849	117	225014	50.00	ug/L		0.00
99) 1,4-dichlorobenzene-d4	17.349	152	162589	50.00	ug/L		0.00
System Monitoring Compounds							
45) dibromofluoromethane (s)	10.555	113	79296	49.32	ug/L		0.00
Spiked Amount 50.000	Range 70 - 122		Recovery = 98.64%				
54) 1,2-dichloroethane-d4 (s)	11.000	65	78156	50.34	ug/L		0.00
Spiked Amount 50.000	Range 68 - 124		Recovery = 100.68%				
75) toluene-d8 (s)	13.223	98	283143	49.96	ug/L		0.00
Spiked Amount 50.000	Range 77 - 125		Recovery = 99.92%				
100) 4-bromofluorobenzene (s)	16.110	95	117674	49.41	ug/L		0.00
Spiked Amount 50.000	Range 72 - 130		Recovery = 98.82%				
Target Compounds							Qvalue
3) tertiary butyl alcohol	8.144	59	1619	8.16	ug/L		77
6) chlorodifluoromethane	4.153	51	6222	1.77	ug/L		90
7) dichlorodifluoromethane	4.132	85	9161	1.99	ug/L		87
8) chloromethane	4.472	50	7497	1.73	ug/L		98
9) vinyl chloride	4.771	62	8789	1.80	ug/L		89
10) bromomethane	5.497	94	4783	1.91	ug/L		95
11) chloroethane	5.722	64	3457	1.80	ug/L		91
12) trichlorofluoromethane	6.293	101	7607	1.91	ug/L		95
13) vinyl bromide	6.109	106	6958	1.82	ug/L		95
14) ethyl ether	6.732	74	1463	1.86	ug/L		90
15) 2-chloropropane	6.978	43	6940	1.79	ug/L		90
16) acrolein	6.999	56	526	1.77	ug/L		96
17) freon 113	7.244	151	3573	1.96	ug/L		90
18) 1,1-dichloroethene	7.208	96	3275	1.81	ug/L		85
19) acetone	7.234	58	1024	8.26	ug/L	#	69
20) acetonitrile	7.720	41	6844	27.95	ug/L		95
21) iodomethane	7.495	142	7114	1.83	ug/L		91
22) carbon disulfide	7.658	76	13334	1.82	ug/L		97
23) methylene chloride	8.039	84	3783	1.79	ug/L		87
24) methyl acetate	7.773	43	2333	2.10	ug/L		63
25) methyl tert butyl ether	8.458	73	9977	1.70	ug/L		96
26) trans-1,2-dichloroethene	8.494	96	3534	1.83	ug/L		94
27) hexane	8.897	56	2313	1.84	ug/L		91
28) di-isopropyl ether	9.138	45	13677	1.86	ug/L		99
29) 2-butanone	9.865	72	929	7.11	ug/L		96
30) 1,1-dichloroethane	9.148	63	6166	1.85	ug/L		95
31) chloroprene	9.253	53	4866	1.81	ug/L		97
34) ethyl tert-butyl ether	9.650	59	11512	1.78	ug/L		96
36) 2,2-dichloropropane	9.964	77	6771	1.86	ug/L		95
37) cis-1,2-dichloroethene	9.928	96	3707	1.78	ug/L		88
38) propionitrile	9.943	54	3920	5.77	ug/L		96
41) bromochloromethane	10.252	128	1602	1.74	ug/L		94
42) tetrahydrofuran	10.273	42	996	2.20	ug/L	#	36
43) chloroform	10.356	83	5873	1.87	ug/L		98
44) tert-Butyl Formate	10.388	59	3705	1.84	ug/L		92
46) 1,1,1-trichloroethane	10.623	97	5802	1.71	ug/L		95
47) cyclohexane	10.743	84	6334	2.06	ug/L		93
49) 1,1-dichloropropene	10.806	75	3888	1.74	ug/L		98
50) carbon tetrachloride	10.838	117	5207	1.75	ug/L		96
51) tert-amyl alcohol	10.958	73	920	6.37	ug/L		91
56) 2,2,4-Trimethylpentane	11.172	57	12979	1.72	ug/L		96
57) benzene	11.062	78	11589	1.75	ug/L		94
58) tert-amyl methyl ether	11.151	73	10544	1.84	ug/L		92
59) heptane	11.340	57	2470	1.86	ug/L		91
60) 1,2-dichloroethane	11.099	62	3561	1.85	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135072.D
Acq On : 2 Mar 2017 6:09 pm
Operator : [redacted]
Sample : 1c5999-2
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 03 11:48:50 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
61)	ethyl acrylate	11.826	55	2871	1.95	ug/L		81
62)	trichloroethene	11.837	95	2853	3.48	ug/L		91
63)	2-chloroethyl vinyl ether	12.668	63	8553	4.77	ug/L		97
65)	methylcyclohexane	12.145	83	6843	1.87	ug/L		93
66)	1,2-dichloropropane	12.140	63	3172	1.82	ug/L		89
67)	dibromomethane	12.250	93	1769	1.91	ug/L		87
68)	bromodichloromethane	12.417	83	3784	1.82	ug/L		98
69)	2-nitropropane	12.621	41	675	1.74	ug/L		68
70)	epichlorohydrin	12.757	57	1503	5.59	ug/L		79
71)	cis-1,3-dichloropropene	12.898	75	4505	1.75	ug/L		95
72)	4-methyl-2-pentanone	13.008	58	5821	10.15	ug/L		91
73)	isoamyl alcohol	13.013	70	1544	9.65	ug/L	#	82
76)	toluene	13.306	92	7189	1.83	ug/L		99
77)	ethyl methacrylate	13.500	69	3286	1.79	ug/L		96
78)	trans-1,3-dichloropropene	13.510	75	3772	1.77	ug/L		89
79)	1,1,2-trichloroethane	13.751	83	1857	1.72	ug/L		87
80)	tetrachloroethene	13.903	164	2564	1.82	ug/L		81
81)	2-hexanone	13.918	58	5114	10.57	ug/L		97
82)	1,3-dichloropropane	13.939	76	4057	1.90	ug/L		86
83)	butyl acetate	14.007	56	1793	1.94	ug/L	#	73
84)	3,3-Dimethyl-1-Butanol	14.112	69	2718	6.14	ug/L		95
85)	dibromochloromethane	14.206	129	2730	1.70	ug/L		97
86)	1,2-dibromoethane	14.373	107	2479	1.81	ug/L		96
87)	n-butyl ether	14.839	57	13631	1.73	ug/L		84
88)	chlorobenzene	14.886	112	8249	1.81	ug/L		96
89)	1,1,1,2-tetrachloroethane	14.959	131	3397	1.63	ug/L		93
90)	ethylbenzene	14.954	91	14388	1.77	ug/L		96
91)	m,p-xylene	15.079	106	10839	2.81	ug/L		99
92)	o-xylene	15.513	91	12761	1.74	ug/L		94
93)	styrene	15.524	104	9339	1.78	ug/L		98
94)	butyl acrylate	15.325	55	5831	1.91	ug/L		97
95)	isopropylbenzene	15.885	105	16993	1.73	ug/L		98
96)	bromoform	15.780	173	2032	1.76	ug/L		98
97)	cis-1,4-dichloro-2-butene	15.927	88	973	2.03	ug/L	#	83
101)	1,1,2,2-tetrachloroethane	16.183	83	3951	1.79	ug/L		97
102)	trans-1,4-dichloro-2-b...	16.220	53	883	1.75	ug/L		88
103)	1,2,3-trichloropropane	16.277	110	859	1.63	ug/L	#	78
104)	bromobenzene	16.303	156	4103	1.76	ug/L		96
105)	n-propylbenzene	16.329	91	19579	1.71	ug/L		98
106)	2-chlorotoluene	16.476	126	4048	1.71	ug/L	#	87
107)	4-chlorotoluene	16.596	91	11731	1.78	ug/L		97
108)	1,3,5-trimethylbenzene	16.497	105	14871	1.63	ug/L		97
109)	tert-butylbenzene	16.863	119	11913	1.57	ug/L		96
110)	1,2,4-trimethylbenzene	16.915	105	15529	1.66	ug/L		97
111)	sec-butylbenzene	17.088	105	19987	1.61	ug/L		97
112)	p-isopropyltoluene	17.224	119	18099	1.63	ug/L		98
113)	1,3-dichlorobenzene	17.276	146	8973	1.71	ug/L		89
114)	1,4-dichlorobenzene	17.375	146	9328	1.78	ug/L		93
115)	1,2-dichlorobenzene	17.762	146	9938	1.79	ug/L		97
116)	Benzyl Chloride	17.464	91	8442	1.86	ug/L		96
117)	n-butylbenzene	17.653	92	9782	1.68	ug/L		97
118)	hexachloroethane	18.071	201	2880	1.51	ug/L		93
119)	1,2-dibromo-3-chloropr...	18.536	157	1166	1.77	ug/L		93
120)	1,3,5-trichlorobenzene	18.720	180	10969	1.73	ug/L		99
122)	1,2,4-trichlorobenzene	19.342	180	10112	1.64	ug/L		97
123)	hexachlorobutadiene	19.447	225	5207	1.68	ug/L		89
124)	naphthalene	19.635	128	18776	1.63	ug/L		98
125)	1,2,3-trichlorobenzene	19.849	180	8725	1.61	ug/L		93

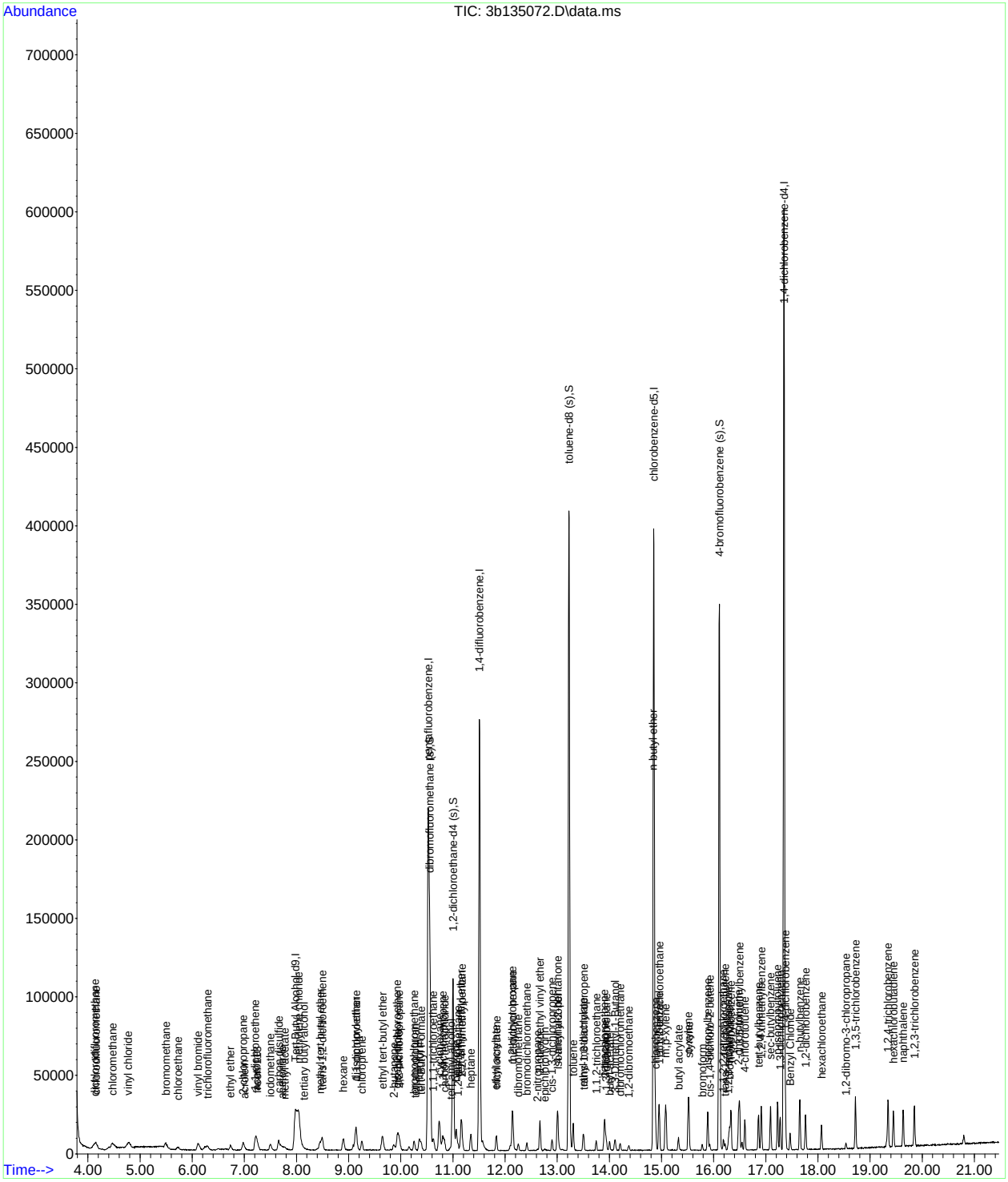
(#) = qualifier out of range (m) = manual integration (+) = signals summed

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Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135072.D
Acq On : 2 Mar 2017 6:09 pm
Operator : [redacted]
Sample : 1c5999-2
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 03 11:48:50 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135073.D
Acq On : 2 Mar 2017 6:38 pm
Operator : [redacted]
Sample : 1c5999-5
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 03 11:37:11 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.982	65	100622	500.00	ug/L		-0.02
5) pentafluorobenzene	10.524	168	165215	50.00	ug/L		0.00
53) 1,4-difluorobenzene	11.507	114	230877	50.00	ug/L		0.00
74) chlorobenzene-d5	14.849	117	222038	50.00	ug/L		0.00
99) 1,4-dichlorobenzene-d4	17.349	152	160190	50.00	ug/L		0.00
System Monitoring Compounds							
45) dibromofluoromethane (s)	10.555	113	76903	49.60	ug/L		0.00
Spiked Amount 50.000	Range 70 - 122		Recovery = 99.20%				
54) 1,2-dichloroethane-d4 (s)	11.000	65	75881	49.89	ug/L		0.00
Spiked Amount 50.000	Range 68 - 124		Recovery = 99.78%				
75) toluene-d8 (s)	13.228	98	277358	49.60	ug/L		0.00
Spiked Amount 50.000	Range 77 - 125		Recovery = 99.20%				
100) 4-bromofluorobenzene (s)	16.110	95	115905	49.39	ug/L		0.00
Spiked Amount 50.000	Range 72 - 130		Recovery = 98.78%				
Target Compounds							Qvalue
3) tertiary butyl alcohol	8.113	59	5659	29.62	ug/L		77
4) 1,4-dioxane	12.182	88	2466	134.31	ug/L		82
6) chlorodifluoromethane	4.143	51	18368	5.40	ug/L		95
7) dichlorodifluoromethane	4.133	85	24295	5.46	ug/L		98
8) chloromethane	4.467	50	20439	4.90	ug/L		98
9) vinyl chloride	4.797	62	24864	5.27	ug/L		88
10) bromomethane	5.492	94	12210	5.05	ug/L		95
11) chloroethane	5.723	64	9930	5.37	ug/L		98
12) trichlorofluoromethane	6.293	101	21341	5.55	ug/L		96
13) vinyl bromide	6.115	106	19071	5.17	ug/L		95
14) ethyl ether	6.732	74	4098	5.41	ug/L		88
15) 2-chloropropane	6.973	43	18774	5.02	ug/L		98
16) acrolein	7.004	56	1348	4.72	ug/L		95
17) freon 113	7.234	151	10558	5.99	ug/L		94
18) 1,1-dichloroethene	7.208	96	9304	5.33	ug/L		97
19) acetone	7.224	58	2866	23.98	ug/L		85
20) acetonitrile	7.710	41	17563	74.37	ug/L		90
21) iodomethane	7.496	142	18919	5.04	ug/L		97
22) carbon disulfide	7.658	76	36147	5.10	ug/L		98
23) methylene chloride	8.045	84	10181	5.00	ug/L		93
24) methyl acetate	7.768	43	6213	5.81	ug/L		90
25) methyl tert butyl ether	8.463	73	28194	4.98	ug/L		96
26) trans-1,2-dichloroethene	8.495	96	9056	4.87	ug/L		93
27) hexane	8.892	56	6837	5.65	ug/L		93
28) di-isopropyl ether	9.133	45	36030	5.08	ug/L		95
29) 2-butanone	9.854	72	2942	23.36	ug/L	#	83
30) 1,1-dichloroethane	9.143	63	15952	4.95	ug/L		96
31) chloroprene	9.253	53	13405	5.17	ug/L		97
32) acrylonitrile	8.385	53	2976	4.94	ug/L		91
33) vinyl acetate	9.075	86	974	4.33	ug/L	#	66
34) ethyl tert-butyl ether	9.650	59	31479	5.05	ug/L		99
35) ethyl acetate	9.886	45	1000	5.43	ug/L		92
36) 2,2-dichloropropane	9.964	77	17714	5.04	ug/L		93
37) cis-1,2-dichloroethene	9.933	96	9923	4.93	ug/L		89
38) propionitrile	9.938	54	10510	16.04	ug/L		97
39) methyl acrylate	9.970	85	786	4.46	ug/L	#	42
40) methacrylonitrile	10.158	67	2646	4.92	ug/L		91
41) bromochloromethane	10.252	128	4646	5.22	ug/L		94
42) tetrahydrofuran	10.273	42	2374	5.44	ug/L		96
43) chloroform	10.351	83	15080	4.98	ug/L		92
44) tert-Butyl Formate	10.388	59	9900	5.10	ug/L		94
46) 1,1,1-trichloroethane	10.618	97	16251	4.95	ug/L		95
47) cyclohexane	10.744	84	15739	5.32	ug/L		90
49) 1,1-dichloropropene	10.801	75	11004	5.10	ug/L		91
50) carbon tetrachloride	10.833	117	14897	5.18	ug/L		93

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Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135073.D
Acq On : 2 Mar 2017 6:38 pm
Operator : [redacted]
Sample : 1c5999-5
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 03 11:37:11 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51)	tert-amyl alcohol	10.953	73	2737	19.65	ug/L		91
52)	isopropyl acetate	10.979	87	1549	3.47	ug/L	#	40
55)	n-butyl alcohol	11.565	56	12220	21.50	ug/L		96
56)	2,2,4-Trimethylpentane	11.167	57	36965	4.99	ug/L		95
57)	benzene	11.063	78	32304	4.97	ug/L		100
58)	tert-amyl methyl ether	11.152	73	28379	5.07	ug/L		96
59)	heptane	11.340	57	7387	5.68	ug/L		95
60)	1,2-dichloroethane	11.094	62	9700	5.14	ug/L		96
61)	ethyl acrylate	11.821	55	7313	5.06	ug/L		99
62)	trichloroethene	11.832	95	7610	9.46	ug/L		97
63)	2-chloroethyl vinyl ether	12.668	63	23726	13.51	ug/L		99
64)	methyl methacrylate	12.103	100	1698	5.02	ug/L		95
65)	methylcyclohexane	12.145	83	18926	5.27	ug/L		97
66)	1,2-dichloropropane	12.140	63	8594	5.03	ug/L		94
67)	dibromomethane	12.250	93	4641	5.11	ug/L		95
68)	bromodichloromethane	12.417	83	10139	4.98	ug/L		100
69)	2-nitropropane	12.621	41	1774	4.68	ug/L		97
70)	epichlorohydrin	12.757	57	3678	13.95	ug/L		96
71)	cis-1,3-dichloropropene	12.904	75	12648	5.02	ug/L		99
72)	4-methyl-2-pentanone	13.003	58	12960	23.07	ug/L		99
73)	isoamyl alcohol	13.008	70	5040	32.17	ug/L	#	87
76)	toluene	13.306	92	18978	4.90	ug/L		94
77)	ethyl methacrylate	13.495	69	9227	5.08	ug/L		92
78)	trans-1,3-dichloropropene	13.510	75	10699	5.09	ug/L		94
79)	1,1,2-trichloroethane	13.746	83	5390	5.07	ug/L		94
80)	tetrachloroethene	13.897	164	7157	5.15	ug/L		92
81)	2-hexanone	13.913	58	11443	23.97	ug/L		94
82)	1,3-dichloropropane	13.939	76	10477	4.96	ug/L		93
83)	butyl acetate	13.997	56	5011	5.50	ug/L	#	84
84)	3,3-Dimethyl-1-Butanol	14.107	69	7619	17.43	ug/L		95
85)	dibromochloromethane	14.206	129	7725	4.88	ug/L		95
86)	1,2-dibromoethane	14.373	107	7116	5.26	ug/L		90
87)	n-butyl ether	14.834	57	38291	4.93	ug/L		97
88)	chlorobenzene	14.886	112	23070	5.14	ug/L		95
89)	1,1,1,2-tetrachloroethane	14.959	131	10339	5.02	ug/L		97
90)	ethylbenzene	14.949	91	40584	5.05	ug/L		100
91)	m,p-xylene	15.079	106	31185	8.19	ug/L		97
92)	o-xylene	15.514	91	35702	4.92	ug/L		98
93)	styrene	15.524	104	26023	5.02	ug/L		97
94)	butyl acrylate	15.325	55	15503	5.14	ug/L		97
95)	isopropylbenzene	15.885	105	47977	4.95	ug/L		100
96)	bromoform	15.780	173	5810	5.09	ug/L		96
97)	cis-1,4-dichloro-2-butene	15.922	88	2431	5.15	ug/L		89
101)	1,1,2,2-tetrachloroethane	16.188	83	10505	4.84	ug/L		95
102)	trans-1,4-dichloro-2-b...	16.220	53	2535	5.10	ug/L		99
103)	1,2,3-trichloropropane	16.282	110	2514	4.83	ug/L	#	82
104)	bromobenzene	16.309	156	11771	5.13	ug/L		96
105)	n-propylbenzene	16.330	91	54878	4.86	ug/L		99
106)	2-chlorotoluene	16.476	126	11145	4.79	ug/L		99
107)	4-chlorotoluene	16.596	91	32564	5.02	ug/L		99
108)	1,3,5-trimethylbenzene	16.497	105	42587	4.74	ug/L		98
109)	tert-butylbenzene	16.858	119	34628	4.65	ug/L		94
110)	1,2,4-trimethylbenzene	16.915	105	45224	4.90	ug/L		100
111)	sec-butylbenzene	17.088	105	57575	4.72	ug/L		100
112)	p-isopropyltoluene	17.224	119	52983	4.85	ug/L		98
113)	1,3-dichlorobenzene	17.276	146	26235	5.08	ug/L		97
114)	1,4-dichlorobenzene	17.376	146	25886	5.00	ug/L		97
115)	1,2-dichlorobenzene	17.763	146	26878	4.90	ug/L		97
116)	Benzyl Chloride	17.464	91	23290	5.21	ug/L		95
117)	n-butylbenzene	17.653	92	27856	4.86	ug/L		99
118)	hexachloroethane	18.066	201	8516	4.53	ug/L		95
119)	1,2-dibromo-3-chloropr...	18.542	157	3274	5.05	ug/L		91
120)	1,3,5-trichlorobenzene	18.720	180	30249	4.84	ug/L		97

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Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135073.D
Acq On : 2 Mar 2017 6:38 pm
Operator : [redacted]
Sample : 1c5999-5
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 03 11:37:11 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

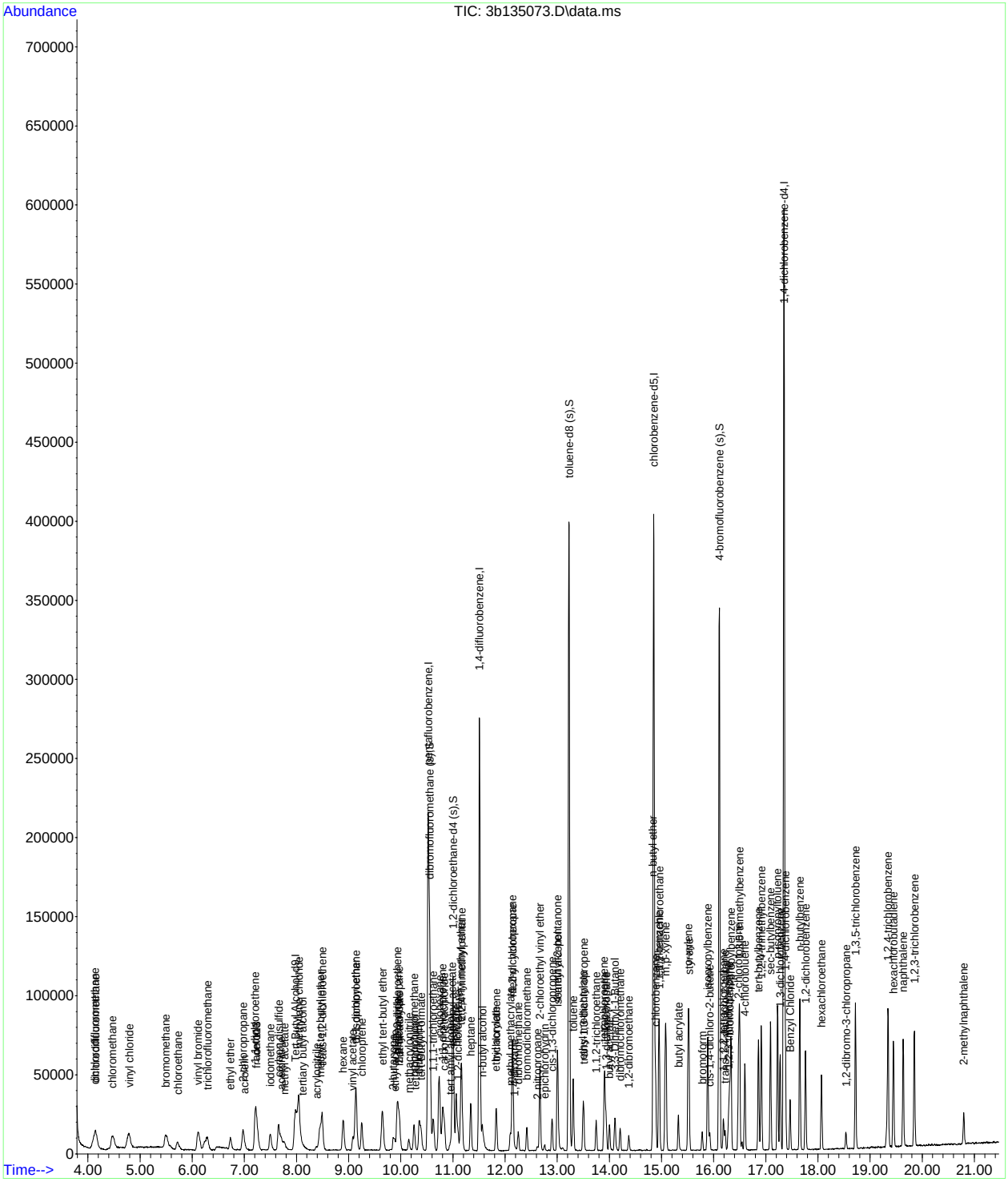
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
122) 1,2,4-trichlorobenzene	19.342	180	29150	4.79	ug/L	97
123) hexachlorobutadiene	19.447	225	15173	4.96	ug/L	97
124) naphthalene	19.635	128	54359	4.79	ug/L	99
125) 1,2,3-trichlorobenzene	19.849	180	25115	4.72	ug/L	99
126) 2-methylnaphthalene	20.796	142	10814	2.35	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135073.D
Acq On : 2 Mar 2017 6:38 pm
Operator : [redacted]
Sample : 1c5999-5
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 03 11:37:11 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135074.D
Acq On : 2 Mar 2017 7:06 pm
Operator : [redacted]
Sample : 1c5999-10
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 03 11:37:18 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.977	65	96409	500.00	ug/L		-0.02
5) pentafluorobenzene	10.529	168	162650	50.00	ug/L		0.00
53) 1,4-difluorobenzene	11.507	114	229352	50.00	ug/L		0.00
74) chlorobenzene-d5	14.849	117	217822	50.00	ug/L		0.00
99) 1,4-dichlorobenzene-d4	17.349	152	153398	50.00	ug/L		0.00
System Monitoring Compounds							
45) dibromofluoromethane (s)	10.555	113	75278	49.32	ug/L		0.00
Spiked Amount 50.000	Range 70 - 122		Recovery = 98.64%				
54) 1,2-dichloroethane-d4 (s)	11.000	65	75136	49.73	ug/L		0.00
Spiked Amount 50.000	Range 68 - 124		Recovery = 99.46%				
75) toluene-d8 (s)	13.223	98	275830	50.28	ug/L		0.00
Spiked Amount 50.000	Range 77 - 125		Recovery = 100.56%				
100) 4-bromofluorobenzene (s)	16.110	95	111695	49.71	ug/L		0.00
Spiked Amount 50.000	Range 72 - 130		Recovery = 99.42%				
Target Compounds							Qvalue
3) tertiary butyl alcohol	8.118	59	11005	60.11	ug/L		91
4) 1,4-dioxane	12.187	88	5097	289.74	ug/L		79
6) chlorodifluoromethane	4.148	51	36498	10.91	ug/L		98
7) dichlorodifluoromethane	4.138	85	46225	10.55	ug/L		93
8) chloromethane	4.473	50	39068	9.51	ug/L		99
9) vinyl chloride	4.792	62	46240	9.96	ug/L		99
10) bromomethane	5.498	94	23145	9.72	ug/L		99
11) chloroethane	5.712	64	18720	10.28	ug/L		98
12) trichlorofluoromethane	6.282	101	39228	10.36	ug/L		96
13) vinyl bromide	6.110	106	36422	10.03	ug/L		97
14) ethyl ether	6.732	74	8697	11.67	ug/L		95
15) 2-chloropropane	6.978	43	38764	10.52	ug/L		98
16) acrolein	6.993	56	2920	10.38	ug/L		90
17) freon 113	7.239	151	20775	11.98	ug/L		96
18) 1,1-dichloroethene	7.213	96	19217	11.18	ug/L		92
19) acetone	7.218	58	6434	54.69	ug/L		88
20) acetonitrile	7.705	41	33107	142.40	ug/L		96
21) iodomethane	7.496	142	40344	10.91	ug/L		98
22) carbon disulfide	7.652	76	75483	10.83	ug/L		99
23) methylene chloride	8.040	84	21262	10.61	ug/L		100
24) methyl acetate	7.762	43	11798	11.21	ug/L		96
25) methyl tert butyl ether	8.458	73	60187	10.80	ug/L		97
26) trans-1,2-dichloroethene	8.495	96	19688	10.75	ug/L		94
27) hexane	8.897	56	12957	10.87	ug/L		98
28) di-isopropyl ether	9.138	45	72720	10.41	ug/L		98
29) 2-butanone	9.854	72	7022	56.64	ug/L	#	88
30) 1,1-dichloroethane	9.138	63	35086	11.06	ug/L		98
31) chloroprene	9.248	53	26808	10.50	ug/L		98
32) acrylonitrile	8.385	53	6931	11.69	ug/L		96
33) vinyl acetate	9.086	86	2465	11.14	ug/L	#	78
34) ethyl tert-butyl ether	9.645	59	64350	10.48	ug/L		99
35) ethyl acetate	9.886	45	1934	10.67	ug/L	#	64
36) 2,2-dichloropropane	9.959	77	37855	10.94	ug/L		98
37) cis-1,2-dichloroethene	9.928	96	21040	10.62	ug/L		95
38) propionitrile	9.938	54	23314	36.15	ug/L		98
39) methyl acrylate	9.975	85	1819	10.49	ug/L	#	93
40) methacrylonitrile	10.153	67	5945	11.22	ug/L		97
41) bromochloromethane	10.252	128	9927	11.33	ug/L		94
42) tetrahydrofuran	10.268	42	4735	11.01	ug/L		97
43) chloroform	10.351	83	31401	10.53	ug/L		99
44) tert-Butyl Formate	10.388	59	19880	10.41	ug/L		97
46) 1,1,1-trichloroethane	10.623	97	35374	10.95	ug/L		97
47) cyclohexane	10.744	84	30844	10.59	ug/L		90
49) 1,1-dichloropropene	10.801	75	23853	11.22	ug/L		99
50) carbon tetrachloride	10.832	117	31916	11.28	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135074.D
Acq On : 2 Mar 2017 7:06 pm
Operator : [redacted]
Sample : ic5999-10
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 03 11:37:18 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51)	tert-amyl alcohol	10.948	73	5406	39.41	ug/L		90
52)	isopropyl acetate	10.974	87	2774	6.32	ug/L		95
55)	n-butyl alcohol	11.565	56	23745	42.05	ug/L		92
56)	2,2,4-Trimethylpentane	11.167	57	74579	10.14	ug/L		96
57)	benzene	11.063	78	70321	10.89	ug/L		99
58)	tert-amyl methyl ether	11.152	73	56299	10.12	ug/L		98
59)	heptane	11.345	57	14100	10.92	ug/L		97
60)	1,2-dichloroethane	11.099	62	20680	11.02	ug/L		98
61)	ethyl acrylate	11.821	55	16300	11.35	ug/L		99
62)	trichloroethene	11.831	95	17095	21.40	ug/L		95
63)	2-chloroethyl vinyl ether	12.668	63	48235	27.65	ug/L		99
64)	methyl methacrylate	12.098	100	3600	10.72	ug/L		94
65)	methylcyclohexane	12.145	83	37963	10.65	ug/L		96
66)	1,2-dichloropropane	12.135	63	18747	11.05	ug/L		98
67)	dibromomethane	12.250	93	10163	11.27	ug/L		92
68)	bromodichloromethane	12.417	83	21831	10.80	ug/L		94
69)	2-nitropropane	12.621	41	4035	10.71	ug/L		95
70)	epichlorohydrin	12.757	57	7191	27.46	ug/L		96
71)	cis-1,3-dichloropropene	12.898	75	27103	10.83	ug/L		100
72)	4-methyl-2-pentanone	13.003	58	30326	54.35	ug/L		98
73)	isoamyl alcohol	13.014	70	9821	63.11	ug/L	#	80
76)	toluene	13.306	92	42502	11.18	ug/L		99
77)	ethyl methacrylate	13.495	69	19222	10.79	ug/L		95
78)	trans-1,3-dichloropropene	13.510	75	22594	10.97	ug/L		91
79)	1,1,2-trichloroethane	13.746	83	11710	11.22	ug/L		97
80)	tetrachloroethene	13.897	164	15282	11.22	ug/L		97
81)	2-hexanone	13.913	58	25699	54.88	ug/L		97
82)	1,3-dichloropropane	13.939	76	22721	10.97	ug/L		99
83)	butyl acetate	14.002	56	9668	10.82	ug/L		91
84)	3,3-Dimethyl-1-Butanol	14.107	69	14879	34.69	ug/L		87
85)	dibromochloromethane	14.206	129	16966	10.91	ug/L		93
86)	1,2-dibromoethane	14.373	107	14346	10.81	ug/L		99
87)	n-butyl ether	14.834	57	83439	10.94	ug/L		98
88)	chlorobenzene	14.886	112	48304	10.98	ug/L		99
89)	1,1,1,2-tetrachloroethane	14.959	131	22069	10.92	ug/L		96
90)	ethylbenzene	14.949	91	86686	10.99	ug/L		99
91)	m,p-xylene	15.079	106	66234	17.74	ug/L		100
92)	o-xylene	15.514	91	77716	10.92	ug/L		100
93)	styrene	15.524	104	55483	10.90	ug/L		97
94)	butyl acrylate	15.320	55	31385	10.61	ug/L		99
95)	isopropylbenzene	15.885	105	103830	10.92	ug/L		96
96)	bromoform	15.780	173	12208	10.91	ug/L		99
97)	cis-1,4-dichloro-2-butene	15.922	88	5540	11.96	ug/L		93
101)	1,1,2,2-tetrachloroethane	16.188	83	22340	10.74	ug/L		96
102)	trans-1,4-dichloro-2-b...	16.220	53	5465	11.48	ug/L		91
103)	1,2,3-trichloropropane	16.282	110	5534	11.11	ug/L		96
104)	bromobenzene	16.303	156	24128	10.97	ug/L		94
105)	n-propylbenzene	16.329	91	118214	10.94	ug/L		100
106)	2-chlorotoluene	16.476	126	24455	10.97	ug/L		95
107)	4-chlorotoluene	16.596	91	67427	10.86	ug/L		98
108)	1,3,5-trimethylbenzene	16.497	105	93016	10.81	ug/L		99
109)	tert-butylbenzene	16.858	119	75405	10.56	ug/L		97
110)	1,2,4-trimethylbenzene	16.915	105	95386	10.79	ug/L		99
111)	sec-butylbenzene	17.088	105	127729	10.92	ug/L		99
112)	p-isopropyltoluene	17.224	119	114227	10.91	ug/L		99
113)	1,3-dichlorobenzene	17.276	146	53340	10.79	ug/L		98
114)	1,4-dichlorobenzene	17.376	146	53536	10.81	ug/L		98
115)	1,2-dichlorobenzene	17.763	146	56455	10.75	ug/L		98
116)	Benzyl Chloride	17.464	91	44079	10.30	ug/L		98
117)	n-butylbenzene	17.653	92	60012	10.93	ug/L		98
118)	hexachloroethane	18.071	201	19298	10.73	ug/L		96
119)	1,2-dibromo-3-chloropr...	18.537	157	6985	11.25	ug/L		96
120)	1,3,5-trichlorobenzene	18.720	180	65527	10.94	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135074.D
Acq On : 2 Mar 2017 7:06 pm
Operator : [redacted]
Sample : 1c5999-10
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 03 11:37:18 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) 2-ethylhexyl acrylate	19.316	70	6814	1.81	ug/L	91
122) 1,2,4-trichlorobenzene	19.342	180	63752	10.94	ug/L	98
123) hexachlorobutadiene	19.447	225	32709	11.17	ug/L	96
124) naphthalene	19.635	128	119541	10.99	ug/L	100
125) 1,2,3-trichlorobenzene	19.849	180	56008	10.98	ug/L	98
126) 2-methylnaphthalene	20.801	142	25221	5.73	ug/L	99

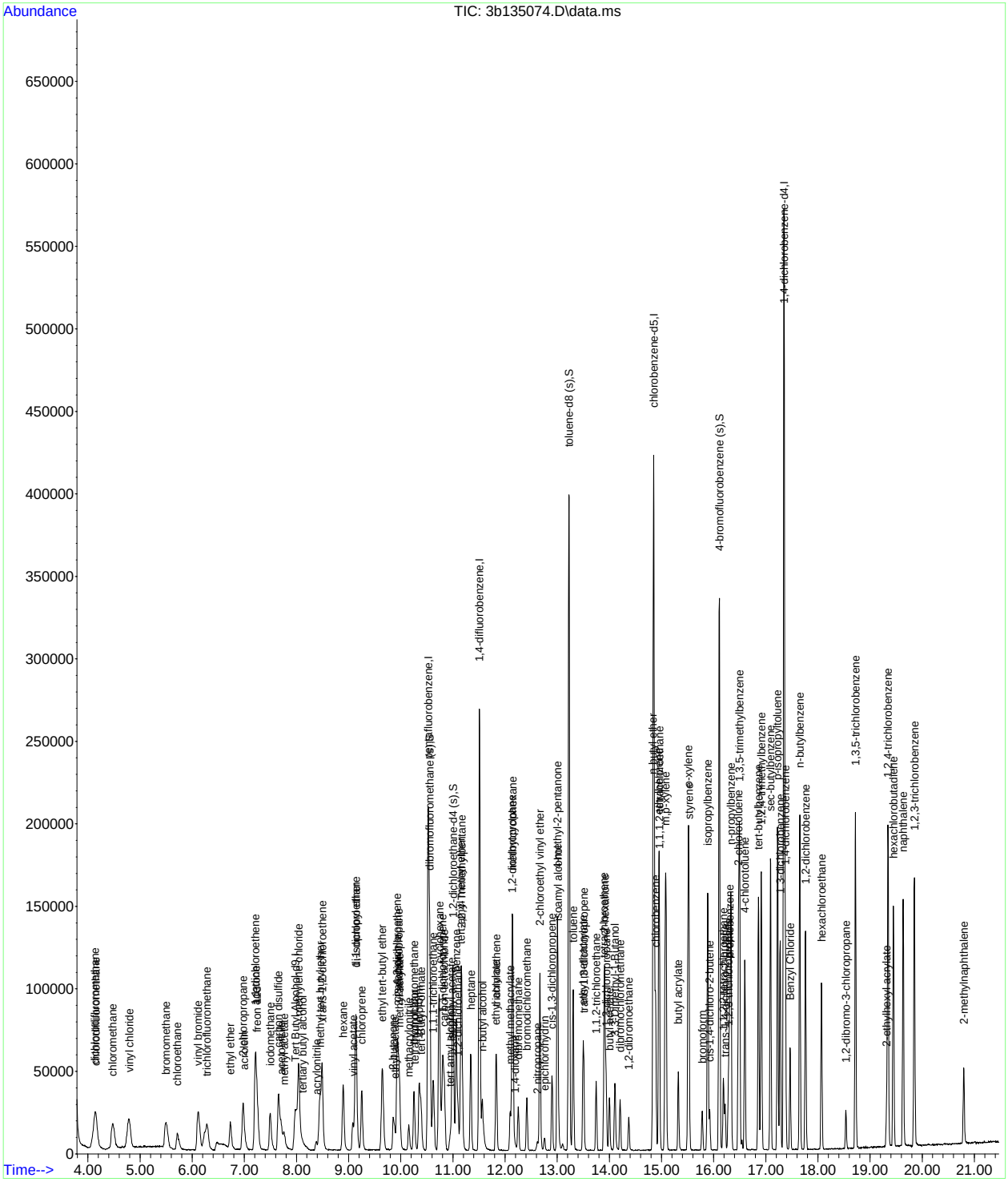
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135074.D
Acq On : 2 Mar 2017 7:06 pm
Operator : [redacted]
Sample : 1c5999-10
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 03 11:37:18 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135075.D
Acq On : 2 Mar 2017 7:34 pm
Operator : [redacted]
Sample : ic5999-20
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 03 11:37:24 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.987	65	90984	500.00	ug/L	-0.01
5) pentafluorobenzene	10.524	168	162370	50.00	ug/L	0.00
53) 1,4-difluorobenzene	11.507	114	227385	50.00	ug/L	0.00
74) chlorobenzene-d5	14.854	117	221150	50.00	ug/L	0.00
99) 1,4-dichlorobenzene-d4	17.349	152	151124	50.00	ug/L	0.00
System Monitoring Compounds						
45) dibromofluoromethane (s)	10.555	113	75807	49.75	ug/L	0.00
Spiked Amount 50.000	Range 70 - 122		Recovery = 99.50%			
54) 1,2-dichloroethane-d4 (s)	11.000	65	74768	49.91	ug/L	0.00
Spiked Amount 50.000	Range 68 - 124		Recovery = 99.82%			
75) toluene-d8 (s)	13.228	98	275184	49.41	ug/L	0.00
Spiked Amount 50.000	Range 77 - 125		Recovery = 98.82%			
100) 4-bromofluorobenzene (s)	16.110	95	111132	50.20	ug/L	0.00
Spiked Amount 50.000	Range 72 - 130		Recovery = 100.40%			
Target Compounds						Qvalue
3) tertiary butyl alcohol	8.128	59	22426	129.80	ug/L	95
4) 1,4-dioxane	12.182	88	10257	617.82	ug/L	88
6) chlorodifluoromethane	4.143	51	78363	23.46	ug/L	99
7) dichlorodifluoromethane	4.132	85	93001	21.27	ug/L	97
8) chloromethane	4.483	50	80955	19.74	ug/L	99
9) vinyl chloride	4.786	62	94816	20.46	ug/L	99
10) bromomethane	5.492	94	48365	20.34	ug/L	99
11) chloroethane	5.712	64	38248	21.04	ug/L	97
12) trichlorofluoromethane	6.282	101	80162	21.21	ug/L	99
13) vinyl bromide	6.120	106	74522	20.56	ug/L	96
14) ethyl ether	6.732	74	18015	24.20	ug/L	90
15) 2-chloropropane	6.978	43	80052	21.77	ug/L	98
16) acrolein	6.993	56	6030	21.47	ug/L	96
17) freon 113	7.239	151	44430	25.67	ug/L	96
18) 1,1-dichloroethene	7.208	96	38828	22.62	ug/L	95
19) acetone	7.218	58	14454	123.07	ug/L	97
20) acetonitrile	7.699	41	67348	290.17	ug/L	95
21) iodomethane	7.495	142	82372	22.32	ug/L	99
22) carbon disulfide	7.652	76	155137	22.29	ug/L	99
23) methylene chloride	8.039	84	43146	21.57	ug/L	97
24) methyl acetate	7.762	43	24304	23.13	ug/L	97
25) methyl tert butyl ether	8.453	73	124281	22.34	ug/L	97
26) trans-1,2-dichloroethene	8.489	96	39248	21.46	ug/L	97
27) hexane	8.892	56	26681	22.42	ug/L	95
28) di-isopropyl ether	9.138	45	153913	22.08	ug/L	99
29) 2-butanone	9.860	72	14747	119.15	ug/L	95
30) 1,1-dichloroethane	9.143	63	71936	22.72	ug/L	98
31) chloroprene	9.253	53	57445	22.54	ug/L	98
32) acrylonitrile	8.374	53	14084	23.81	ug/L	90
33) vinyl acetate	9.075	86	5714	25.87	ug/L #	86
34) ethyl tert-butyl ether	9.645	59	137157	22.38	ug/L	98
35) ethyl acetate	9.880	45	4321	23.89	ug/L #	49
36) 2,2-dichloropropane	9.964	77	77121	22.32	ug/L	99
37) cis-1,2-dichloroethene	9.928	96	43170	21.82	ug/L	99
38) propionitrile	9.933	54	46067	71.56	ug/L	98
39) methyl acrylate	9.969	85	4021	23.23	ug/L #	93
40) methacrylonitrile	10.152	67	12128	22.93	ug/L	94
41) bromochloromethane	10.252	128	19891	22.74	ug/L	93
42) tetrahydrofuran	10.268	42	9671	22.53	ug/L	99
43) chloroform	10.351	83	63765	21.43	ug/L	95
44) tert-Butyl Formate	10.383	59	43615	22.88	ug/L	97
46) 1,1,1-trichloroethane	10.623	97	72127	22.37	ug/L	98
47) cyclohexane	10.743	84	64427	22.16	ug/L	91
49) 1,1-dichloropropene	10.801	75	48292	22.75	ug/L	99
50) carbon tetrachloride	10.832	117	65430	23.17	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135075.D
Acq On : 2 Mar 2017 7:34 pm
Operator : [redacted]
Sample : 1c5999-20
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 03 11:37:24 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51)	tert-amyl alcohol	10.947	73	10574	77.23	ug/L		98
52)	isopropyl acetate	10.979	87	6073	13.86	ug/L	#	92
55)	n-butyl alcohol	11.565	56	48510	86.64	ug/L		97
56)	2,2,4-Trimethylpentane	11.167	57	163316	22.41	ug/L		97
57)	benzene	11.063	78	143660	22.44	ug/L		98
58)	tert-amyl methyl ether	11.157	73	122351	22.18	ug/L		99
59)	heptane	11.340	57	29217	22.82	ug/L		97
60)	1,2-dichloroethane	11.099	62	42526	22.87	ug/L		93
61)	ethyl acrylate	11.821	55	33492	23.53	ug/L		99
62)	trichloroethene	11.831	95	34512	43.58	ug/L		99
63)	2-chloroethyl vinyl ether	12.668	63	100820	58.30	ug/L		99
64)	methyl methacrylate	12.098	100	7308	21.94	ug/L		95
65)	methylcyclohexane	12.145	83	81912	23.17	ug/L		96
66)	1,2-dichloropropane	12.135	63	38188	22.70	ug/L		97
67)	dibromomethane	12.250	93	20024	22.40	ug/L		94
68)	bromodichloromethane	12.417	83	45255	22.58	ug/L		99
69)	2-nitropropane	12.621	41	7459	19.96	ug/L		92
70)	epichlorohydrin	12.757	57	14980	57.70	ug/L		97
71)	cis-1,3-dichloropropene	12.898	75	55872	22.52	ug/L		96
72)	4-methyl-2-pentanone	13.003	58	61098	110.44	ug/L		100
73)	isoamyl alcohol	13.008	70	20242	131.19	ug/L		94
76)	toluene	13.306	92	86096	22.31	ug/L		95
77)	ethyl methacrylate	13.495	69	40355	22.32	ug/L		97
78)	trans-1,3-dichloropropene	13.505	75	47602	22.76	ug/L		97
79)	1,1,2-trichloroethane	13.746	83	23918	22.58	ug/L		97
80)	tetrachloroethene	13.903	164	31888	23.05	ug/L		97
81)	2-hexanone	13.913	58	53517	112.56	ug/L		99
82)	1,3-dichloropropane	13.939	76	46561	22.15	ug/L		100
83)	butyl acetate	14.002	56	20425	22.51	ug/L		96
84)	3,3-Dimethyl-1-Butanol	14.106	69	29843	68.54	ug/L		98
85)	dibromochloromethane	14.206	129	35458	22.47	ug/L		94
86)	1,2-dibromoethane	14.373	107	30361	22.53	ug/L		96
87)	n-butyl ether	14.834	57	171834	22.20	ug/L		99
88)	chlorobenzene	14.886	112	98467	22.04	ug/L		96
89)	1,1,1,2-tetrachloroethane	14.959	131	45560	22.21	ug/L		95
90)	ethylbenzene	14.949	91	177999	22.22	ug/L		99
91)	m,p-xylene	15.079	106	137973	36.39	ug/L		98
92)	o-xylene	15.513	91	159926	22.14	ug/L		100
93)	styrene	15.524	104	114177	22.09	ug/L		98
94)	butyl acrylate	15.320	55	63560	21.15	ug/L		98
95)	isopropylbenzene	15.885	105	215575	22.34	ug/L		99
96)	bromoform	15.780	173	24919	21.94	ug/L		96
97)	cis-1,4-dichloro-2-butene	15.921	88	11542	24.53	ug/L		92
101)	1,1,2,2-tetrachloroethane	16.188	83	46278	22.58	ug/L		96
102)	trans-1,4-dichloro-2-b...	16.220	53	10781	22.99	ug/L		96
103)	1,2,3-trichloropropane	16.282	110	11241	22.91	ug/L		96
104)	bromobenzene	16.308	156	49030	22.63	ug/L		99
105)	n-propylbenzene	16.329	91	241367	22.68	ug/L		99
106)	2-chlorotoluene	16.476	126	50159	22.84	ug/L		99
107)	4-chlorotoluene	16.596	91	135860	22.21	ug/L		100
108)	1,3,5-trimethylbenzene	16.497	105	194775	22.98	ug/L		99
109)	tert-butylbenzene	16.858	119	161667	22.99	ug/L		96
110)	1,2,4-trimethylbenzene	16.915	105	197518	22.68	ug/L		99
111)	sec-butylbenzene	17.093	105	268680	23.33	ug/L		98
112)	p-isopropyltoluene	17.224	119	238669	23.14	ug/L		99
113)	1,3-dichlorobenzene	17.276	146	108988	22.37	ug/L		99
114)	1,4-dichlorobenzene	17.375	146	107354	21.99	ug/L		98
115)	1,2-dichlorobenzene	17.762	146	114319	22.09	ug/L		99
116)	Benzyl Chloride	17.464	91	92888	22.03	ug/L		98
117)	n-butylbenzene	17.653	92	122952	22.73	ug/L		99
118)	hexachloroethane	18.066	201	41604	23.47	ug/L		97
119)	1,2-dibromo-3-chloropr...	18.537	157	14177	23.18	ug/L		99
120)	1,3,5-trichlorobenzene	18.720	180	135369	22.94	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135075.D
Acq On : 2 Mar 2017 7:34 pm
Operator : [redacted]
Sample : 1c5999-20
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 03 11:37:24 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) 2-ethylhexyl acrylate	19.316	70	16109	4.35	ug/L	89
122) 1,2,4-trichlorobenzene	19.342	180	131339	22.88	ug/L	100
123) hexachlorobutadiene	19.447	225	66636	23.11	ug/L	99
124) naphthalene	19.635	128	251140	23.44	ug/L	99
125) 1,2,3-trichlorobenzene	19.849	180	116979	23.28	ug/L	100
126) 2-methylnaphthalene	20.796	142	59750	13.77	ug/L	99

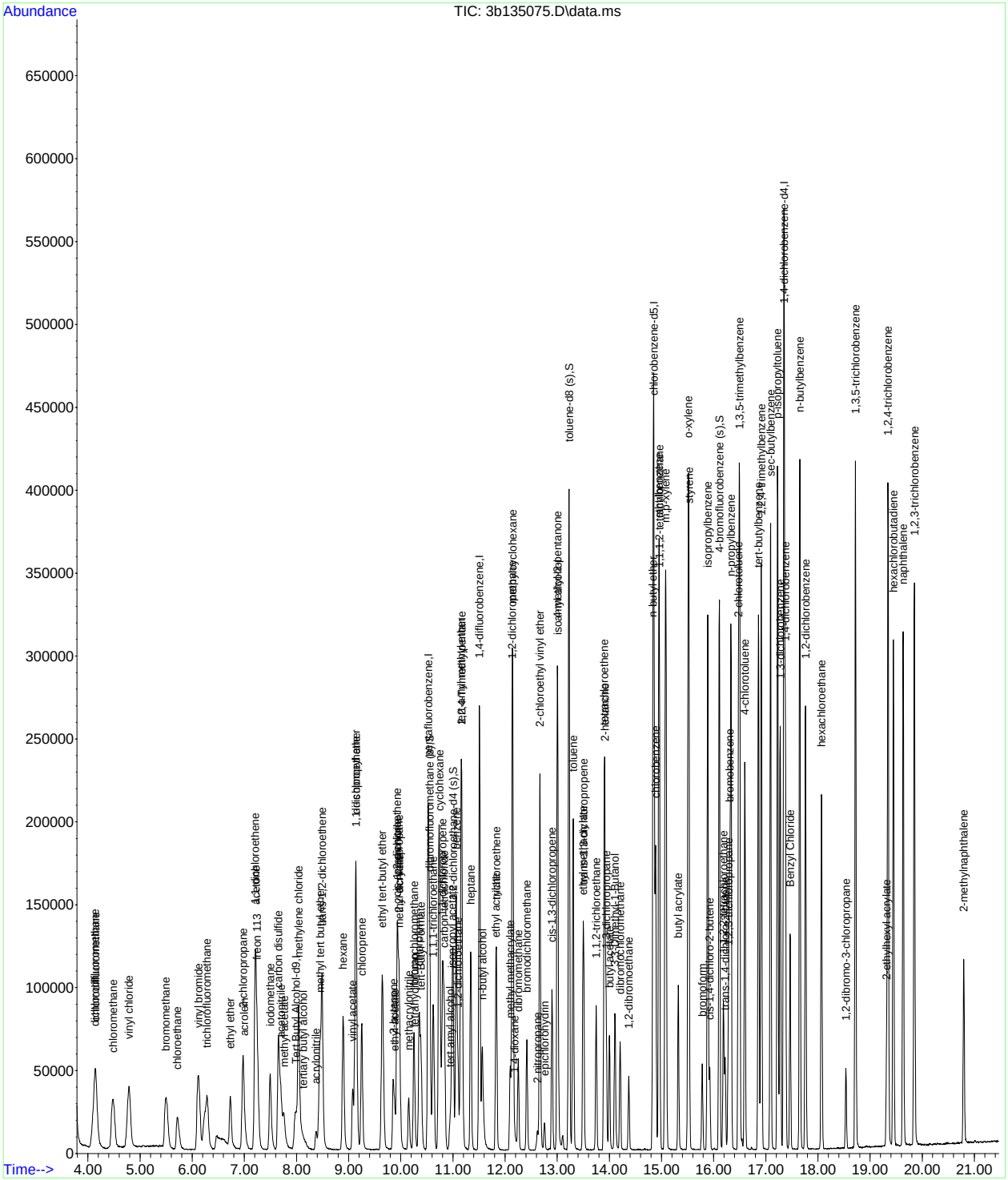
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135075.D
Acq On : 2 Mar 2017 7:34 pm
Operator : [redacted]
Sample : 1c5999-20
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 03 11:37:24 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135076.D
Acq On : 2 Mar 2017 8:03 pm
Operator : [redacted]
Sample : 1c5999-50
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 03 11:37:29 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.998	65	88533	500.00	ug/L	0.00
5) pentafluorobenzene	10.529	168	167900	50.00	ug/L	0.00
53) 1,4-difluorobenzene	11.507	114	236582	50.00	ug/L	0.00
74) chlorobenzene-d5	14.854	117	227676	50.00	ug/L	0.00
99) 1,4-dichlorobenzene-d4	17.349	152	154666	50.00	ug/L	0.00
System Monitoring Compounds						
45) dibromofluoromethane (s)	10.555	113	79977	50.76	ug/L	0.00
Spiked Amount 50.000	Range 70 - 122		Recovery = 101.52%			
54) 1,2-dichloroethane-d4 (s)	11.005	65	77728	49.87	ug/L	0.00
Spiked Amount 50.000	Range 68 - 124		Recovery = 99.74%			
75) toluene-d8 (s)	13.228	98	287562	50.15	ug/L	0.00
Spiked Amount 50.000	Range 77 - 125		Recovery = 100.30%			
100) 4-bromofluorobenzene (s)	16.110	95	115012	50.76	ug/L	0.00
Spiked Amount 50.000	Range 72 - 130		Recovery = 101.52%			
Target Compounds						Qvalue
3) tertiary butyl alcohol	8.139	59	51351	305.44	ug/L	100
4) 1,4-dioxane	12.182	88	23108	1430.42	ug/L	100
6) chlorodifluoromethane	4.153	51	190539	55.15	ug/L	100
7) dichlorodifluoromethane	4.143	85	235659	52.12	ug/L	100
8) chloromethane	4.499	50	226384	53.37	ug/L	100
9) vinyl chloride	4.802	62	254549	53.11	ug/L	100
10) bromomethane	5.513	94	128104	52.11	ug/L	100
11) chloroethane	5.722	64	99825	53.11	ug/L	100
12) trichlorofluoromethane	6.282	101	204264	52.28	ug/L	100
13) vinyl bromide	6.130	106	199162	53.15	ug/L	100
14) ethyl ether	6.732	74	44784	58.19	ug/L	100
15) 2-chloropropane	6.978	43	190157	50.01	ug/L	100
16) acrolein	6.993	56	14982	51.58	ug/L	100
17) freon 113	7.250	151	106902	59.73	ug/L	100
18) 1,1-dichloroethene	7.213	96	92427	52.07	ug/L	100
19) acetone	7.218	58	33757	277.97	ug/L	100
20) acetonitrile	7.699	41	158096	658.73	ug/L	100
21) iodomethane	7.495	142	200654	52.58	ug/L	100
22) carbon disulfide	7.658	76	371789	51.66	ug/L	100
23) methylene chloride	8.045	84	103867	50.21	ug/L	100
24) methyl acetate	7.762	43	59254	54.54	ug/L	100
25) methyl tert butyl ether	8.453	73	301777	52.45	ug/L	100
26) trans-1,2-dichloroethene	8.494	96	95154	50.31	ug/L	100
27) hexane	8.897	56	65693	53.38	ug/L	100
28) di-isopropyl ether	9.138	45	378109	52.45	ug/L	100
29) 2-butanone	9.854	72	35341	276.15	ug/L	100
30) 1,1-dichloroethane	9.143	63	171857	52.49	ug/L	100
31) chloroprene	9.253	53	142168	53.95	ug/L	100
32) acrylonitrile	8.374	53	33627	54.97	ug/L	100
33) vinyl acetate	9.075	86	12414	54.34	ug/L	100
34) ethyl tert-butyl ether	9.650	59	339114	53.51	ug/L	100
35) ethyl acetate	9.891	45	10574	56.53	ug/L	100
36) 2,2-dichloropropane	9.964	77	182372	51.04	ug/L	100
37) cis-1,2-dichloroethene	9.933	96	102827	50.26	ug/L	100
38) propionitrile	9.938	54	113882	171.07	ug/L	100
39) methyl acrylate	9.975	85	10138	56.64	ug/L	100
40) methacrylonitrile	10.152	67	28515	52.14	ug/L	100
41) bromochloromethane	10.252	128	49541	54.77	ug/L	100
42) tetrahydrofuran	10.262	42	23153	52.17	ug/L	100
43) chloroform	10.351	83	154508	50.21	ug/L	100
44) tert-Butyl Formate	10.388	59	108467	55.03	ug/L	100
46) 1,1,1-trichloroethane	10.623	97	174477	52.34	ug/L	100
47) cyclohexane	10.743	84	158562	52.74	ug/L	100
49) 1,1-dichloropropene	10.801	75	116454	53.06	ug/L	100
50) carbon tetrachloride	10.832	117	155072	53.10	ug/L	100

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135076.D
Acq On : 2 Mar 2017 8:03 pm
Operator : [redacted]
Sample : 1c5999-50
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 03 11:37:29 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) tert-amyl alcohol	10.953	73	24842	175.46	ug/L	100
52) isopropyl acetate	10.979	87	15444	34.08	ug/L	100
55) n-butyl alcohol	11.565	56	108711	186.62	ug/L	100
56) 2,2,4-Trimethylpentane	11.172	57	431203	56.86	ug/L	100
57) benzene	11.063	78	344023	51.65	ug/L	100
58) tert-amyl methyl ether	11.157	73	300966	52.45	ug/L	100
59) heptane	11.345	57	70531	52.95	ug/L	100
60) 1,2-dichloroethane	11.099	62	101845	52.63	ug/L	100
61) ethyl acrylate	11.821	55	79798	53.88	ug/L	100
62) trichloroethene	11.831	95	83032	100.78	ug/L	100
63) 2-chloroethyl vinyl ether	12.668	63	239952	133.35	ug/L	100
64) methyl methacrylate	12.098	100	18006	51.96	ug/L	100
65) methylcyclohexane	12.145	83	199288	54.19	ug/L	100
66) 1,2-dichloropropane	12.140	63	91775	52.44	ug/L	100
67) dibromomethane	12.255	93	48678	52.34	ug/L	100
68) bromodichloromethane	12.417	83	108869	52.21	ug/L	100
69) 2-nitropropane	12.626	41	17655	45.41	ug/L	100
70) epichlorohydrin	12.757	57	35886	132.86	ug/L	100
71) cis-1,3-dichloropropene	12.898	75	134663	52.18	ug/L	100
72) 4-methyl-2-pentanone	13.003	58	146230	254.05	ug/L	100
73) isoamyl alcohol	13.008	70	44373	276.41	ug/L	100
76) toluene	13.306	92	208152	52.39	ug/L	100
77) ethyl methacrylate	13.495	69	98106	52.70	ug/L	100
78) trans-1,3-dichloropropene	13.505	75	112662	52.32	ug/L	100
79) 1,1,2-trichloroethane	13.746	83	57686	52.89	ug/L	100
80) tetrachloroethene	13.903	164	75580	53.07	ug/L	100
81) 2-hexanone	13.913	58	123430	252.17	ug/L	100
82) 1,3-dichloropropane	13.939	76	111090	51.33	ug/L	100
83) butyl acetate	13.997	56	48614	52.03	ug/L	100
84) 3,3-Dimethyl-1-Butanol	14.107	69	65631	146.41	ug/L	100
85) dibromochloromethane	14.206	129	86927	53.50	ug/L	100
86) 1,2-dibromoethane	14.373	107	72586	52.33	ug/L	100
87) n-butyl ether	14.834	57	418596	52.52	ug/L	100
88) chlorobenzene	14.886	112	237063	51.55	ug/L	100
89) 1,1,1,2-tetrachloroethane	14.959	131	114546	54.25	ug/L	100
90) ethylbenzene	14.949	91	424380	51.46	ug/L	100
91) m,p-xylene	15.079	106	328911	84.27	ug/L	100
92) o-xylene	15.513	91	390178	52.46	ug/L	100
93) styrene	15.524	104	275083	51.70	ug/L	100
94) butyl acrylate	15.320	55	153440	49.60	ug/L	100
95) isopropylbenzene	15.885	105	528666	53.20	ug/L	100
96) bromoform	15.780	173	63161	54.01	ug/L	100
97) cis-1,4-dichloro-2-butene	15.927	88	28309	58.45	ug/L	100
101) 1,1,2,2-tetrachloroethane	16.188	83	113216	53.98	ug/L	100
102) trans-1,4-dichloro-2-b...	16.220	53	26260	54.71	ug/L	100
103) 1,2,3-trichloropropane	16.282	110	26529	52.83	ug/L	100
104) bromobenzene	16.308	156	118109	53.27	ug/L	100
105) n-propylbenzene	16.335	91	584390	53.64	ug/L	100
106) 2-chlorotoluene	16.476	126	122939	54.69	ug/L	100
107) 4-chlorotoluene	16.596	91	325546	52.00	ug/L	100
108) 1,3,5-trimethylbenzene	16.497	105	477039	55.00	ug/L	100
109) tert-butylbenzene	16.858	119	403358	56.04	ug/L	100
110) 1,2,4-trimethylbenzene	16.915	105	479876	53.84	ug/L	100
111) sec-butylbenzene	17.093	105	654165	55.49	ug/L	100
112) p-isopropyltoluene	17.224	119	582334	55.17	ug/L	100
113) 1,3-dichlorobenzene	17.276	146	259494	52.04	ug/L	100
114) 1,4-dichlorobenzene	17.375	146	257071	51.46	ug/L	100
115) 1,2-dichlorobenzene	17.762	146	277431	52.39	ug/L	100
116) Benzyl Chloride	17.464	91	224981	52.13	ug/L	100
117) n-butylbenzene	17.653	92	298896	53.99	ug/L	100
118) hexachloroethane	18.071	201	107429	59.22	ug/L	100
119) 1,2-dibromo-3-chloropr...	18.537	157	35201	56.23	ug/L	100
120) 1,3,5-trichlorobenzene	18.720	180	322502	53.39	ug/L	100

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135076.D
Acq On : 2 Mar 2017 8:03 pm
Operator : [redacted]
Sample : 1c5999-50
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 03 11:37:29 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

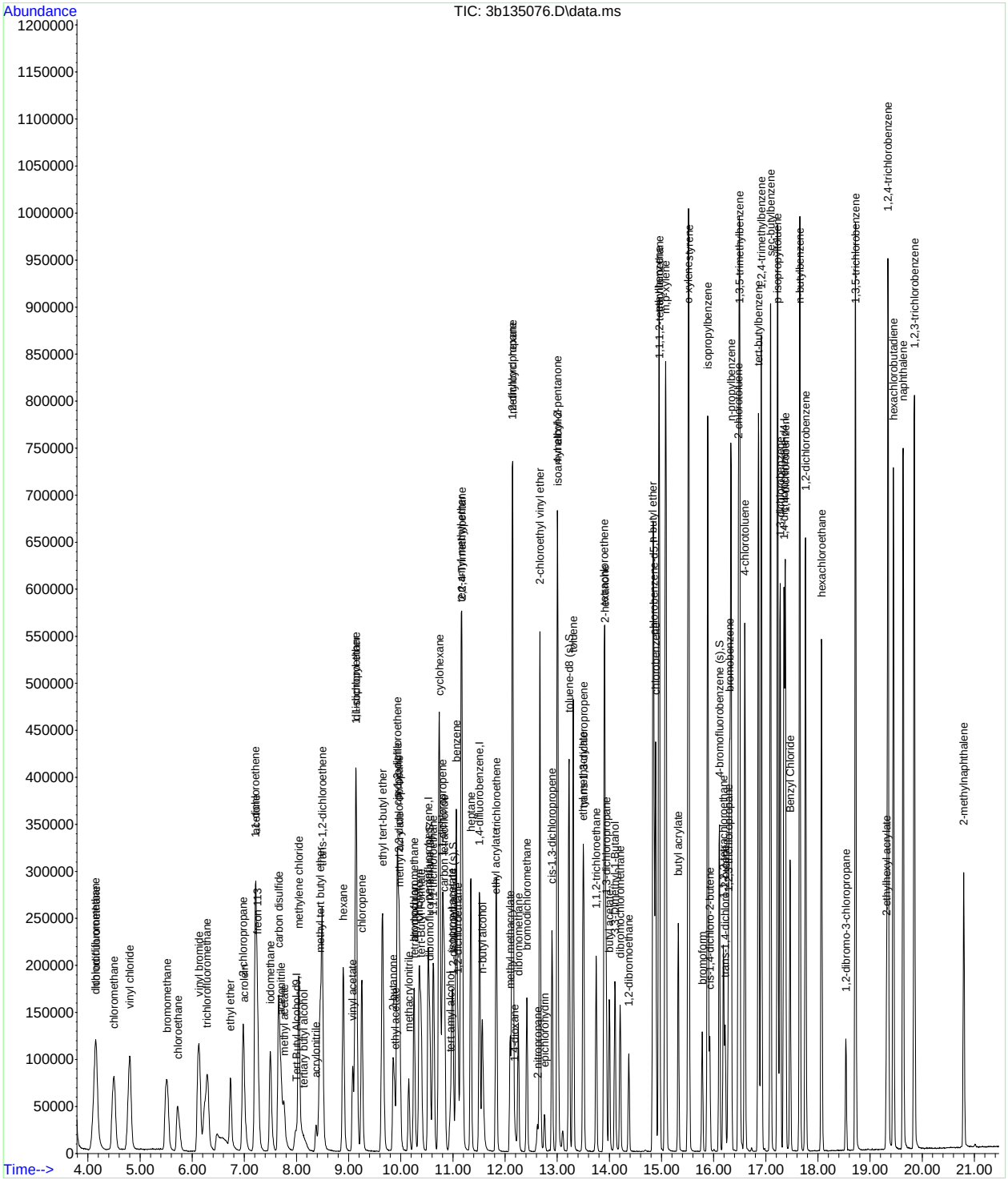
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) 2-ethylhexyl acrylate	19.316	70	43205	11.40	ug/L	100
122) 1,2,4-trichlorobenzene	19.342	180	317235	54.01	ug/L	100
123) hexachlorobutadiene	19.447	225	162244	54.97	ug/L	100
124) naphthalene	19.635	128	606584	55.33	ug/L	100
125) 1,2,3-trichlorobenzene	19.849	180	282380	54.91	ug/L	100
126) 2-methylnaphthalene	20.796	142	156765	35.29	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135076.D
Acq On : 2 Mar 2017 8:03 pm
Operator : [redacted]
Sample : 1c5999-50
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 03 11:37:29 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135077.D
Acq On : 2 Mar 2017 8:31 pm
Operator : [redacted]
Sample : ic5999-100
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 03 11:37:34 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.992	65	86077	500.00	ug/L	0.00
5) pentafluorobenzene	10.529	168	166302	50.00	ug/L	0.00
53) 1,4-difluorobenzene	11.512	114	237426	50.00	ug/L	0.00
74) chlorobenzene-d5	14.854	117	229330	50.00	ug/L	0.00
99) 1,4-dichlorobenzene-d4	17.349	152	153925	50.00	ug/L	0.00
System Monitoring Compounds						
45) dibromofluoromethane (s)	10.555	113	78357	50.21	ug/L	0.00
Spiked Amount 50.000	Range 70 - 122		Recovery = 100.42%			
54) 1,2-dichloroethane-d4 (s)	11.000	65	77782	49.73	ug/L	0.00
Spiked Amount 50.000	Range 68 - 124		Recovery = 99.46%			
75) toluene-d8 (s)	13.228	98	289564	50.14	ug/L	0.00
Spiked Amount 50.000	Range 77 - 125		Recovery = 100.28%			
100) 4-bromofluorobenzene (s)	16.110	95	115786	51.35	ug/L	0.00
Spiked Amount 50.000	Range 72 - 130		Recovery = 102.70%			
Target Compounds						Qvalue
3) tertiary butyl alcohol	8.118	59	98385	601.90	ug/L	98
4) 1,4-dioxane	12.187	88	44663	2843.59	ug/L	86
6) chlorodifluoromethane	4.153	51	381842	111.59	ug/L	100
7) dichlorodifluoromethane	4.143	85	491669	109.79	ug/L	99
8) chloromethane	4.504	50	488455	116.26	ug/L	97
9) vinyl chloride	4.802	62	525780	110.75	ug/L	99
10) bromomethane	5.513	94	269213	110.56	ug/L	98
11) chloroethane	5.722	64	202122	108.57	ug/L	98
12) trichlorofluoromethane	6.287	101	425100	109.84	ug/L	98
13) vinyl bromide	6.130	106	408550	110.08	ug/L	99
14) ethyl ether	6.732	74	89046	116.81	ug/L	98
15) 2-chloropropane	6.973	43	372989	99.04	ug/L	99
16) acrolein	6.993	56	29283	101.79	ug/L	97
17) freon 113	7.244	151	207922	117.29	ug/L	95
18) 1,1-dichloroethene	7.208	96	186075	105.84	ug/L	99
19) acetone	7.218	58	66249	550.76	ug/L	99
20) acetonitrile	7.699	41	301246	1267.25	ug/L	99
21) iodomethane	7.501	142	407419	107.80	ug/L	97
22) carbon disulfide	7.658	76	751457	105.41	ug/L	99
23) methylene chloride	8.045	84	212177	103.54	ug/L	96
24) methyl acetate	7.762	43	112179	104.24	ug/L	97
25) methyl tert butyl ether	8.453	73	602236	105.68	ug/L	97
26) trans-1,2-dichloroethene	8.495	96	188295	100.51	ug/L	99
27) hexane	8.897	56	126010	103.37	ug/L	97
28) di-isopropyl ether	9.138	45	734088	102.80	ug/L	98
29) 2-butanone	9.854	72	71962	567.70	ug/L	93
30) 1,1-dichloroethane	9.143	63	340852	105.10	ug/L	100
31) chloroprene	9.253	53	274063	105.01	ug/L	97
32) acrylonitrile	8.374	53	67503	111.40	ug/L	95
33) vinyl acetate	9.075	86	27118	119.85	ug/L	98
34) ethyl tert-butyl ether	9.650	59	675257	107.58	ug/L	99
35) ethyl acetate	9.886	45	20864	112.62	ug/L #	56
36) 2,2-dichloropropane	9.964	77	365971	103.40	ug/L	99
37) cis-1,2-dichloroethene	9.933	96	206438	101.88	ug/L	99
38) propionitrile	9.938	54	223937	339.63	ug/L	99
39) methyl acrylate	9.975	85	20180	113.82	ug/L #	88
40) methacrylonitrile	10.152	67	57823	106.75	ug/L	98
41) bromochloromethane	10.252	128	98949	110.43	ug/L	98
42) tetrahydrofuran	10.268	42	45371	103.22	ug/L	98
43) chloroform	10.351	83	312395	102.50	ug/L	98
44) tert-Butyl Formate	10.388	59	214519	109.88	ug/L	99
46) 1,1,1-trichloroethane	10.623	97	357203	108.18	ug/L	99
47) cyclohexane	10.743	84	315380	105.90	ug/L	99
49) 1,1-dichloropropene	10.806	75	235743	108.45	ug/L	99
50) carbon tetrachloride	10.832	117	314881	108.86	ug/L	98

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135077.D
Acq On : 2 Mar 2017 8:31 pm
Operator : [redacted]
Sample : ic5999-100
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 03 11:37:34 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51)	tert-amyl alcohol	10.953	73	46694	332.96	ug/L		95
52)	isopropyl acetate	10.984	87	30013	66.87	ug/L	#	92
55)	n-butyl alcohol	11.565	56	208982	357.48	ug/L		98
56)	2,2,4-Trimethylpentane	11.172	57	907701	119.26	ug/L		99
57)	benzene	11.063	78	707124	105.78	ug/L		99
58)	tert-amyl methyl ether	11.157	73	600197	104.22	ug/L		100
59)	heptane	11.345	57	137995	103.23	ug/L		99
60)	1,2-dichloroethane	11.099	62	206087	106.12	ug/L		98
61)	ethyl acrylate	11.821	55	159736	107.48	ug/L		99
62)	trichloroethene	11.831	95	171500	207.41	ug/L		99
63)	2-chloroethyl vinyl ether	12.668	63	476821	264.05	ug/L		99
64)	methyl methacrylate	12.098	100	36547	105.10	ug/L		95
65)	methylcyclohexane	12.150	83	400434	108.49	ug/L		99
66)	1,2-dichloropropane	12.140	63	188451	107.29	ug/L		99
67)	dibromomethane	12.255	93	99136	106.22	ug/L		100
68)	bromodichloromethane	12.417	83	225522	107.77	ug/L		99
69)	2-nitropropane	12.626	41	34473	88.35	ug/L		96
70)	epichlorohydrin	12.757	57	73435	270.92	ug/L		100
71)	cis-1,3-dichloropropene	12.904	75	275654	106.43	ug/L		97
72)	4-methyl-2-pentanone	13.003	58	288713	499.80	ug/L		100
73)	isoamyl alcohol	13.013	70	84591	525.07	ug/L	#	84
76)	toluene	13.306	92	429572	107.34	ug/L		98
77)	ethyl methacrylate	13.495	69	195945	104.50	ug/L		99
78)	trans-1,3-dichloropropene	13.510	75	231512	106.73	ug/L		90
79)	1,1,2-trichloroethane	13.746	83	118162	107.55	ug/L		98
80)	tetrachloroethene	13.903	164	156162	108.85	ug/L		99
81)	2-hexanone	13.913	58	241324	489.48	ug/L		100
82)	1,3-dichloropropane	13.939	76	225189	103.30	ug/L		95
83)	butyl acetate	14.002	56	93901	99.78	ug/L		96
84)	3,3-Dimethyl-1-Butanol	14.107	69	122547	271.41	ug/L		96
85)	dibromochloromethane	14.206	129	178188	108.88	ug/L		98
86)	1,2-dibromoethane	14.373	107	149670	107.12	ug/L		99
87)	n-butyl ether	14.834	57	847437	105.56	ug/L		99
88)	chlorobenzene	14.886	112	487258	105.19	ug/L		98
89)	1,1,1,2-tetrachloroethane	14.959	131	238241	112.02	ug/L		98
90)	ethylbenzene	14.949	91	875874	105.44	ug/L		100
91)	m,p-xylene	15.079	106	682012	173.49	ug/L		99
92)	o-xylene	15.513	91	814252	108.70	ug/L		100
93)	styrene	15.524	104	569867	106.33	ug/L		99
94)	butyl acrylate	15.320	55	299906	96.25	ug/L		100
95)	isopropylbenzene	15.885	105	1106253	110.53	ug/L		100
96)	bromoform	15.780	173	130867	111.10	ug/L		99
97)	cis-1,4-dichloro-2-butene	15.927	88	57620	118.11	ug/L		97
101)	1,1,2,2-tetrachloroethane	16.188	83	226961	108.73	ug/L		99
102)	trans-1,4-dichloro-2-b...	16.220	53	52003	108.85	ug/L		95
103)	1,2,3-trichloropropane	16.282	110	54141	108.34	ug/L		97
104)	bromobenzene	16.303	156	243164	110.21	ug/L		90
105)	n-propylbenzene	16.329	91	1211695	111.76	ug/L		99
106)	2-chlorotoluene	16.476	126	254177	113.62	ug/L		99
107)	4-chlorotoluene	16.596	91	670705	107.64	ug/L		99
108)	1,3,5-trimethylbenzene	16.497	105	1005699	116.51	ug/L		99
109)	tert-butylbenzene	16.858	119	876347	122.34	ug/L		99
110)	1,2,4-trimethylbenzene	16.915	105	1007852	113.62	ug/L		100
111)	sec-butylbenzene	17.093	105	1396011	118.99	ug/L		99
112)	p-isopropyltoluene	17.224	119	1227712	116.88	ug/L		100
113)	1,3-dichlorobenzene	17.276	146	525742	105.95	ug/L		99
114)	1,4-dichlorobenzene	17.375	146	524856	105.57	ug/L		99
115)	1,2-dichlorobenzene	17.762	146	564258	107.06	ug/L		99
116)	Benzyl Chloride	17.470	91	439436	102.30	ug/L		100
117)	n-butylbenzene	17.653	92	616915	111.97	ug/L		98
118)	hexachloroethane	18.071	201	237024	131.28	ug/L		98
119)	1,2-dibromo-3-chloropr...	18.537	157	70878	113.76	ug/L		96
120)	1,3,5-trichlorobenzene	18.720	180	673755	112.08	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135077.D
Acq On : 2 Mar 2017 8:31 pm
Operator : [redacted]
Sample : ic5999-100
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 03 11:37:34 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

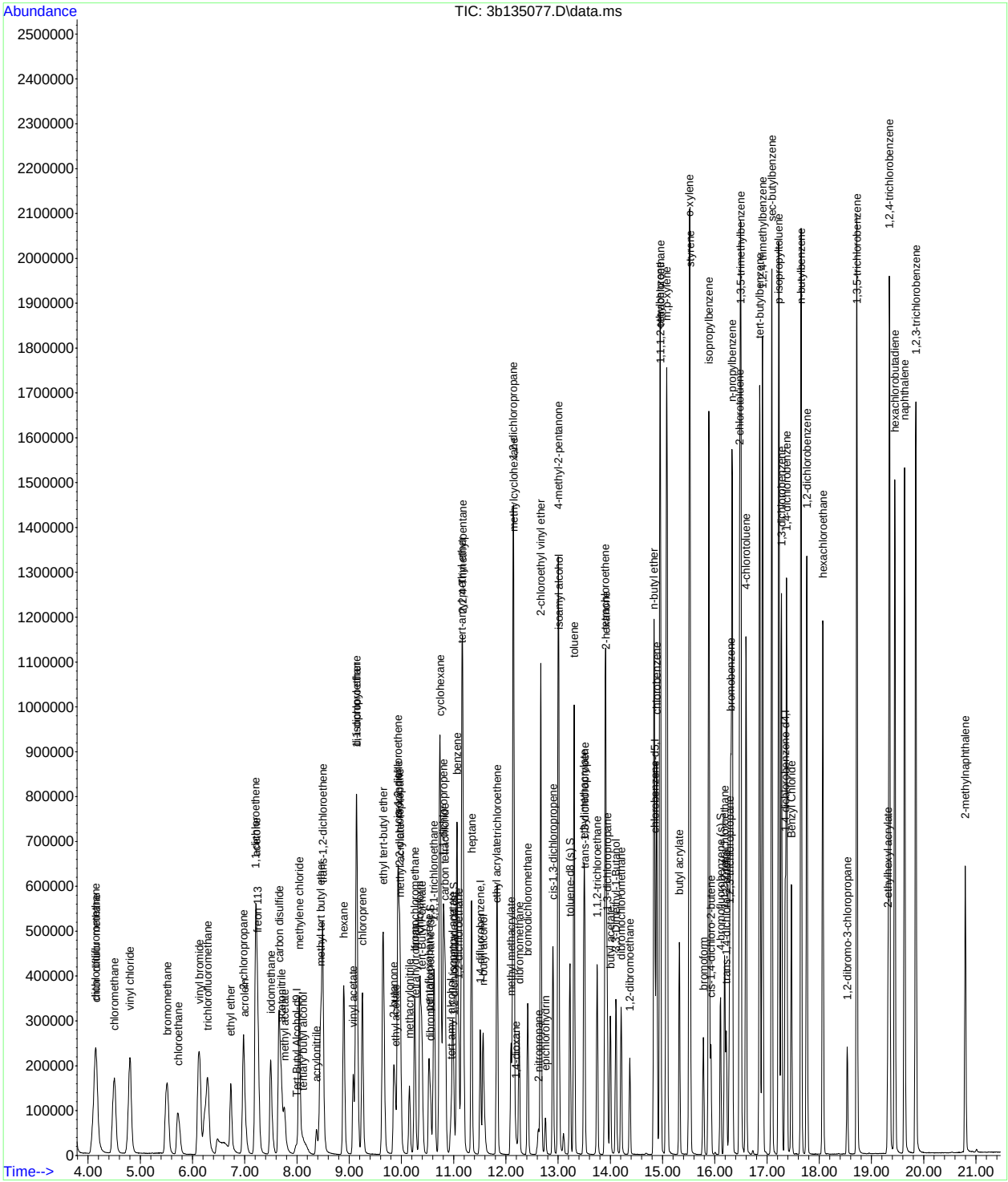
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) 2-ethylhexyl acrylate	19.316	70	96506	25.59	ug/L	97
122) 1,2,4-trichlorobenzene	19.342	180	651951	111.53	ug/L	100
123) hexachlorobutadiene	19.447	225	337767	115.00	ug/L	98
124) naphthalene	19.635	128	1226617	112.42	ug/L	100
125) 1,2,3-trichlorobenzene	19.849	180	579014	113.13	ug/L	99
126) 2-methylnaphthalene	20.796	142	337990	76.46	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135077.D
Acq On : 2 Mar 2017 8:31 pm
Operator : [redacted]
Sample : 1c5999-100
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Mar 03 11:37:34 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135078.D
Acq On : 2 Mar 2017 9:00 pm
Operator : [redacted]
Sample : 1c5999-200
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 03 11:37:39 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	8.008	65	89494	500.00	ug/L		0.01
5) pentafluorobenzene	10.524	168	172674	50.00	ug/L		0.00
53) 1,4-difluorobenzene	11.512	114	251023	50.00	ug/L		0.00
74) chlorobenzene-d5	14.849	117	245726	50.00	ug/L		0.00
99) 1,4-dichlorobenzene-d4	17.349	152	165866	50.00	ug/L		0.00
System Monitoring Compounds							
45) dibromofluoromethane (s)	10.555	113	83731	51.67	ug/L		0.00
Spiked Amount 50.000	Range 70 - 122		Recovery = 103.34%				
54) 1,2-dichloroethane-d4 (s)	11.000	65	81145	49.07	ug/L		0.00
Spiked Amount 50.000	Range 68 - 124		Recovery = 98.14%				
75) toluene-d8 (s)	13.228	98	309452	50.00	ug/L		0.00
Spiked Amount 50.000	Range 77 - 125		Recovery = 100.00%				
100) 4-bromofluorobenzene (s)	16.110	95	123704	50.91	ug/L		0.00
Spiked Amount 50.000	Range 72 - 130		Recovery = 101.82%				
Target Compounds							Qvalue
3) tertiary butyl alcohol	8.139	59	207967	1223.73	ug/L		99
4) 1,4-dioxane	12.187	88	93859	5747.63	ug/L		90
6) chlorodifluoromethane	4.154	51	744182	209.46	ug/L		99
7) dichlorodifluoromethane	4.133	85	909736	195.64	ug/L		100
8) chloromethane	4.509	50	974527	223.40	ug/L		100
9) vinyl chloride	4.807	62	1005386	203.96	ug/L		99
10) bromomethane	5.508	94	488309	193.14	ug/L		96
11) chloroethane	5.717	64	385386	199.37	ug/L		98
12) trichlorofluoromethane	6.282	101	807902	201.05	ug/L		99
13) vinyl bromide	6.131	106	791653	205.43	ug/L		99
14) ethyl ether	6.732	74	176640	223.17	ug/L		95
15) 2-chloropropane	6.973	43	715271	182.91	ug/L		99
16) acrolein	6.988	56	60234	201.66	ug/L		99
17) freon 113	7.245	151	401869	218.33	ug/L		97
18) 1,1-dichloroethene	7.208	96	353701	193.77	ug/L		99
19) acetone	7.224	58	137412	1100.22	ug/L		94
20) acetonitrile	7.705	41	627865	2543.76	ug/L		97
21) iodomethane	7.496	142	801777	204.31	ug/L		99
22) carbon disulfide	7.653	76	1439021	194.41	ug/L		99
23) methylene chloride	8.045	84	422168	198.42	ug/L		99
24) methyl acetate	7.762	43	236625	211.76	ug/L		99
25) methyl tert butyl ether	8.458	73	1229592	207.81	ug/L		100
26) trans-1,2-dichloroethene	8.489	96	363905	187.08	ug/L		100
27) hexane	8.897	56	249332	196.99	ug/L		98
28) di-isopropyl ether	9.138	45	1505090	202.99	ug/L		99
29) 2-butanone	9.860	72	152917	1161.83	ug/L		91
30) 1,1-dichloroethane	9.143	63	668126	198.40	ug/L		99
31) chloroprene	9.253	53	545653	201.36	ug/L		98
32) acrylonitrile	8.374	53	140482	223.28	ug/L		98
33) vinyl acetate	9.080	86	55199	234.96	ug/L	#	88
34) ethyl tert-butyl ether	9.651	59	1400749	214.93	ug/L		99
35) ethyl acetate	9.886	45	42374	220.28	ug/L	#	43
36) 2,2-dichloropropane	9.970	77	698621	190.10	ug/L		100
37) cis-1,2-dichloroethene	9.933	96	410589	195.15	ug/L		98
38) propionitrile	9.938	54	477494	697.46	ug/L		99
39) methyl acrylate	9.975	85	42538	231.07	ug/L		99
40) methacrylonitrile	10.153	67	125294	222.78	ug/L		95
41) bromochloromethane	10.252	128	202941	218.14	ug/L		95
42) tetrahydrofuran	10.268	42	96669	211.81	ug/L		98
43) chloroform	10.351	83	626341	197.92	ug/L		100
44) tert-Butyl Formate	10.388	59	448723	221.36	ug/L		99
46) 1,1,1-trichloroethane	10.623	97	698064	203.61	ug/L		99
47) cyclohexane	10.744	84	616004	199.22	ug/L		98
49) 1,1-dichloropropene	10.801	75	461332	204.39	ug/L		99
50) carbon tetrachloride	10.833	117	610782	203.37	ug/L		98

SGS ACCUTEST

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135078.D
Acq On : 2 Mar 2017 9:00 pm
Operator : [redacted]
Sample : ic5999-200
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 03 11:37:39 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51)	tert-amyl alcohol	10.953	73	97784	671.54	ug/L		96
52)	isopropyl acetate	10.979	87	62946	135.07	ug/L	#	90
55)	n-butyl alcohol	11.565	56	452742	732.49	ug/L		99
56)	2,2,4-Trimethylpentane	11.178	57	1886649	234.46	ug/L		98
57)	benzene	11.063	78	1422920	201.33	ug/L		99
58)	tert-amyl methyl ether	11.157	73	1250400	205.36	ug/L		98
59)	heptane	11.340	57	271456	192.07	ug/L		98
60)	1,2-dichloroethane	11.099	62	424008	206.51	ug/L		97
61)	ethyl acrylate	11.821	55	329362	209.61	ug/L		100
62)	trichloroethene	11.832	95	345348	395.04	ug/L		97
63)	2-chloroethyl vinyl ether	12.668	63	988141	517.56	ug/L		100
64)	methyl methacrylate	12.098	100	76682	208.57	ug/L		98
65)	methylcyclohexane	12.145	83	796344	204.08	ug/L		100
66)	1,2-dichloropropane	12.140	63	380765	205.03	ug/L		99
67)	dibromomethane	12.255	93	205227	207.97	ug/L		99
68)	bromodichloromethane	12.417	83	470781	212.80	ug/L		99
69)	2-nitropropane	12.627	41	72655	176.13	ug/L		93
70)	epichlorohydrin	12.757	57	154433	538.88	ug/L		98
71)	cis-1,3-dichloropropene	12.899	75	569737	208.06	ug/L		98
72)	4-methyl-2-pentanone	13.003	58	600877	983.85	ug/L		97
73)	isoamyl alcohol	13.014	70	174954	1027.14	ug/L	#	88
76)	toluene	13.306	92	863958	201.48	ug/L		99
77)	ethyl methacrylate	13.495	69	396544	197.37	ug/L		100
78)	trans-1,3-dichloropropene	13.510	75	471627	202.92	ug/L		91
79)	1,1,2-trichloroethane	13.746	83	242794	206.25	ug/L		98
80)	tetrachloroethene	13.903	164	310692	202.12	ug/L		100
81)	2-hexanone	13.913	58	489727	927.04	ug/L		97
82)	1,3-dichloropropane	13.939	76	462641	198.06	ug/L		97
83)	butyl acetate	13.997	56	188219	186.66	ug/L		99
84)	3,3-Dimethyl-1-Butanol	14.107	69	251783	520.43	ug/L		97
85)	dibromochloromethane	14.206	129	373500	213.00	ug/L		97
86)	1,2-dibromoethane	14.373	107	310176	207.17	ug/L		99
87)	n-butyl ether	14.839	57	1720370	200.00	ug/L		99
88)	chlorobenzene	14.886	112	1008889	203.26	ug/L		99
89)	1,1,1,2-tetrachloroethane	14.959	131	498496	218.74	ug/L		98
90)	ethylbenzene	14.949	91	1759354	197.66	ug/L		99
91)	m,p-xylene	15.080	106	1381147	327.88	ug/L		100
92)	o-xylene	15.514	91	1679510	209.24	ug/L		100
93)	styrene	15.524	104	1160265	202.05	ug/L		97
94)	butyl acrylate	15.320	55	608024	182.12	ug/L		100
95)	isopropylbenzene	15.885	105	2257498	210.50	ug/L		100
96)	bromoform	15.780	173	274686	217.64	ug/L		98
97)	cis-1,4-dichloro-2-butene	15.927	88	119529	228.66	ug/L		99
101)	1,1,2,2-tetrachloroethane	16.188	83	479648	213.25	ug/L		97
102)	trans-1,4-dichloro-2-b...	16.220	53	107504	208.83	ug/L		94
103)	1,2,3-trichloropropane	16.282	110	114359	212.37	ug/L		94
104)	bromobenzene	16.303	156	505150	212.47	ug/L		91
105)	n-propylbenzene	16.330	91	2437510	208.64	ug/L		99
106)	2-chlorotoluene	16.481	126	521875	216.50	ug/L		99
107)	4-chlorotoluene	16.596	91	1377897	205.22	ug/L		100
108)	1,3,5-trimethylbenzene	16.497	105	2095395	225.28	ug/L		99
109)	tert-butylbenzene	16.858	119	1845226	239.05	ug/L		98
110)	1,2,4-trimethylbenzene	16.915	105	2110811	220.83	ug/L		100
111)	sec-butylbenzene	17.093	105	2868447	226.90	ug/L		99
112)	p-isopropyltoluene	17.224	119	2531765	223.68	ug/L		99
113)	1,3-dichlorobenzene	17.276	146	1094489	204.68	ug/L		99
114)	1,4-dichlorobenzene	17.376	146	1100163	205.36	ug/L		99
115)	1,2-dichlorobenzene	17.763	146	1185889	208.80	ug/L		99
116)	Benzyl Chloride	17.465	91	923045	199.42	ug/L		98
117)	n-butylbenzene	17.653	92	1261491	212.47	ug/L		98
118)	hexachloroethane	18.071	201	504580	259.34	ug/L		98
119)	1,2-dibromo-3-chloropr...	18.537	157	154324	229.87	ug/L		96
120)	1,3,5-trichlorobenzene	18.720	180	1364521	210.65	ug/L		99

SGS ACCUTEST

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135078.D
Acq On : 2 Mar 2017 9:00 pm
Operator : [redacted]
Sample : 1c5999-200
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 03 11:37:39 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) 2-ethylhexyl acrylate	19.316	70	201910	49.68	ug/L	96
122) 1,2,4-trichlorobenzene	19.342	180	1326909	210.65	ug/L	100
123) hexachlorobutadiene	19.447	225	666416	210.55	ug/L	99
124) naphthalene	19.635	128	2531138	215.29	ug/L	100
125) 1,2,3-trichlorobenzene	19.849	180	1184106	214.71	ug/L	99
126) 2-methylnaphthalene	20.796	142	723586	151.91	ug/L	99

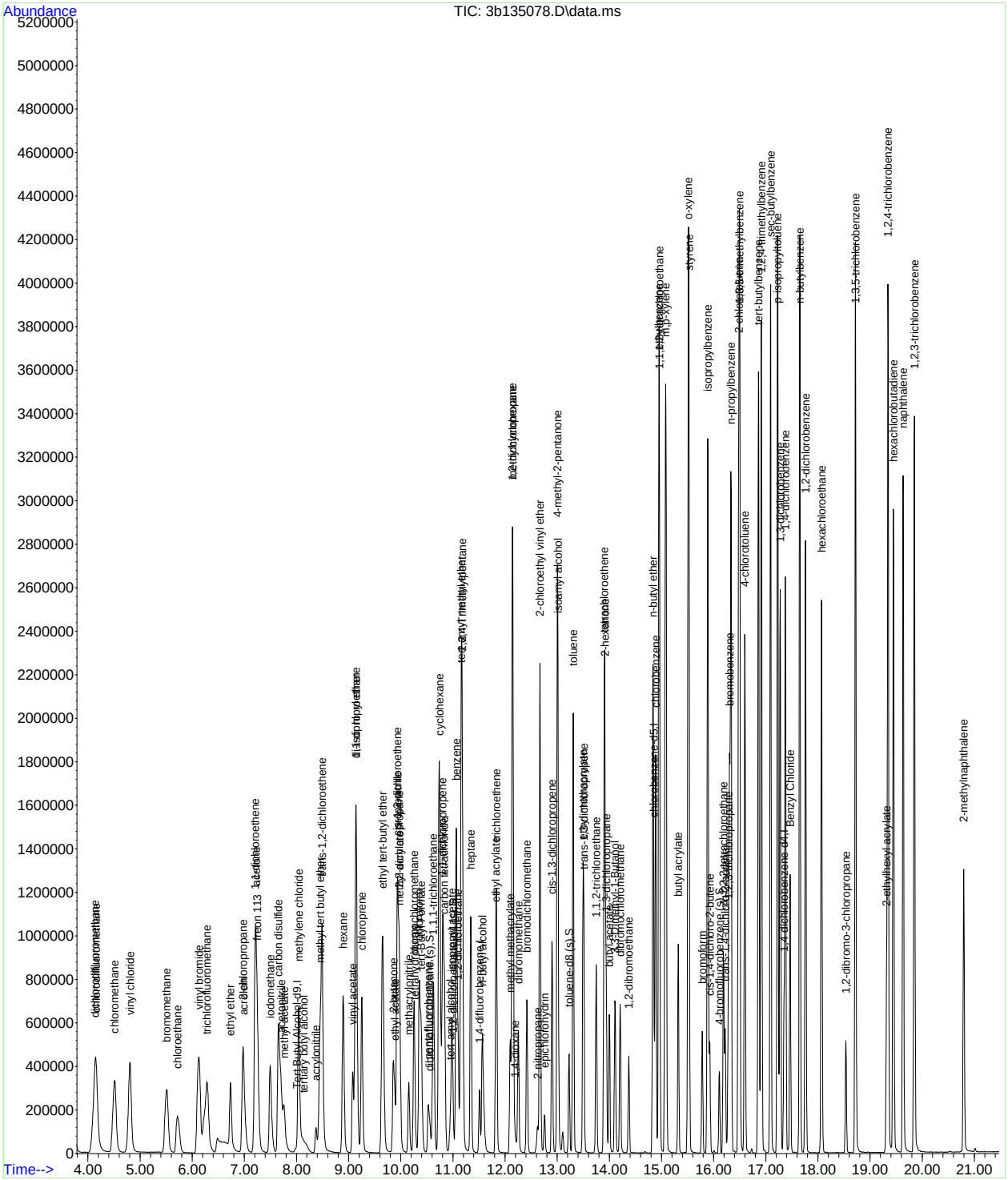
(#) = qualifier out of range (m) = manual integration (+) = signals summed

SGS ACCUTEST
[redacted]

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135078.D
Acq On : 2 Mar 2017 9:00 pm
Operator : [redacted]
Sample : 1c5999-200
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 03 11:37:39 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 09:45:52 2017
Response via : Initial Calibration



SGS ACCUTEST

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135081.D
Acq On : 2 Mar 2017 10:25 pm
Operator : [redacted]
Sample : icv5999-50
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 03 11:50:48 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.992	65	92713	500.00	ug/L	0.00
5) pentafluorobenzene	10.529	168	175569	50.00	ug/L	0.00
53) 1,4-difluorobenzene	11.512	114	247917	50.00	ug/L	0.00
74) chlorobenzene-d5	14.854	117	238832	50.00	ug/L	0.00
99) 1,4-dichlorobenzene-d4	17.349	152	161248	50.00	ug/L	0.00
System Monitoring Compounds						
45) dibromofluoromethane (s)	10.560	113	84708	51.46	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 102.92%			
54) 1,2-dichloroethane-d4 (s)	11.000	65	81957	50.11	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 100.22%			
75) toluene-d8 (s)	13.228	98	302347	50.18	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 100.36%			
100) 4-bromofluorobenzene (s)	16.105	95	121538	51.41	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 102.82%			
Target Compounds						Qvalue
3) tertiary butyl alcohol	8.123	59	53151	259.30	ug/L	98
4) 1,4-dioxane	12.182	88	21445	1102.23	ug/L	92
6) chlorodifluoromethane	4.159	51	159424	41.23	ug/L	99
7) dichlorodifluoromethane	4.132	85	192072	40.62	ug/L	98
8) chloromethane	4.499	50	202343	45.62	ug/L	100
9) vinyl chloride	4.802	62	222122	44.32	ug/L	100
10) bromomethane	5.508	94	123027	47.86	ug/L	99
11) chloroethane	5.717	64	99134	50.44	ug/L	98
12) trichlorofluoromethane	6.282	101	200855	48.04	ug/L	98
13) vinyl bromide	6.125	106	129170	32.96	ug/L	99
14) ethyl ether	6.732	74	49185	54.58	ug/L	97
15) 2-chloropropane	6.978	43	206368	51.88	ug/L	98
16) acrolein	6.993	56	19036	62.68	ug/L	88
17) freon 113	7.239	151	124416	57.32	ug/L	97
18) 1,1-dichloroethene	7.213	96	98170	51.63	ug/L	99
19) acetone	7.218	58	36596	271.73	ug/L	91
20) acetonitrile	7.705	41	134333	389.65	ug/L	100
21) iodomethane	7.496	142	221640	55.55	ug/L	97
22) carbon disulfide	7.658	76	434073	57.68	ug/L	99
23) methylene chloride	8.045	84	116054	53.65	ug/L	99
24) methyl acetate	7.762	43	60753	48.71	ug/L	100
25) methyl tert butyl ether	8.458	73	650751	108.17	ug/L	98
26) trans-1,2-dichloroethene	8.495	96	102948	52.05	ug/L	98
27) hexane	8.897	56	48454	36.58	ug/L	99
28) di-isopropyl ether	9.138	45	383485	50.87	ug/L	99
29) 2-butanone	9.854	72	38000	269.62	ug/L	89
30) 1,1-dichloroethane	9.143	63	187277	53.80	ug/L	99
31) chloroprene	9.253	53	147928	53.69	ug/L	99
32) acrylonitrile	8.379	53	40992	57.57	ug/L	98
33) vinyl acetate	9.080	86	13649	50.91	ug/L	96
34) ethyl tert-butyl ether	9.650	59	356605	53.81	ug/L	99
35) ethyl acetate	9.886	45	10891	49.82	ug/L #	41
36) 2,2-dichloropropane	9.969	77	190887	51.08	ug/L	98
37) cis-1,2-dichloroethene	9.933	96	115188	53.84	ug/L	98
38) propionitrile	9.938	54	121221	529.59	ug/L	98
39) methyl acrylate	9.975	85	10683	52.45	ug/L #	88
40) methacrylonitrile	10.158	67	31652	51.28	ug/L	91
41) bromochloromethane	10.252	128	53929	54.67	ug/L	97
42) tetrahydrofuran	10.262	42	25186	50.32	ug/L	99
43) chloroform	10.351	83	173905	53.21	ug/L	99
44) tert-Butyl Formate	10.388	59	85706	40.42	ug/L	95
46) 1,1,1-trichloroethane	10.623	97	192066	55.10	ug/L	97
47) cyclohexane	10.743	84	186339	58.21	ug/L	99
49) 1,1-dichloropropene	10.801	75	126146	53.88	ug/L	99
50) carbon tetrachloride	10.832	117	169109	53.92	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135081.D
Acq On : 2 Mar 2017 10:25 pm
Operator : [redacted]
Sample : icv5999-50
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 03 11:50:48 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51)	tert-amyl alcohol	10.947	73	23883	224.83	ug/L		99
52)	isopropyl acetate	10.979	87	15243	47.71	ug/L	#	91
55)	n-butyl alcohol	11.565	56	101564	2096.72	ug/L		99
56)	2,2,4-Trimethylpentane	11.172	57	449059	52.78	ug/L		99
57)	benzene	11.063	78	376667	54.75	ug/L		100
58)	tert-amyl methyl ether	11.157	73	325162	54.07	ug/L		99
59)	heptane	11.340	57	71450	50.17	ug/L		99
60)	1,2-dichloroethane	11.099	62	111570	53.76	ug/L		97
61)	ethyl acrylate	11.821	55	88926	53.50	ug/L		99
62)	trichloroethene	11.831	95	91352	53.71	ug/L		99
63)	2-chloroethyl vinyl ether	12.668	63	259002	276.39	ug/L		100
64)	methyl methacrylate	12.098	100	19904	52.15	ug/L	#	71
65)	methylcyclohexane	12.145	83	198996	50.16	ug/L		98
66)	1,2-dichloropropane	12.135	63	102972	55.04	ug/L		97
67)	dibromomethane	12.255	93	54727	54.04	ug/L		96
68)	bromodichloromethane	12.417	83	120743	53.96	ug/L		98
69)	2-nitropropane	12.621	41	19747	51.82	ug/L		96
70)	epichlorohydrin	12.757	57	36045	231.99	ug/L		96
71)	cis-1,3-dichloropropene	12.898	75	146657	54.23	ug/L		97
72)	4-methyl-2-pentanone	13.003	58	156550	259.54	ug/L		98
73)	isoamyl alcohol	13.008	70	45222	939.78	ug/L		95
76)	toluene	13.306	92	227527	54.59	ug/L		99
77)	ethyl methacrylate	13.495	69	105439	53.99	ug/L		99
78)	trans-1,3-dichloropropene	13.510	75	124097	53.67	ug/L		89
79)	1,1,2-trichloroethane	13.746	83	63644	53.49	ug/L		98
80)	tetrachloroethene	13.903	164	83685	54.03	ug/L		98
81)	2-hexanone	13.913	58	131429	255.97	ug/L		98
82)	1,3-dichloropropane	13.939	76	121927	54.15	ug/L		95
83)	butyl acetate	14.002	56	51306	52.35	ug/L		93
84)	3,3-Dimethyl-1-Butanol	14.107	69	66725	466.02	ug/L		97
85)	dibromochloromethane	14.206	129	96272	55.48	ug/L		97
86)	1,2-dibromoethane	14.373	107	79061	53.11	ug/L		99
87)	n-butyl ether	14.834	57	472528	56.52	ug/L		100
88)	chlorobenzene	14.886	112	261797	54.27	ug/L		99
89)	1,1,1,2-tetrachloroethane	14.959	131	125669	55.35	ug/L		97
90)	ethylbenzene	14.949	91	466771	54.76	ug/L		99
91)	m,p-xylene	15.079	106	363082	109.43	ug/L		98
92)	o-xylene	15.513	91	425392	54.53	ug/L		99
93)	styrene	15.524	104	303041	54.95	ug/L		99
94)	butyl acrylate	15.320	55	175660	54.13	ug/L		98
95)	isopropylbenzene	15.885	105	577488	54.41	ug/L		99
96)	bromoform	15.780	173	70533	57.50	ug/L		98
97)	cis-1,4-dichloro-2-butene	15.921	88	30784	53.27	ug/L		98
101)	1,1,2,2-tetrachloroethane	16.188	83	121644	54.35	ug/L		97
102)	trans-1,4-dichloro-2-b...	16.220	53	28182	53.13	ug/L		96
103)	1,2,3-trichloropropane	16.282	110	29951	55.32	ug/L		98
104)	bromobenzene	16.303	156	130921	55.16	ug/L		90
105)	n-propylbenzene	16.329	91	637148	55.06	ug/L		99
106)	2-chlorotoluene	16.476	126	135258	56.04	ug/L		99
107)	4-chlorotoluene	16.596	91	357084	54.71	ug/L		99
108)	1,3,5-trimethylbenzene	16.497	105	523326	56.44	ug/L		99
109)	tert-butylbenzene	16.858	119	441005	55.14	ug/L		99
110)	1,2,4-trimethylbenzene	16.915	105	535438	56.32	ug/L		100
111)	sec-butylbenzene	17.093	105	715076	54.72	ug/L		100
112)	p-isopropyltoluene	17.224	119	625161	55.17	ug/L		99
113)	1,3-dichlorobenzene	17.276	146	279827	53.92	ug/L		99
114)	1,4-dichlorobenzene	17.375	146	281022	53.96	ug/L		98
115)	1,2-dichlorobenzene	17.762	146	304474	55.14	ug/L		98
116)	Benzyl Chloride	17.464	91	195915	43.54	ug/L		99
117)	n-butylbenzene	17.653	92	320566	55.54	ug/L		98
118)	hexachloroethane	18.071	201	120123	57.73	ug/L		98
119)	1,2-dibromo-3-chloropr...	18.537	157	37221	52.59	ug/L		97
120)	1,3,5-trichlorobenzene	18.720	180	581566	90.35	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135081.D
Acq On : 2 Mar 2017 10:25 pm
Operator : [redacted]
Sample : icv5999-50
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 03 11:50:48 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) 2-ethylhexyl acrylate	19.316	70	50009	11.19	ug/L	91
122) 1,2,4-trichlorobenzene	19.342	180	337381	55.09	ug/L	99
123) hexachlorobutadiene	19.447	225	174354	53.55	ug/L	98
124) naphthalene	19.635	128	640804	53.39	ug/L	100
125) 1,2,3-trichlorobenzene	19.849	180	302549	56.07	ug/L	99
126) 2-methylnaphthalene	20.796	142	4553	0.74	ug/L	91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

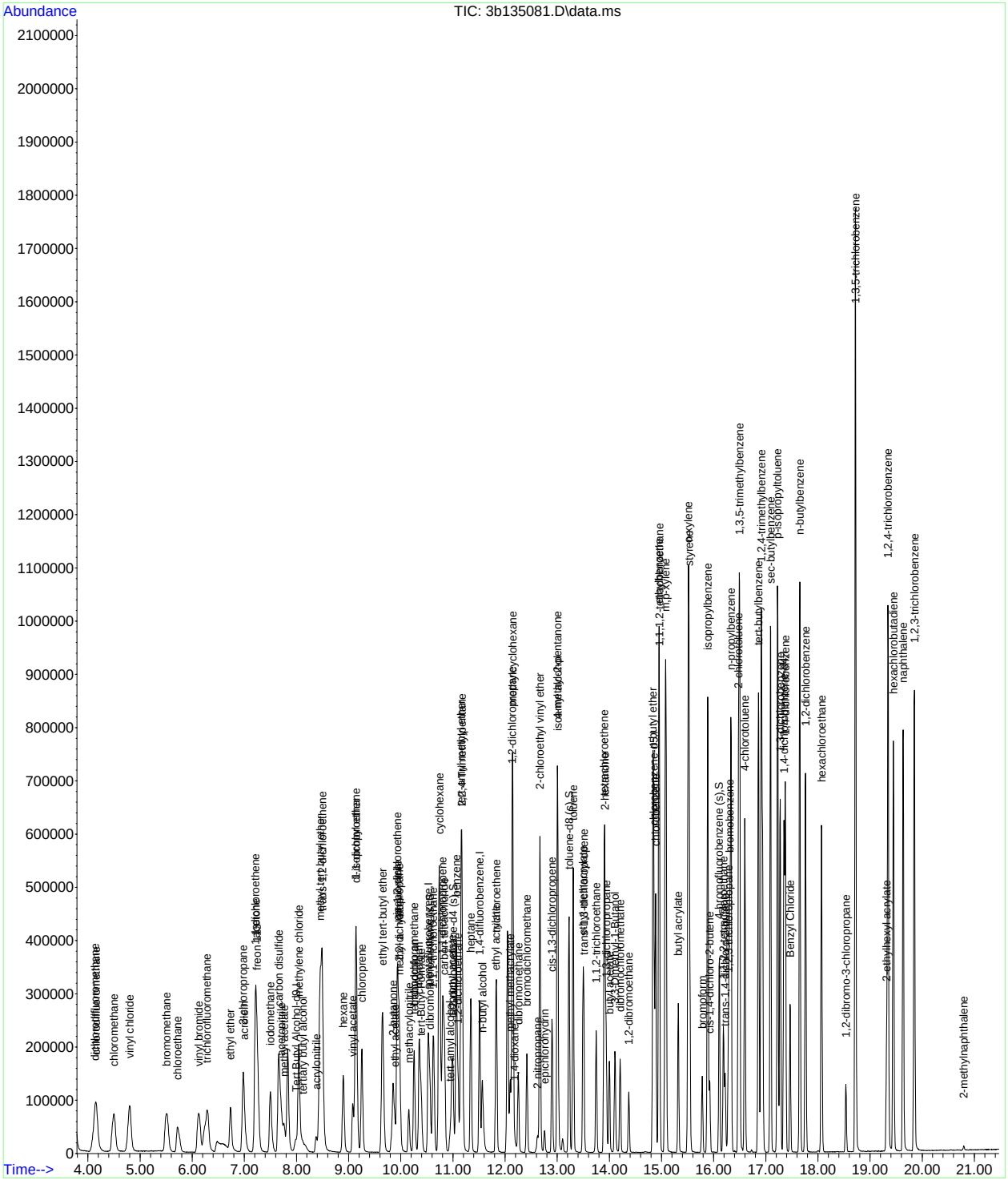
7.6.11

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Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b5999final\
Data File : 3b135081.D
Acq On : 2 Mar 2017 10:25 pm
Operator : [redacted]
Sample : icv5999-50
Misc : MS12964,V3B5999,5,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 03 11:50:48 2017
Quant Method : [redacted]M3B5999.m
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:48:36 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136493.D
Acq On : 22 Apr 2017 10:09 am
Operator : [redacted]
Sample : cc5999-20
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 24 15:52:44 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:41:10 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Tert Butyl Alcohol-d9	7.982	65	79709	500.00	ug/L		-0.02
5) pentafluorobenzene	10.529	168	155622	50.00	ug/L		0.00
53) 1,4-difluorobenzene	11.507	114	221585	50.00	ug/L		0.00
74) chlorobenzene-d5	14.849	117	221478	50.00	ug/L		0.00
99) 1,4-dichlorobenzene-d4	17.349	152	148443	50.00	ug/L		0.00
System Monitoring Compounds							
45) dibromofluoromethane (s)	10.555	113	77140	52.87	ug/L		0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 105.74%				
54) 1,2-dichloroethane-d4 (s)	11.000	65	72575	49.65	ug/L		0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 99.30%				
75) toluene-d8 (s)	13.228	98	275129	49.24	ug/L		0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 98.48%				
100) 4-bromofluorobenzene (s)	16.104	95	104099	47.83	ug/L		0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 95.66%				
Target Compounds							Qvalue
3) tertiary butyl alcohol	8.118	59	19723	111.92	ug/L		95
4) 1,4-dioxane	12.182	88	6779	405.27	ug/L		78
6) chlorodifluoromethane	4.164	51	71475	20.85	ug/L		98
7) dichlorodifluoromethane	4.138	85	79127	18.88	ug/L		94
8) chloromethane	4.499	50	82164	20.90	ug/L		98
9) vinyl chloride	4.797	62	93770	21.11	ug/L		99
10) bromomethane	5.498	94	53865	23.64	ug/L		94
11) chloroethane	5.722	64	37808	21.70	ug/L		96
12) trichlorofluoromethane	6.282	101	75842	20.46	ug/L		96
13) vinyl bromide	6.125	106	47855	13.78	ug/L		98
14) ethyl ether	6.737	74	17065	21.36	ug/L		91
15) 2-chloropropane	6.978	43	63155	17.91	ug/L		98
16) acrolein	7.004	56	6114	22.71	ug/L		89
17) freon 113	7.244	151	42426	22.05	ug/L		96
18) 1,1-dichloroethene	7.213	96	32703	19.41	ug/L		94
19) acetone	7.213	58	14784	123.84	ug/L		99
20) acetonitrile	7.699	41	65616	214.72	ug/L		98
21) iodomethane	7.495	142	75754	21.42	ug/L		95
22) carbon disulfide	7.658	76	133080	19.95	ug/L		99
23) methylene chloride	8.045	84	41603	21.70	ug/L		99
24) methyl acetate	7.767	43	22717	20.55	ug/L		94
25) methyl tert butyl ether	8.458	73	107582	20.18	ug/L		99
26) trans-1,2-dichloroethene	8.489	96	37319	21.29	ug/L		96
27) hexane	8.897	56	22213	18.92	ug/L		95
28) di-isopropyl ether	9.138	45	139631	20.90	ug/L		96
29) 2-butanone	9.854	72	13780	110.31	ug/L		97
30) 1,1-dichloroethane	9.138	63	67837	21.98	ug/L		97
31) chloroprene	9.253	53	49441	20.24	ug/L		97
32) acrylonitrile	8.374	53	13042	20.66	ug/L		96
33) vinyl acetate	9.080	86	4573	19.24	ug/L	#	66
34) ethyl tert-butyl ether	9.645	59	125647	21.39	ug/L		96
35) ethyl acetate	9.886	45	3974	20.51	ug/L	#	69
36) 2,2-dichloropropane	9.969	77	71952	21.72	ug/L		97
37) cis-1,2-dichloroethene	9.928	96	41142	21.70	ug/L		98
38) propionitrile	9.933	54	46654	229.95	ug/L		98
39) methyl acrylate	9.975	85	3927	21.75	ug/L	#	48
40) methacrylonitrile	10.158	67	11320	20.69	ug/L		92
41) bromochloromethane	10.257	128	19927	22.79	ug/L		89
42) tetrahydrofuran	10.262	42	9587	21.61	ug/L		93
43) chloroform	10.351	83	62104	21.44	ug/L		96
44) tert-Butyl Formate	10.383	59	33815	17.99	ug/L		94
46) 1,1,1-trichloroethane	10.623	97	64074	20.74	ug/L		96
47) cyclohexane	10.743	84	56360	19.86	ug/L		100
49) 1,1-dichloropropene	10.801	75	42840	20.64	ug/L		99
50) carbon tetrachloride	10.832	117	57541	20.70	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136493.D
Acq On : 22 Apr 2017 10:09 am
Operator : [redacted]
Sample : cc5999-20
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 24 15:52:44 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:41:10 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51)	tert-amyl alcohol	10.942	73	8134	86.39	ug/L	#	84
52)	isopropyl acetate	10.984	87	5743	20.28	ug/L	#	78
55)	n-butyl alcohol	11.559	56	40852	943.58	ug/L		96
56)	2,2,4-Trimethylpentane	11.167	57	149223	19.62	ug/L		97
57)	benzene	11.062	78	135514	22.04	ug/L		98
58)	tert-amyl methyl ether	11.157	73	114616	21.32	ug/L		96
59)	heptane	11.345	57	24392	19.16	ug/L		94
60)	1,2-dichloroethane	11.094	62	40568	21.87	ug/L		100
61)	ethyl acrylate	11.821	55	29185	19.65	ug/L		100
62)	trichloroethene	11.831	95	32131	21.14	ug/L		97
63)	2-chloroethyl vinyl ether	12.668	63	82049	97.96	ug/L		99
64)	methyl methacrylate	12.098	100	6535	19.16	ug/L		89
65)	methylcyclohexane	12.145	83	73643	20.77	ug/L		98
66)	1,2-dichloropropane	12.135	63	37203	22.25	ug/L		96
67)	dibromomethane	12.250	93	20147	22.26	ug/L		98
68)	bromodichloromethane	12.417	83	43916	21.96	ug/L		97
69)	2-nitropropane	12.621	41	5998	17.61	ug/L		85
70)	epichlorohydrin	12.757	57	14769	106.35	ug/L		96
71)	cis-1,3-dichloropropene	12.898	75	52429	21.69	ug/L		97
72)	4-methyl-2-pentanone	13.003	58	59674	110.69	ug/L		95
73)	isoamyl alcohol	13.008	70	16878	392.43	ug/L		93
76)	toluene	13.306	92	81816	21.17	ug/L		99
77)	ethyl methacrylate	13.495	69	35334	19.51	ug/L		98
78)	trans-1,3-dichloropropene	13.505	75	45310	21.13	ug/L		97
79)	1,1,2-trichloroethane	13.746	83	23832	21.60	ug/L		98
80)	tetrachloroethene	13.903	164	30006	20.89	ug/L		95
81)	2-hexanone	13.913	58	51757	108.70	ug/L		99
82)	1,3-dichloropropane	13.939	76	46446	22.24	ug/L		87
83)	butyl acetate	14.002	56	18621	20.49	ug/L		92
84)	3,3-Dimethyl-1-Butanol	14.101	69	22870	172.24	ug/L		98
85)	dibromochloromethane	14.206	129	35805	22.25	ug/L		97
86)	1,2-dibromoethane	14.373	107	29160	21.12	ug/L		99
87)	n-butyl ether	14.839	57	159866	20.62	ug/L		99
88)	chlorobenzene	14.886	112	96484	21.57	ug/L		99
89)	1,1,1,2-tetrachloroethane	14.959	131	45001	21.37	ug/L		98
90)	ethylbenzene	14.949	91	165240	20.90	ug/L		99
91)	m,p-xylene	15.079	106	129963	42.24	ug/L		91
92)	o-xylene	15.513	91	146320	20.23	ug/L		99
93)	styrene	15.524	104	108611	21.24	ug/L		99
94)	butyl acrylate	15.320	55	59382	19.73	ug/L		98
95)	isopropylbenzene	15.885	105	191830	19.49	ug/L		98
96)	bromoform	15.780	173	27054	23.78	ug/L		94
97)	cis-1,4-dichloro-2-butene	15.927	88	11302	21.09	ug/L		99
101)	1,1,2,2-tetrachloroethane	16.188	83	46174	22.41	ug/L		98
102)	trans-1,4-dichloro-2-b...	16.220	53	10285	21.06	ug/L		95
103)	1,2,3-trichloropropane	16.282	110	10717	21.50	ug/L		99
104)	bromobenzene	16.308	156	49485	22.65	ug/L		92
105)	n-propylbenzene	16.329	91	225950	21.21	ug/L		98
106)	2-chlorotoluene	16.481	126	48139	21.67	ug/L		96
107)	4-chlorotoluene	16.596	91	125372	20.86	ug/L		98
108)	1,3,5-trimethylbenzene	16.497	105	177820	20.83	ug/L		96
109)	tert-butylbenzene	16.858	119	140177	19.04	ug/L		98
110)	1,2,4-trimethylbenzene	16.915	105	182970	20.90	ug/L		98
111)	sec-butylbenzene	17.093	105	239279	19.89	ug/L		98
112)	p-isopropyltoluene	17.229	119	216424	20.75	ug/L		96
113)	1,3-dichlorobenzene	17.276	146	109276	22.87	ug/L		98
114)	1,4-dichlorobenzene	17.375	146	108579	22.65	ug/L		97
115)	1,2-dichlorobenzene	17.762	146	115358	22.70	ug/L		98
116)	Benzyl Chloride	17.470	91	100498	24.26	ug/L		99
117)	n-butylbenzene	17.653	92	114795	21.60	ug/L		96
118)	hexachloroethane	18.071	201	40810	21.30	ug/L		97
119)	1,2-dibromo-3-chloropr...	18.537	157	13848	21.25	ug/L		94
120)	1,3,5-trichlorobenzene	18.720	180	143146	24.16	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136493.D
Acq On : 22 Apr 2017 10:09 am
Operator : [redacted]
Sample : cc5999-20
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 24 15:52:44 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:41:10 2017
Response via : Initial Calibration

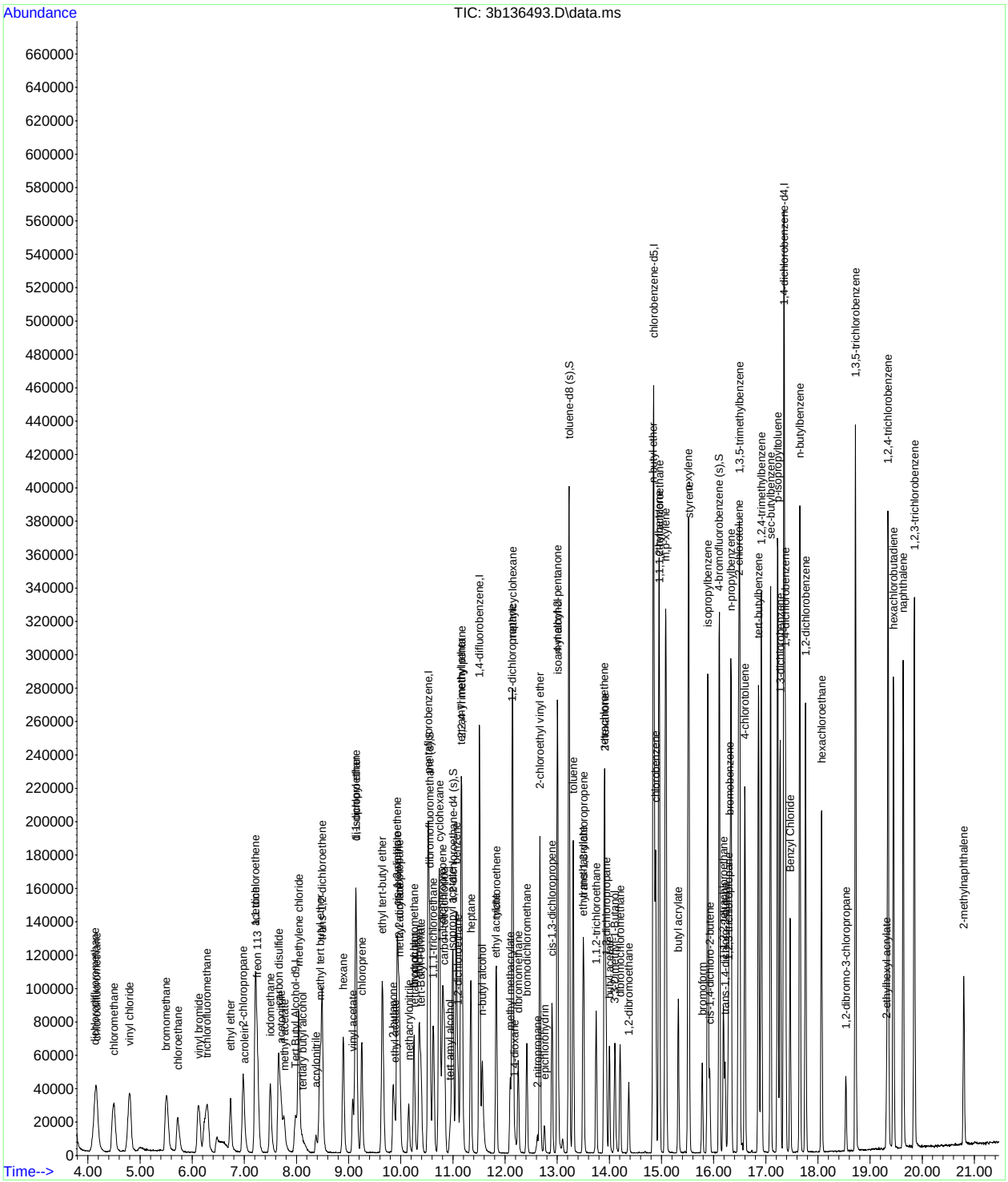
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) 2-ethylhexyl acrylate	19.316	70	10397	2.53	ug/L	93
122) 1,2,4-trichlorobenzene	19.342	180	127714	22.65	ug/L	98
123) hexachlorobutadiene	19.447	225	64376	21.48	ug/L	98
124) naphthalene	19.635	128	233546	21.14	ug/L	99
125) 1,2,3-trichlorobenzene	19.849	180	115613	23.27	ug/L	99
126) 2-methylnaphthalene	20.796	142	53781	9.55	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136493.D
Acq On : 22 Apr 2017 10:09 am
Operator : [redacted]
Sample : cc5999-20
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 24 15:52:44 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:41:10 2017
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136516.D
Acq On : 22 Apr 2017 9:32 pm
Operator : [redacted]
Sample : ecc5999-20
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 24 15:57:40 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:41:10 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Tert Butyl Alcohol-d9	7.992	65	77827	500.00	ug/L	0.00
5) pentafluorobenzene	10.524	168	150771	50.00	ug/L	0.00
53) 1,4-difluorobenzene	11.507	114	212107	50.00	ug/L	0.00
74) chlorobenzene-d5	14.849	117	214646	50.00	ug/L	0.00
99) 1,4-dichlorobenzene-d4	17.349	152	144507	50.00	ug/L	0.00
System Monitoring Compounds						
45) dibromofluoromethane (s)	10.555	113	74721	52.86	ug/L	0.00
Spiked Amount 50.000	Range 76 - 120		Recovery = 105.72%			
54) 1,2-dichloroethane-d4 (s)	11.000	65	71506	51.10	ug/L	0.00
Spiked Amount 50.000	Range 73 - 122		Recovery = 102.20%			
75) toluene-d8 (s)	13.223	98	263595	48.67	ug/L	0.00
Spiked Amount 50.000	Range 84 - 119		Recovery = 97.34%			
100) 4-bromofluorobenzene (s)	16.105	95	102782	48.51	ug/L	0.00
Spiked Amount 50.000	Range 78 - 117		Recovery = 97.02%			
Target Compounds						Qvalue
3) tertiary butyl alcohol	8.113	59	18767	109.07	ug/L	90
4) 1,4-dioxane	12.182	88	8812	539.55	ug/L	87
6) chlorodifluoromethane	4.148	51	66044	19.89	ug/L	98
7) dichlorodifluoromethane	4.133	85	63072	15.53	ug/L	97
8) chloromethane	4.488	50	68638	18.02	ug/L	98
9) vinyl chloride	4.786	62	83167	19.32	ug/L	97
10) bromomethane	5.498	94	46861	21.23	ug/L	96
11) chloroethane	5.717	64	36505	21.63	ug/L	95
12) trichlorofluoromethane	6.272	101	69699	19.41	ug/L	98
13) vinyl bromide	6.120	106	43032	12.79	ug/L	98
14) ethyl ether	6.727	74	15350	19.84	ug/L	86
15) 2-chloropropane	6.967	43	59185	17.33	ug/L	96
16) acrolein	6.993	56	4706	18.04	ug/L	92
17) freon 113	7.239	151	38201	20.50	ug/L	95
18) 1,1-dichloroethene	7.208	96	30268	18.54	ug/L	97
19) acetone	7.213	58	12483	107.93	ug/L	88
20) acetonitrile	7.694	41	61151	206.55	ug/L	97
21) iodomethane	7.490	142	71074	20.74	ug/L	96
22) carbon disulfide	7.652	76	125067	19.35	ug/L	97
23) methylene chloride	8.040	84	38654	20.81	ug/L	97
24) methyl acetate	7.757	43	22305	20.83	ug/L	98
25) methyl tert butyl ether	8.458	73	100679	19.49	ug/L	96
26) trans-1,2-dichloroethene	8.489	96	34797	20.49	ug/L	91
27) hexane	8.897	56	20501	18.02	ug/L	94
28) di-isopropyl ether	9.133	45	132676	20.49	ug/L	99
29) 2-butanone	9.854	72	12690	104.85	ug/L	92
30) 1,1-dichloroethane	9.138	63	63125	21.12	ug/L	98
31) chloroprene	9.253	53	45825	19.37	ug/L	99
32) acrylonitrile	8.369	53	12968	21.21	ug/L	97
33) vinyl acetate	9.075	86	4472	19.42	ug/L #	74
34) ethyl tert-butyl ether	9.645	59	117423	20.63	ug/L	98
35) ethyl acetate	9.886	45	3637	19.37	ug/L	96
36) 2,2-dichloropropane	9.959	77	62772	19.56	ug/L	99
37) cis-1,2-dichloroethene	9.928	96	37469	20.40	ug/L	97
38) propionitrile	9.933	54	44335	225.55	ug/L	99
39) methyl acrylate	9.964	85	3945	22.55	ug/L	99
40) methacrylonitrile	10.147	67	10632	20.06	ug/L	87
41) bromochloromethane	10.247	128	19034	22.47	ug/L	93
42) tetrahydrofuran	10.257	42	8703	20.25	ug/L	96
43) chloroform	10.351	83	58007	20.67	ug/L	99
44) tert-Butyl Formate	10.383	59	31670	17.39	ug/L	93
46) 1,1,1-trichloroethane	10.623	97	60851	20.33	ug/L	98
47) cyclohexane	10.744	84	50635	18.42	ug/L	93
49) 1,1-dichloropropene	10.801	75	40411	20.10	ug/L	98
50) carbon tetrachloride	10.827	117	54092	20.08	ug/L	97

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136516.D
Acq On : 22 Apr 2017 9:32 pm
Operator : [redacted]
Sample : ecc5999-20
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 24 15:57:40 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:41:10 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
51)	tert-amyl alcohol	10.953	73	8708	95.46	ug/L	#	80
52)	isopropyl acetate	10.979	87	4936	17.99	ug/L	#	82
55)	n-butyl alcohol	11.559	56	42496	1025.42	ug/L		97
56)	2,2,4-Trimethylpentane	11.167	57	138990	19.09	ug/L		100
57)	benzene	11.063	78	128368	21.81	ug/L		96
58)	tert-amyl methyl ether	11.151	73	109754	21.33	ug/L		98
59)	heptane	11.340	57	22266	18.27	ug/L		97
60)	1,2-dichloroethane	11.094	62	37729	21.25	ug/L		100
61)	ethyl acrylate	11.821	55	27957	19.66	ug/L		96
62)	trichloroethene	11.831	95	30667	21.07	ug/L		98
63)	2-chloroethyl vinyl ether	12.663	63	78453	97.85	ug/L		98
64)	methyl methacrylate	12.093	100	5906	18.09	ug/L		94
65)	methylcyclohexane	12.145	83	66497	19.59	ug/L		94
66)	1,2-dichloropropane	12.135	63	35475	22.16	ug/L		97
67)	dibromomethane	12.250	93	19025	21.96	ug/L		99
68)	bromodichloromethane	12.417	83	41360	21.60	ug/L		95
69)	2-nitropropane	12.621	41	6721	20.61	ug/L		93
70)	epichlorohydrin	12.752	57	13219	99.44	ug/L		93
71)	cis-1,3-dichloropropene	12.898	75	49908	21.57	ug/L		96
72)	4-methyl-2-pentanone	13.003	58	56379	109.25	ug/L		99
73)	isoamyl alcohol	13.008	70	17932	435.57	ug/L	#	85
76)	toluene	13.306	92	74721	19.95	ug/L		95
77)	ethyl methacrylate	13.495	69	33057	18.84	ug/L		97
78)	trans-1,3-dichloropropene	13.505	75	42133	20.28	ug/L		94
79)	1,1,2-trichloroethane	13.746	83	22525	21.06	ug/L		96
80)	tetrachloroethene	13.897	164	26932	19.35	ug/L		98
81)	2-hexanone	13.908	58	46934	101.71	ug/L		98
82)	1,3-dichloropropane	13.939	76	43830	21.66	ug/L		91
83)	butyl acetate	13.997	56	17450	19.81	ug/L		91
84)	3,3-Dimethyl-1-Butanol	14.101	69	26045	202.40	ug/L		97
85)	dibromochloromethane	14.201	129	33393	21.41	ug/L		92
86)	1,2-dibromoethane	14.368	107	28367	21.20	ug/L		98
87)	n-butyl ether	14.834	57	149493	19.90	ug/L		99
88)	chlorobenzene	14.886	112	90519	20.88	ug/L		97
89)	1,1,1,2-tetrachloroethane	14.959	131	42469	20.81	ug/L		98
90)	ethylbenzene	14.949	91	153996	20.10	ug/L		96
91)	m,p-xylene	15.079	106	119680	40.13	ug/L		97
92)	o-xylene	15.514	91	137088	19.55	ug/L		100
93)	styrene	15.524	104	101178	20.41	ug/L		93
94)	butyl acrylate	15.320	55	56489	19.37	ug/L		97
95)	isopropylbenzene	15.885	105	177518	18.61	ug/L		98
96)	bromoform	15.780	173	25039	22.71	ug/L		95
97)	cis-1,4-dichloro-2-butene	15.921	88	10225	19.69	ug/L		88
101)	1,1,2,2-tetrachloroethane	16.188	83	44438	22.16	ug/L		98
102)	trans-1,4-dichloro-2-b...	16.220	53	9301	19.57	ug/L		97
103)	1,2,3-trichloropropane	16.282	110	10417	21.47	ug/L		97
104)	bromobenzene	16.303	156	45394	21.34	ug/L		99
105)	n-propylbenzene	16.329	91	210562	20.31	ug/L		100
106)	2-chlorotoluene	16.476	126	44846	20.73	ug/L		93
107)	4-chlorotoluene	16.596	91	118838	20.32	ug/L		96
108)	1,3,5-trimethylbenzene	16.497	105	163735	19.70	ug/L		98
109)	tert-butylbenzene	16.858	119	132490	18.48	ug/L		98
110)	1,2,4-trimethylbenzene	16.910	105	170791	20.04	ug/L		99
111)	sec-butylbenzene	17.088	105	227198	19.40	ug/L		100
112)	p-isopropyltoluene	17.224	119	199828	19.68	ug/L		97
113)	1,3-dichlorobenzene	17.276	146	100492	21.61	ug/L		99
114)	1,4-dichlorobenzene	17.375	146	101174	21.68	ug/L		98
115)	1,2-dichlorobenzene	17.762	146	107518	21.73	ug/L		96
116)	Benzyl Chloride	17.464	91	79616	19.74	ug/L		100
117)	n-butylbenzene	17.653	92	105657	20.43	ug/L		99
118)	hexachloroethane	18.066	201	38300	20.54	ug/L		97
119)	1,2-dibromo-3-chloropr...	18.537	157	13121	20.69	ug/L		90
120)	1,3,5-trichlorobenzene	18.720	180	133023	23.06	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136516.D
Acq On : 22 Apr 2017 9:32 pm
Operator : [redacted]
Sample : ecc5999-20
Misc : MS14988,V3B6056,5,,,,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 24 15:57:40 2017
Quant Method : [redacted]M3B5999.M
Quant Title : SW846 8260C, Rxi624Sil MS 60m x 0.25mm x 1.4um
QLast Update : Fri Mar 03 11:41:10 2017
Response via : Initial Calibration

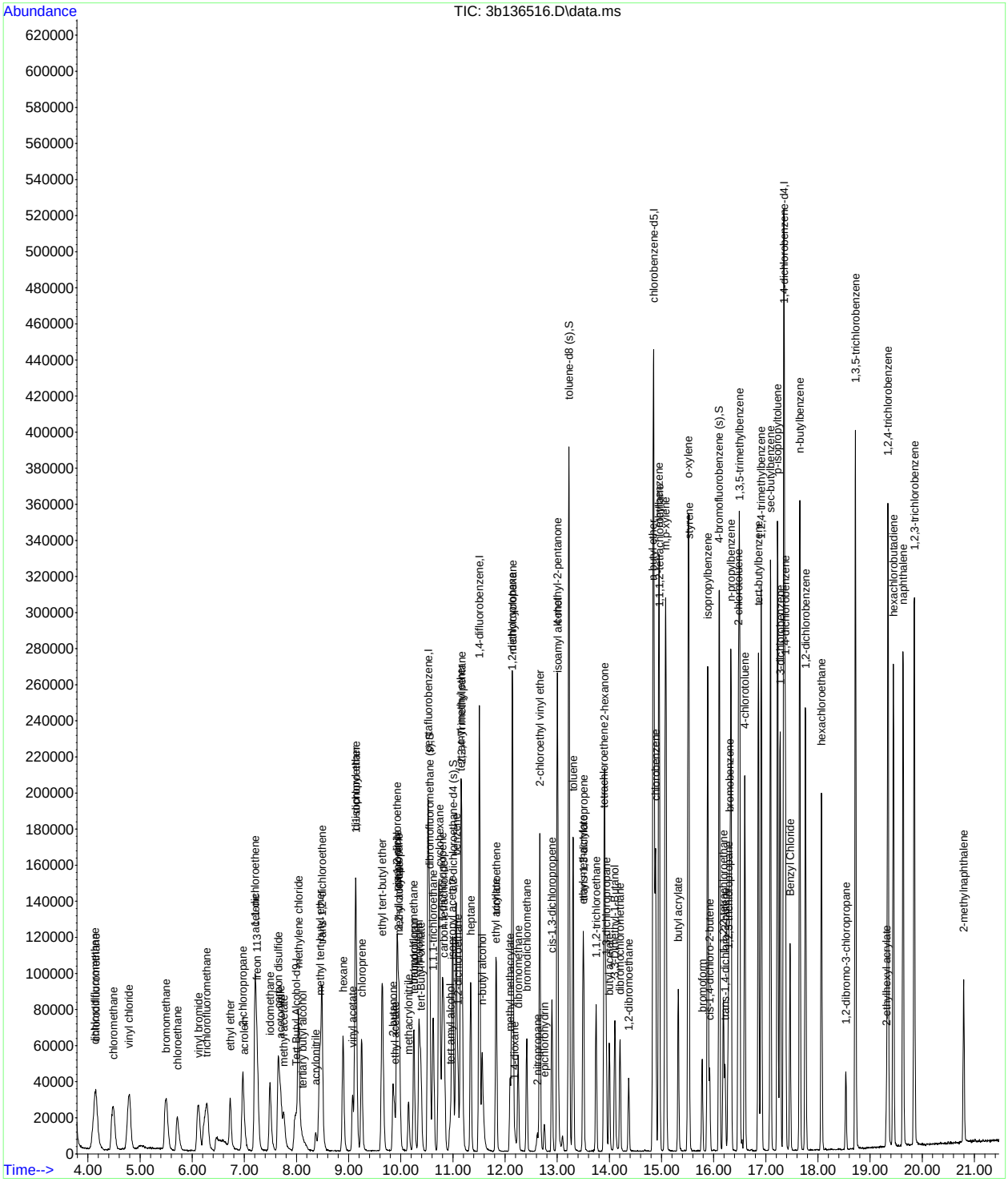
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
121) 2-ethylhexyl acrylate	19.316	70	8056	2.01	ug/L	97
122) 1,2,4-trichlorobenzene	19.342	180	119804	21.83	ug/L	99
123) hexachlorobutadiene	19.447	225	60526	20.74	ug/L	96
124) naphthalene	19.630	128	219385	20.40	ug/L	99
125) 1,2,3-trichlorobenzene	19.849	180	107670	22.27	ug/L	99
126) 2-methylnaphthalene	20.796	142	46010	8.40	ug/L	91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : [redacted]3B\v3b6055-56\
Data File : 3b136516.D
Acq On : 22 Apr 2017 9:32 pm
Operator : [redacted]
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Misc : MS14988,V3B6056,5,,,,1
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Quant Title : SW846 8260C, Rx1624Sil MS 60m x 0.25mm x 1.4um
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Response via : Initial Calibration



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VOLATILE ANALYSIS LOG

3/2

Batch ID: HC V3B5999

Date: 3/2/17

Print Analyst Nam [redacted]

Analyst Signature: [redacted]

Columns: [redacted]

Method V8260C

Initial Cal. Method M3B5999

Standard Data

Lot #	Description	Conc.
V016	V017-2417-18 Ketones	100 ppm
V016	V017-2417-30.10 B	100
V016	V016-2417-40.7 C	100
V016	V016-2417-34.1 E	100/1000
V016	V016-2417-20.3 Hex	100

Standard Data

Lot #	Description	Conc.
V016	V016-2417-30.13 STDA	100
V016	V017-2417-41.10 B	100 ppm
V016	V017-2417-47.2 C	100
V016	V017-2417-33.12 E	100/1000
V016	V017-2417-27 IS	250/2500

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

V017-2417-09.18 Ketones 400 V016-2417-36.31 Ketones 400

Supervisor Signature: [redacted] Date: 3/6/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	3B 135068	BFB													
	135069	ic5999-0.2	Initial Calibration												
	135070	ic5999-0.5	✓											1ul STDA,B,C,E, Ketones → 5ml DI H2O	
	135071	ic5999-1	✓											1ul STDA,B,C,E, Ketones → 20ml DI H2O	
	135072	ic5999-2	✓											2ul STDA,B,C,E, Ketones → 100ml DI H2O	
	135073	ic5999-5	✓											5ul STDA,B,C,E, Ketones → 100ml DI H2O	
	135074	ic5999-10	✓											10ul STDA,B,C,E, Ketones → 100ml DI H2O	
	135075	ic5999-20	✓											20ul STDA,B,C,E, Ketones → 100ml DI H2O	
	135076	ic5999-50	✓											50ul STDA,B,C,E, Ketones → 100ml DI H2O	
	135077	ic5999-100	✓											100ul STDA,B,C,E, Ketones → 100ml DI H2O	
	135078	ic5999-200	✓											200ul STDA,B,C,E, Ketones → 100ml DI H2O	
	135079	IB													
	135080	IB													
	135081	ic5999-50	✓												
	135082	IB												50ul STDA,B,C,E, Ketones → 5ml DI H2O	

3/6/17

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate.
Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result.
Strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer calculation; 4 = analyst's correction error

Form: OR001-10
Date: 1/19/16

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SGS ACCUTEST

VOLATILE ANALYSIS LOG

Batch ID: V3B6056

Date: 4/22/17

Print Analyst Name: [redacted]

Analyst Signature:

Columns: RXi (60M X 0.25mm X 1.4um)

Method VB260C

Initial Cal. Method M_3B_T999

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
V017-2451-134.7	STDA	100 ppm
V017-2451-132.1	B	100
V017-2478-09.9	C	100
V017-2451-125.1	E	100/100
V017-2451-123	TR	200/400
V017-2451-98.25	K	400

Initial Cal. Method M_3B_T999

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [redacted] Date: 4/26/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* < 2
	136492	IB													
	136493	BFB													
	136494	CCT999-20											ok	10ul STDA,B,C,K/50mL DI H2O Agitate ↑ 4, 120	
	136495	MB											ok		
	136496	BS											ok	NTU ESTA,B,C,E,K/50mL DI H2O	
	136497	JC41326-11	14988 NTU41H		11		1/10		10X				1/10	1X	7
R	136497	JC41326-1	TOH/4HR		2				1X						7
R	136498	JC41326-8			4				1X						7
	136499	JC41761-1	LT126		2				1X				ok	DDDQC	7
	136500	JC41761-2			1				1X				ok	DDDQC 1:59 pm	7
	136501	JC41326-13	14988 NTU41H		3				1X				ok		7
	136502	JC41326-1	TOH, UNPR		7				1X						7
	136503	JC41326-9			3				1X						7
	136504	JC41326-23			1				1X						7
	136505	JC41326-13MS			4				1X				ok	20ul STDA,B,C,E,K/40mL Sample	7
	136506	JC41326-13MSD							1X				ok		7
	136507	JC41326-23			1		1/10		10X						7
	136508	JC41326-15			1				1X						7

MTX = Matrix Designate W for water, S for soil, O for oil. L+ = Library Search. IS = Internal Standard Area. SU = Surrogate. Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result. All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

Form: OR001-10
Rev. Date: 1/19/16

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SGS ACCUTEST

VOLATILE ANALYSIS LOG

Batch ID: V3B6056

Date: 4/22/17

Print Analyst Name: [redacted]

Analyst Signature: [redacted]

Columns: DX(60m x 0.25mm x 1.4um)

Method VOA

Initial Cal. Method M3BT999

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
SCPG 117		

Manually integrated chromatographic peaks in the following reportable files have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 4/26/17

R	Data File	Sample ID	Test	MTX	Vial #	ALS #	Samp. Amt (ml or g)	MOH amt. (ul)	Secondary dilution	L+	IS	SU	Status (Data)	Comments	pH* <2
	3b		14988												
	136509	JC41326-10	NTEOH	G	4		5		1X				1DL	10XT	7
	136510	JC41326-12	TBA UNPR	G	4		5		1X				1DL	10XT	7
	136511	JC41326-16	✓	G	5		5		1X						7
	136512	JC41326-17	✓	G	6		5		1X				1RE	50X/10X acetone b/t	7
	136513	JC41326-18	✓	G	3		5		1X						7
	136514	JC41326-19	✓	G	3		5		1X						7
	136515	JC41326-11	✓	G	11		5		1X					9:03 pm	7
	136516	BLK999-20												9:39pm DW STD A,B,C,K/50mL DI Aq	
	136517	BLK999-10												25uL STD A,B,C,K/50mL DI Aq	
	136518	TB													
	136519	HB2													
	136520	JC41326-20	14988 NTEOH	G	3		5		1X						7
	136521	JC41326-22	TBA UNPR ✓	G	5		5		1X				1DL	10XT	7
	136522	JC41326-24	✓	G	6		5		1X						7
	136523	JC41326-25	✓	G	6		5		1X						7
															7

MTX = Matrix Designate W for water, S for soil, O for oil. L+ =Library Search. IS = Internal Standard Area. SU = Surrogate.
Sample Amt = Volume (ML) or Weight (g); MOH amt.= volume (ul) extract injected * IF pH > 2, comment on sample result.
All strike outs must be initialed, dated and reason code applied as follows: 1 = reviewer correction error; 2 = transcription error; 3 = computer miscalculation; 4 = analyst's correction error

Form: OR001-10
Rev. Date: 1/19/16

SGS ACCUTEST JC41761

USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

06 June 2017

[redacted]
Philadelphia District
[redacted]
[redacted]

RE: Deep Monitoring Wells

Enclosed are the results of analyses for samples received by the laboratory on 13-Apr-2017. The samples associated with this report will be held for 90 days from the date of this report. The raw data associated with this report will be held for 5 years from the date of this report. If you need us to hold onto the samples or the data longer then these specified times, you will need to notify us in writing at least 30 days before the expiration dates. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

J[redacted]
Database Manager

USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Philadelphia District	Project: Deep Monitoring Wells	
Wanamaker Building, 100 Penn Square East		**Reported:**
Philadelphia PA, 19107-3390	Project Manager: [redacted]	06-Jun-2017

WORK ORDER SUMMARY

Sample ID	Laboratory ID	Matrix	Date Sampled	Date of Work Order
FDR-DW 15 101 102	17D1301 01	Soil/Sediment	10-Apr-2017	13-Apr-2017
FDR-DW-15-111-112	17D1301-02	Soil/Sediment	11-Apr-2017	13-Apr-2017
FDR-DW-15-121-122	17D1301-03	Soil/Sediment	11-Apr-2017	13-Apr-2017
FDR-DW-15-130-131	17D1301-04	Soil/Sediment	11-Apr-2017	13-Apr-2017

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Philadelphia District	Project: Deep Monitoring Wells	
Wanamaker Building, 100 Penn Square East		**Reported:**
Philadelphia PA, 19107-3390	Project Manager: [redacted]	06-Jun-2017

Case Narrative

No issues were experienced during the analysis of Work Order 17D1301 unless specified below.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Philadelphia District	Project: Deep Monitoring Wells	
Wanamaker Building, 100 Penn Square East		**Reported:**
Philadelphia PA, 19107-3390	Project Manager: [redacted]	06-Jun-2017

Notes and Definitions

U	Analyte included in the analysis, but not detected
J	The reported result is an estimated value.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Philadelphia District	Project: Deep Monitoring Wells	
Wanamaker Building, 100 Penn Square East		**Reported:**
Philadelphia PA, 19107-3390	Project Manager: [redacted]	06-Jun-2017

FDR-DW-15-101-102

17D1301-01 (Soil/Sediment)

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
Classical Chemistry Parameters								
% Solids	**81.9**	0.500	0.500	% Solids	18-Apr-2017	06-Jun-2017	% Calculation	
Miscellaneous Physical/Conventional Chemistry Parameters								
FOC	**3.37**	0.00788	0.0161	[blank]	06-Jun-2017	06-Jun-2017	ASTM D2974	
Organic Matter	**0.311**	0.00122	0.00611	% dry	18-Apr-2017	18-Apr-2017	ASTM D2974	
Wet Chemistry Analysis								
TOC (Max)	**0.0108927**	0.00666	0.01	% dry	24-Apr-2017	24-Apr-2017	SW9060A	
TOC (Mean)	**0.0104832**	0.00716	0.01	% dry	24-Apr-2017	24-Apr-2017	SW9060A	
TOC (Min)	**0.0100737**	0.00775	0.01	% dry	24-Apr-2017	24-Apr-2017	SW9060A	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Philadelphia District	Project: Deep Monitoring Wells	
Wanamaker Building, 100 Penn Square East		**Reported:**
Philadelphia PA, 19107-3390	Project Manager: [redacted]	06-Jun-2017

FDR-DW-15-111-112

17D1301-02 (Soil/Sediment)

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
Classical Chemistry Parameters								
% Solids	**86.7**	0.500	0.500	% Solids	18-Apr-2017	06-Jun-2017	% Calculation	
Miscellaneous Physical/Conventional Chemistry Parameters								
FOC	**2.29**	0 00802	0 0158	[blank]	06-Jun-2017	06-Jun-2017	ASTM D2974	
Organic Matter	**0.496**	0.00115	0.00577	% dry	18-Apr-2017	18-Apr-2017	ASTM D2974	
Wet Chemistry Analysis								
TOC (Max)	**0.0117045**	0.00687	0.01	% dry	24 Apr 2017	24 Apr 2017	SW9060A	
TOC (Mean)	**0.0113577**	0.0073	0.01	% dry	24-Apr-2017	24-Apr-2017	SW9060A	
TOC (Min)	**0.0097971**	0.00687	0.01	% dry	24-Apr-2017	24-Apr-2017	SW9060A	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Philadelphia District	Project: Deep Monitoring Wells	
Wanamaker Building, 100 Penn Square East		**Reported:**
Philadelphia PA, 19107-3390	Project Manager: [redacted]	06-Jun-2017

FDR-DW-15-121-122

17D1301-03 (Soil/Sediment)

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
Classical Chemistry Parameters								
% Solids	**91.5**	0.500	0.500	% Solids	18-Apr-2017	06-Jun-2017	% Calculation	
Miscellaneous Physical/Conventional Chemistry Parameters								
FOC	**3.69**	0 00667	0 0155	[blank]	06-Jun-2017	06-Jun-2017	ASTM D2974	
Organic Matter	**0.213**	0.00109	0.00546	% dry	18-Apr-2017	18-Apr-2017	ASTM D2974	
Wet Chemistry Analysis								
TOC (Max)	**0.00895785**	0.00558	0.01	% dry	24 Apr 2017	24 Apr 2017	SW9060A	J
TOC (Mean)	**0.007869**	0.0055	0.01	% dry	24-Apr-2017	24-Apr-2017	SW9060A	J
TOC (Min)	**0.0066246**	0.00542	0.01	% dry	24-Apr-2017	24-Apr-2017	SW9060A	J

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Philadelphia District	Project: Deep Monitoring Wells	
Wanamaker Building, 100 Penn Square East		**Reported:**
Philadelphia PA, 19107-3390	Project Manager: [redacted]	06-Jun-2017

FDR-DW-15-130-131

17D1301-04 (Soil/Sediment)

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Prepared	Analyzed	Method	Notes
Classical Chemistry Parameters								
% Solids	**88.7**	0.500	0.500	% Solids	18-Apr-2017	06-Jun-2017	% Calculation	
Miscellaneous Physical/Conventional Chemistry Parameters								
FOC	**2.54**	0 00861	0 0156	[blank]	06-Jun-2017	06-Jun-2017	ASTM D2974	
Organic Matter	**0.565**	0.00113	0.00564	% dry	18-Apr-2017	18-Apr-2017	ASTM D2974	
Wet Chemistry Analysis								
TOC (Max)	**0.0174739**	0.00748	0.01	% dry	24 Apr 2017	24 Apr 2017	SW9060A	
TOC (Mean)	**0.0143694**	0.00694	0.01	% dry	24-Apr-2017	24-Apr-2017	SW9060A	
TOC (Min)	**0.0119745**	0.00647	0.01	% dry	24-Apr-2017	24-Apr-2017	SW9060A	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Philadelphia District	Project: Deep Monitoring Wells	
Wanamaker Building, 100 Penn Square East		**Reported:**
Philadelphia PA, 19107-3390	Project Manager: [redacted]	06-Jun-2017

Classical Chemistry Parameters - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B17D056 - * DEFAULT PREP *** **											
Duplicate (B17D056-DUP1)	**Source: 17D1301-03**			Prepared: 18-Apr-2017 Analyzed: 06-Jun-2017							
% Solids	99.3	0.500	0.500	% Solids		91.5			8.21	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Philadelphia District	Project: Deep Monitoring Wells	
Wanamaker Building, 100 Penn Square East		**Reported:**
Philadelphia PA, 19107-3390	Project Manager: [redacted]	06-Jun-2017

Miscellaneous Physical/Conventional Chemistry Parameters - Quality Control

ERDC-EL-EP-C

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B17D056 - * DEFAULT PREP *****											
Blank (B17D056-BLK1)					Prepared & Analyzed: 18-Apr-2017						
Organic Matter	ND	0.00100	0.00500	% wet							U
LCS (B17D056-BS1)					Prepared & Analyzed: 18-Apr-2017						
Organic Matter	56.2	0.00100	0.00500	% wet	80.81		69.6	70-130			
Duplicate (B17D056-DUP1)		**Source: 17D1301-03**			Prepared & Analyzed: 18-Apr-2017						
Organic Matter	0.241	0.00109	0.00546	% dry		0.213			12.2	30	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

USACE ERDC-EP-C
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Philadelphia District
Wanamaker Building, 100 Penn Square East
Philadelphia PA, 19107-3390

Project: Deep Monitoring Wells

Project Manager: [redacted]

Reported:
06-Jun-2017

Wet Chemistry Analysis - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BAD0644 - No Prep											
Blank (BAD0644-BLK1)					Prepared & Analyzed: 24-Apr-2017						
TOC (Max)	ND	0.008	0.008	%				-			
TOC (Mean)	ND	0.008	0.008	%				-			
TOC (Min)	ND	0.008	0.008	%				-			
Blank (BAD0644-BLK2)					Prepared & Analyzed: 24-Apr-2017						
TOC (Max)	ND	0.008	0.008	%				-			
TOC (Mean)	ND	0.008	0.008	%				-			
TOC (Min)	ND	0.008	0.008	%				-			
LCS (BAD0644-BS1)					Prepared & Analyzed: 24-Apr-2017						
TOC (Max)	0.104	0.008	0.01	%	0.1		104	80-120			
TOC (Mean)	0.104	0.008	0.01	%	0.1		104	80-120			
TOC (Min)	0.104	0.008	0.01	%	0.1		104	80-120			
LCS Dup (BAD0644-BSD1)					Prepared & Analyzed: 24-Apr-2017						
TOC (Max)	0.104	0.008	0.01	%	0.1		104	80-120	0.695	20	
TOC (Mean)	0.104	0.008	0.01	%	0.1		104	80-120	0.695	20	
TOC (Min)	0.104	0.008	0.01	%	0.1		104	80-120	0.695	20	
Matrix Spike (BAD0644-MS1)		Source: 17D0577-02			Prepared & Analyzed: 24-Apr-2017						
TOC (Max)	0.109	0.00774	0.01	%	0.0967	0.0135	98.7	80-120			
TOC (Mean)	0.109	0.00774	0.01	%	0.0967	0.0131	99.2	80-120			
TOC (Min)	0.109	0.00774	0.01	%	0.0967	0.0113	101	80-120			
Matrix Spike Dup (BAD0644-MSD1)		Source: 17D0577-02			Prepared & Analyzed: 24-Apr-2017						
TOC (Max)	0.0948	0.00684	0.01	%	0.0855	0.0135	95.1	80-120	13.9	20	
TOC (Mean)	0.0948	0.00684	0.01	%	0.0855	0.0131	95.6	80-120	13.9	20	
TOC (Min)	0.0948	0.00684	0.01	%	0.0855	0.0113	97.7	80-120	13.9	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

ERDC SAMPLE RECEIPT CHECKLIST

Client:				Work Order: 170130
Project:				Date/Time Received 4/13/17 11:35
Shipping Company:				
Suspected Hazard Information	**Yes**	**No**	**NA**	**Comments:**
Shipped as DOT Hazardous?		✓		
Samples identified as Foreign Material?		✓		
Sample Receipt Criteria	**Yes**	**No**	**NA**	**Comments:**
1. Shipping containers received intact and sealed?	✓			
2. Chain of Custody documents included with shipment?	✓			
3. COC form is properly signed in relinquished/received sections?	✓			
4. Samples requiring chemical preservation at proper pH?			✓	
5. Samples requiring cold preservation within 0-5°C?	✓			4.4 °C
6. Samples IDs on COC match IDs on containers?	✓			
7. Date and time of COC match date and time on containers?	✓			
8. Number of containers received match number indicated on COC?	✓			
9. Samples received within holding time?	✓			
10. Aqueous samples found to have visible solids?			✓	

Additional Comments:

Checklist preformed by: [redacted]

Time/Date: 4/13/17 1145

CHAIN OF CUSTODY RECORD
USACE ERDC Laboratories, 3909 Halls Ferry Road, Vicksburg, MS 39180

# of Sampling Sites	Sample Info					Sample Type	# of Containers	Requested Analyses								
	Site Name: DSCP - Philadelphia PA			Project Name: Deep Monitoring Wells				TOC/FOC								
	Name	date	time	depth	Preservative											
1	FDR-DW-15-101-102	4/10/17	1530	101-102	none	SOIL	1	1								
2	FDR-DW-15-111-112	4/11/17	0900	111-112	none	SOIL	1	1								
3	FDR-DW-15-121-122	4/11/17	1125	121-122	none	SOIL	1	1								
4	FDR-DW-15-130-131	4/11/17	1400	130-131	none	SOIL	1	1								
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
Total							0	#REF!	0	0	0	0	0	0	0	0

1. I hereby transfer the sample containers to ERDC. Samples have been properly labeled and kept on ice or refrigerated.

Released By: [redacted]

2. I accept these samples for transfer to ERDC:

Received By: [redacted] **Date** 4/12/2017

4 Cooler temperature upon arrival at ERDC: **Date** 4/13/17

From [redacted] CENAP [redacted]
[redacted] @usace.army.mil

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception
			Data included from: w:\TransferIn\17D1301 TRANSFER 06 Jun 2017 0838.mdb

US Army Corps of Engineers Philadelphia District

Defense Supply Center Philadelphia
Quick Domenico Parameters
Porosity (decimal fraction)
7/28/2017

Sample A was collected from well DW-NOVA-14 on April 25, 2017. Sample B was collected from well DW-FDR-15 on April 11, 2017. Samples were collected using two-foot split spoons at 110-112 ft bgs and were bottled immediately after retrieval. Once at the laboratory, the sample was re-saturated to replace any lost moisture. Re-saturation was accomplished by packing the soil sample into a 100 mL beaker and topping it off with water. Cheesecloth was wrapped over the end of the beaker containing the soil sample and drained. The re-saturated samples were then placed in the oven and dried in two twelve-hour cycles. The sample mass was recorded before and after drying. Results and calculations are shown below.

		Samples		
		A	B	
W	Mass of saturated samples in containers, grams (measured)	266.2	263.9	
C	Mass of containers, grams (measured)	48.5	49.2	
Wd	Mass of dried samples in containers, grams (measured)	221	221.9	
Wt	Mass of wet soil	217.7	214.7	W - C
Ws	Mass of dried soil	172.5	172.7	Wd - C
Ww	Mass of water lost	45.2	42.0	Wt - Ws
M	Wet moisture content of sample, fractional	0.208	0.196	Ww / Wt
Pt	Porosity of of a saturated soil sample, assuming average values for water and particle density	0.410	0.392	M / [M + (1-M)/2.65]

Attachment E
Figures

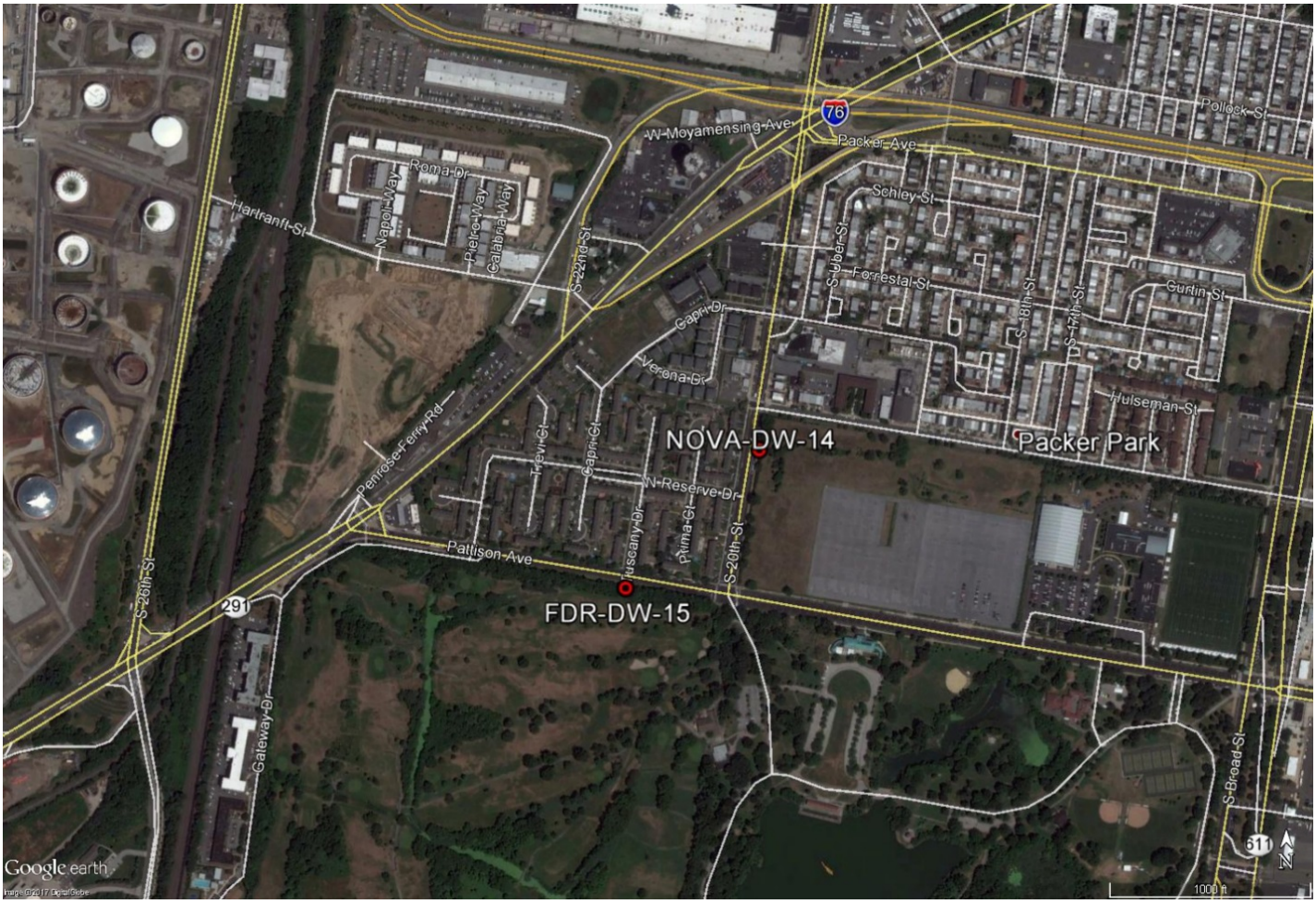


Figure 1. Location Map

Appendix E

Stormwater Basin Drawings

CONSTRUCTION DRAWINGS AND SPECIFICATIONS

PWD STORMWATER CREDIT RETROFIT DESIGN
SITE 13
PHASE-3

FOR:

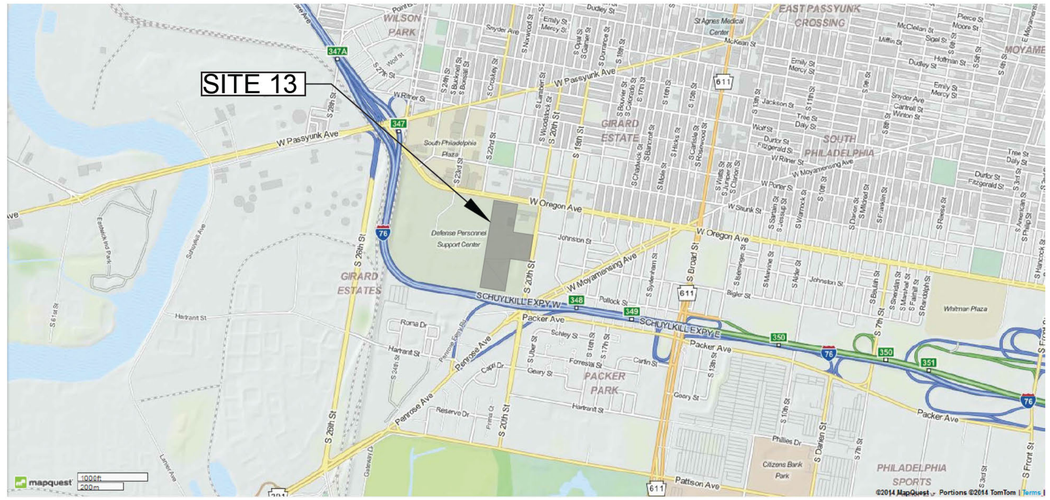
[redacted]

1533 SKIPPACK PIKE, SUITE 2
BLUE BELL, PA 19422
P: (484) 704-7200
F: (267) 200-0414

PREPARED BY:

H2O
infrastructure, LLC

REV 0	TECHNICAL PLAN REVIEW	NOVEMBER 10, 2016
REV 1	TECHNICAL PLAN REVIEW	DECEMBER 05, 2016
REV 2	TECHNICAL PLAN REVIEW	JANUARY 27, 2017
REV 3	TECHNICAL PLAN REVIEW	FEBRUARY 16, 2017
REV 4	TECHNICAL PLAN REVIEW	FEBRUARY 22, 2017
REV 5	TECHNICAL PLAN REVIEW	FEBRUARY 27, 2017
REV 6	ISSUED FOR CONSTRUCTION (WITH FIELD CHANGE)	MARCH 6,2017
REV 7	ISSUED FOR CONSTRUCTION	MARCH 13,2017



VICINITY MAP
SCALE: 1" = 2000'

LIST OF DRAWINGS:

CS-1	COVER SHEET
C-050	SITE PHASING PLAN
C-100	TOPOGRAPHIC SURVEY PLAN (DELAWARE VALLEY DATA COLLECTION, INC)
C-101	EXISTING CONDITIONS & DEMOLITION PLAN
C-130	UTILITY PLAN
C-140	EROSION & SEDIMENT CONTROL PLAN
C-141	EROSION & SEDIMENT CONTROL DETAILS AND NOTES - 1
C-142	EROSION & SEDIMENT CONTROL DETAILS AND NOTES - 2
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C-502	SMP ENLARGEMENT PLAN & DETAILS-2
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C-601	BUILDING INTERNAL PLUMBING PLAN - 1
C-602	BUILDING INTERNAL PLUMBING PLAN - 2
C-801	SITE AND STORMWATER DETAILS - 1
C-802	SITE AND STORMWATER DETAILS - 2
C-803	SITE AND STORMWATER DETAILS - 3
C-804	SITE AND STORMWATER DETAILS - 4
C-805	SITE AND STORMWATER DETAILS - 5
C-806	MAINTENANCE SCHEDULE

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER MICHAEL J. BOYLE NO. 061136

PWD TRACKING NUMBER:

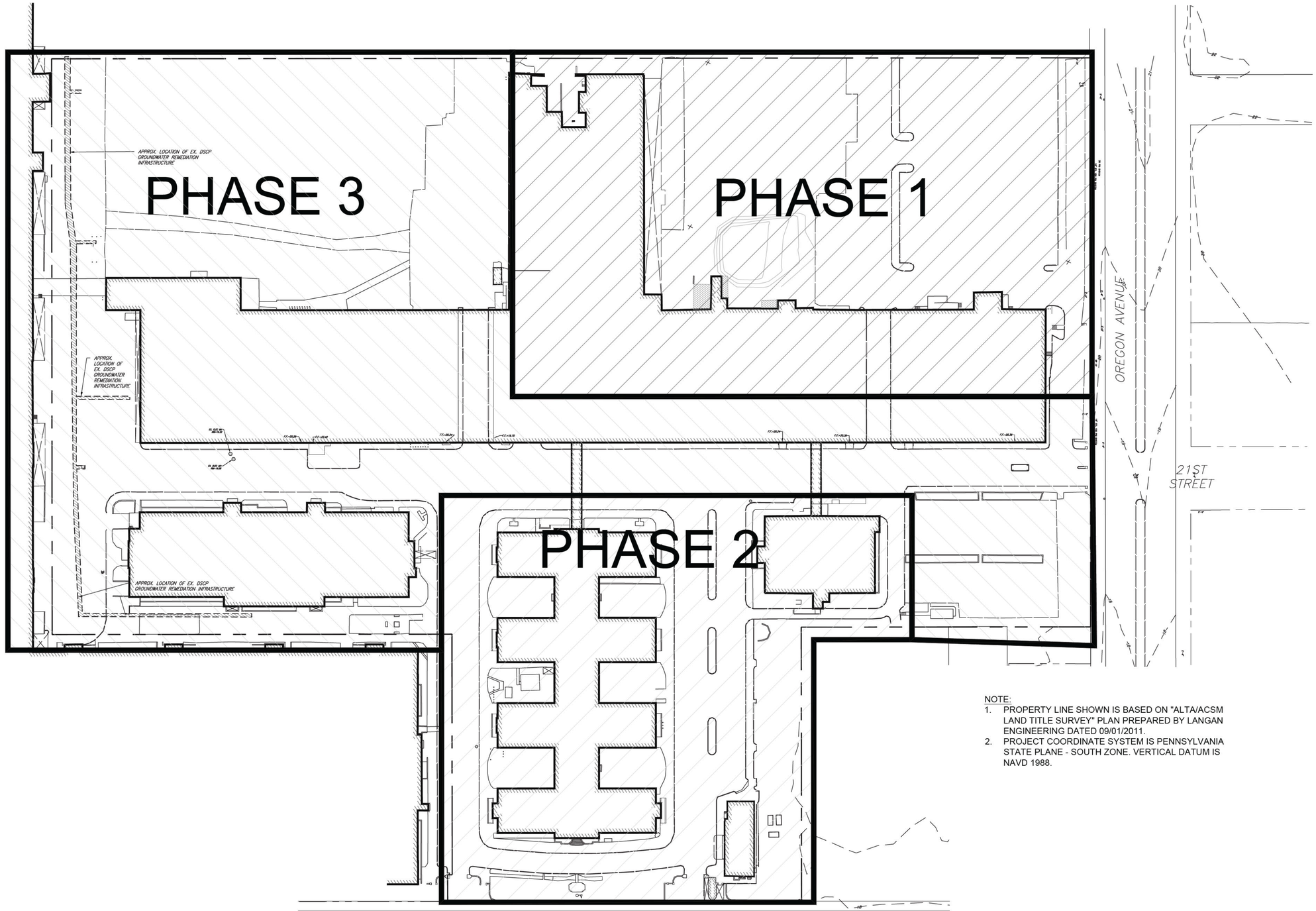
[redacted]

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SITE 13-PROGRESS PLAN-ISSUED FOR CONSTRUCTION

3/15/2017 11:40 AM

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NOTE:
1. PROPERTY LINE SHOWN IS BASED ON "ALTA/ACSM LAND TITLE SURVEY" PLAN PREPARED BY LANGAN ENGINEERING DATED 09/01/2011.
2. PROJECT COORDINATE SYSTEM IS PENNSYLVANIA STATE PLANE - SOUTH ZONE. VERTICAL DATUM IS NAVD 1988.

50' 0 50' 100'
scale feet
SCALE: 1"=50'

FOR CONSTRUCTION - ISSUED FOR SITE 13-3

ISS Infrastructure Solution Services
A Design/Build Company
1533 SKIPPACK PIKE, SUITE 2
BLUE BELL, PA 19422
P: (484) 704-7200
F: (267) 200-0414

No.	Revision/Issue	Date
7	ISSUED FOR CONSTRUCTION	3/13/2017
6	ISSUED FOR CONSTRUCTION (W/ FIELD CHANGE)	3/6/2017
5	TECHNICAL PLAN REVIEW (IFC)	2/27/2017
4	TECHNICAL PLAN REVIEW	2/22/2017
3	TECHNICAL PLAN REVIEW	2/16/2017
2	TECHNICAL PLAN REVIEW	1/27/2017
1	TECHNICAL PLAN REVIEW	12/5/2016
0	TECHNICAL PLAN REVIEW	11/10/2016

CALL BEFORE YOU DIG
Toolkit 811
PA. ONE CALL

PWD TRACKING NUMBER: FY17-STHS-4442-01
DRAWN By : D.H.T.
DESIGNED BY : M.W.M.
CHECKED BY : M.J.C.
DATE : 10-24-2016
SCALE : AS NOTED
CAD FILENAME: C-050.dwg

PROJECT:
PWD STORMWATER CREDIT RETROFIT DESIGN
SITE 13 - PHASE 3
FOR
SKY MANAGEMENT
2810 S. 20TH STREET
PHILADELPHIA, PA

SEAL:
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL JOSEPH COYLE
ENGINEER
NO. 061136

MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

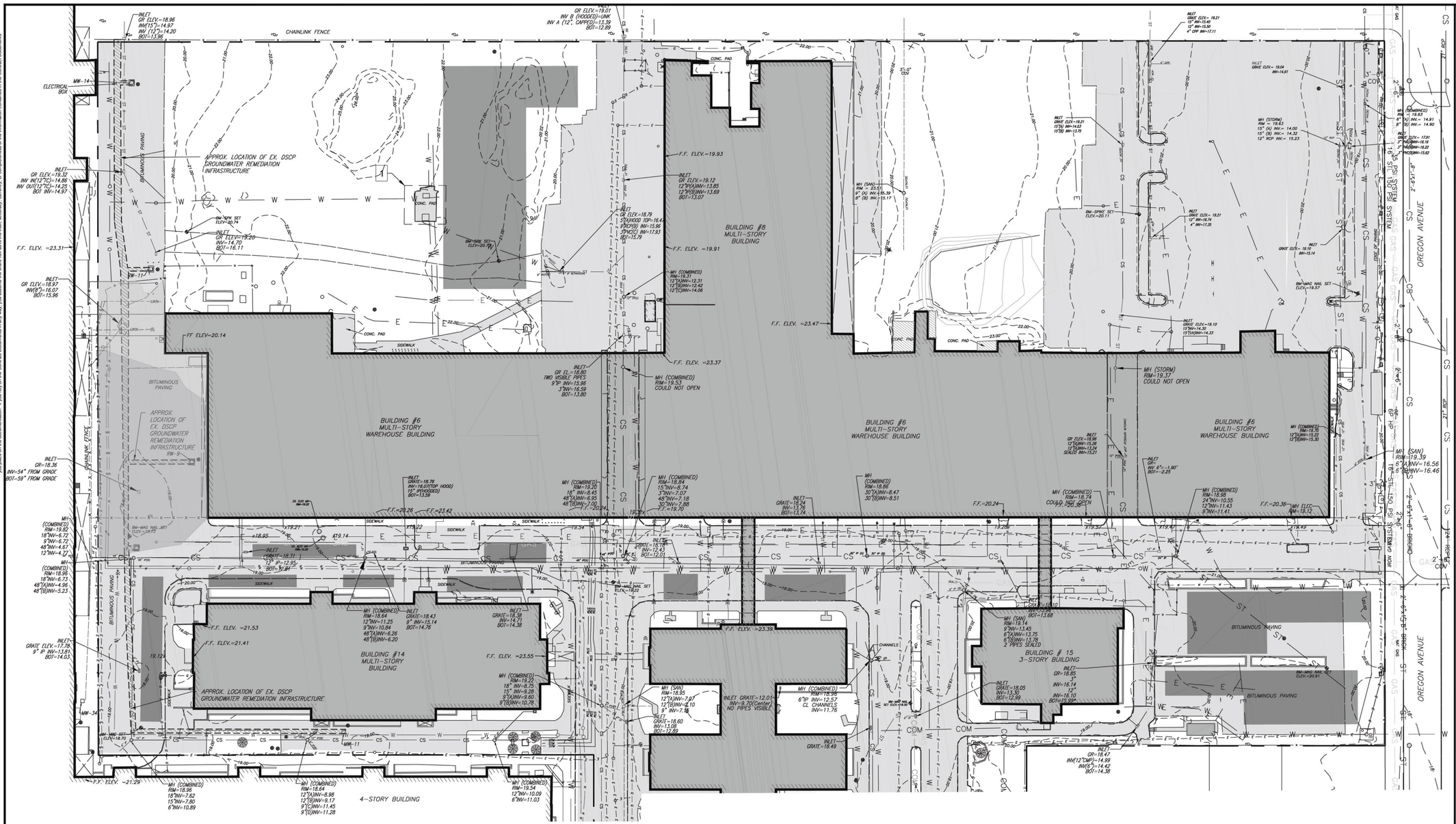
H2O Infrastructure, LLC
1533 SKIPPACK PIKE, SUITE 1
BLUE BELL, PA 19422
PHONE: (484) 704-7417
FAX: (267) 200-0414

SHEET TITLE:
SITE PHASING PLAN

SHEET NUMBER:
C-050

3/15/2017 11:42 AM

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LEGEND:

- EXISTING PROPERTY LINE
- EXISTING CATCH BASIN
- EXISTING MANHOLE
- ST — EXISTING STORM LINE
- SAN — EXISTING SANITARY LINE
- W — EXISTING WATER LINE
- E — EXISTING ELECTRIC LINE
- G — EXISTING GAS LINE
- COM — EXISTING COMMUNICATIONS LINE
- CS — EXISTING COMBINED SEWER LINE
- EXISTING ROOF DRAIN LINE
- EXISTING CONTOUR LINE
- MW — EXISTING GROUNDWATER MONITORING WELL
- RW — EXISTING GROUNDWATER RECOVERY WELL
- ASPHALT PAVING
- BUILDING

SHEET NOTES

1 PROPOSED PARTIAL DEMOLITION OF EXISTING CONCRETE VAULT. APPROXIMATELY 35'x21' AREA TO BE RAZED ABOUT 1' TO MATCH EXISTING GRADE AND FILLED.

GENERAL NOTES:

1. PROPERTY LINE SHOWN IS BASED ON "ALTA/ACSM LAND TITLE SURVEY" PLAN PREPARED BY LANGAN ENGINEERING DATED 09/01/2011.
2. PROJECT COORDINATE SYSTEM IS PENNSYLVANIA STATE PLANE - SOUTH ZONE. VERTICAL DATUM IS NAVD 1988.

30' 0 30' 60' scale feet

SCALE: 1"=30'

FOR CONSTRUCTION - ISSUED FOR CONSTRUCTION (WI FIELD CHANGE) - SITE 13-3

ISS Infrastructure Solution Services
A Design/Build Company
1533 SKIPPACK PIKE, SUITE 2
BLUE BELL, PA 19422
P: (484) 704-7200
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No.	Revision/Issue	Date
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PA. ONE CALL

PWD TRACKING NUMBER: FY17-STHS-4442-01
DRAWN By : D.H.T.
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CHECKED BY : M.J.C.
DATE : 10-24-2016
SCALE : AS NOTED
CAD FILENAME: C-101.dwg

PROJECT:
PWD STORMWATER CREDIT RETROFIT DESIGN
SITE 13 - PHASE 3
FOR
SKY MANAGEMENT
2810 S. 20TH STREET
PHILADELPHIA, PA

SEAL:
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL JOSEPH COYLE ENGINEER NO. 061136

MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

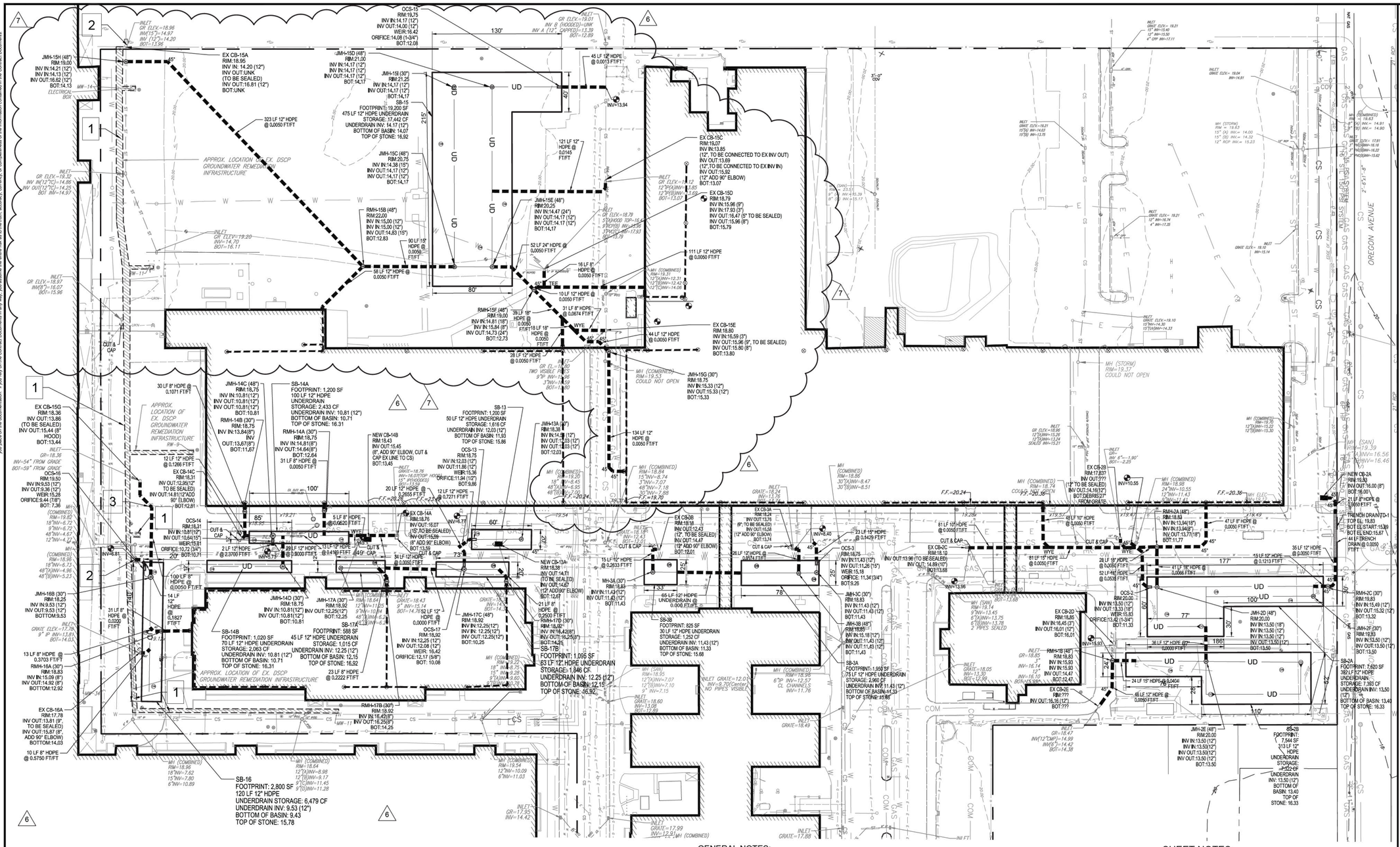
H2O Infrastructure, LLC
1533 SKIPPACK PIKE, SUITE 1
BLUE BELL, PA 19422
PHONE: (484) 704-7417
FAX: (267) 200-0414

SHEET TITLE:
EXISTING CONDITIONS & DEMOLITION PLAN

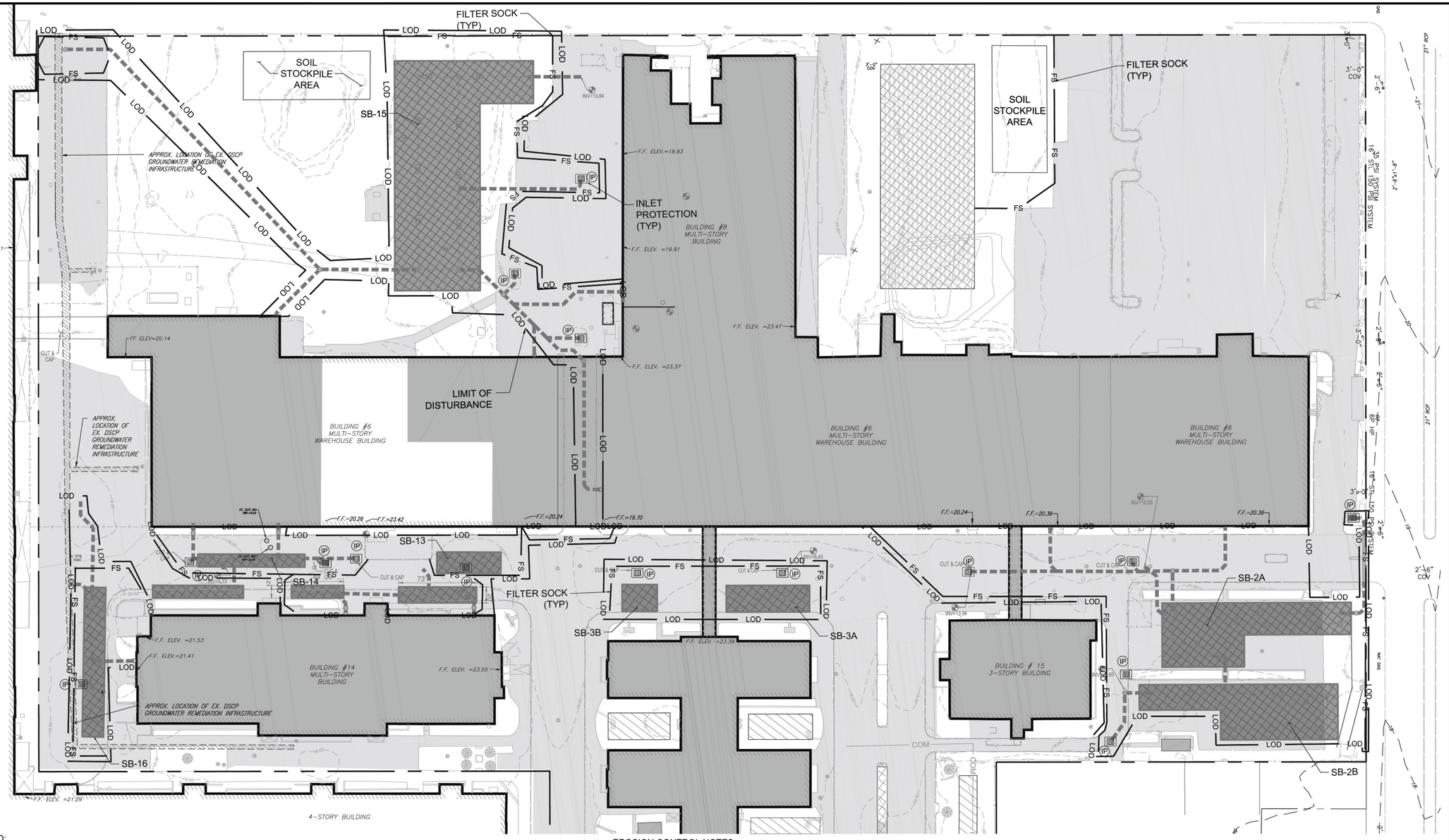
SHEET NUMBER:
C-101

3/15/2017 11:46 AM

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APPROX. LOCATION OF EX. DSCP GROUNDWATER REMEDIATION INFRASTRUCTURE
APPROX. LOCATION OF EX. DSCP GROUNDWATER REMEDIATION INFRASTRUCTURE
APPROX. LOCATION OF EX. DSCP GROUNDWATER REMEDIATION INFRASTRUCTURE
OREGON AVENUE
JMH-15H (48") RIM:19.00 INV IN:14.21 (12") INV OUT:14.13 (12") INV OUT:16.62 (12") BOT:14.13
EX CB-15A RIM:18.95 INV IN: 14.20 (12") INV OUT:UNK (TO BE SEALED) INV OUT:16.81 (12") BOT:UNK
OCS-15 RIM:19.75 INV IN:14.17 (12") INV OUT:14.00 (12") WEIR:16.42 ORIFICE:14.08 (1-3/4") BOT:12.08
JMH-15D (48") RIM:21.00 INV IN:14.17 (12") INV OUT:UNK
JMH-15I (30") RIM:21.25 INV IN:14.17 (12") INV OUT:14.17 (12") BOT:14.17
SB-15 FOOTPRINT: 19,200 SF 475 LF 12" HDPE UNDERDRAIN STORAGE: 17,442 CF UNDERDRAIN INV: 14.17 (12") BOTTOM OF BASIN: 14.07 TOP OF STONE: 16.92
45 LF 12" HDPE @ 0.0013 FT/FT
INV=13.94
323 LF 12" HDPE @ 0.0050 FT/FT
121 LF 12" HDPE @ 0.0145 FT/FT
JMH-15C (48") RIM:20.75 INV IN:14.38 (15") INV OUT:14.17 (12") INV OUT:14.17 (12") BOT:14.17
JMH-15E (48") RIM:20.25 INV IN:14.47 (24") INV OUT:14.17 (12") INV OUT:14.17 (12") BOT:14.17
EX CB-15C INV IN:13.85 (12", TO BE CONNECTED TO EX INV OUT) INV OUT:13.69 (12",TO BE CONNECTED TO EX INV IN) INV OUT:15.82 (12" ADD 90° ELBOW) BOT:13.07
EX CB-15D RIM:18.79 INV IN:15.96 (9") INV IN:17.93 (3") INV OUT:16.47 (5" TO BE SEALED) INV OUT:15.96 (8") BOT:15.79
RMH-15B (48") RIM:22.00 INV IN:15.00 (12") INV IN:15.00 (12") INV OUT:14.83 (15") BOT:12.83
90 LF 15" HDPE @ 0.0059 FT/FT
52 LF 24" HDPE @ 0.0050 FT/FT
16 LF 8" HDPE @ 0.0050 FT/FT
58 LF 12" HDPE @ 0.0050 FT/FT
111 LF 12" HDPE @ 0.0050 FT/FT
10 LF 12" HDPE @ 0.0050 FT/FT
RMH-15F (48") RIM:19.00 INV IN:14.81 (18") INV IN:15.84 (8") INV OUT:14.73 (24") BOT:12.73
39 LF 18" HDPE @ 0.0050 FT/FT
31 LF 8" HDPE @ 0.0674 FT/FT
18 LF 18" HDPE @ 0.0050 FT/FT
44 LF 12" HDPE @ 0.0050 FT/FT
EX CB-15E RIM:18.80 INV IN:16.59 (3") INV OUT:15.96 (9", TO BE SEALED) INV OUT:15.80 (8") BOT:13.80
28 LF 12" HDPE @ 0.0050 FT/FT
MH (COMBINED) RIM=19.53 COULD NOT OPEN
JMH-15G (30") RIM:18.75 INV IN:15.33 (12") INV OUT:15.33 (12") BOT:15.33
MH (STORM) RIM=19.37 COULD NOT OPEN
JMH-14C (48") RIM:18.75 INV IN:10.81 (12") INV OUT:10.81 (12") INV OUT:10.81 (12") BOT:10.81
SB-14A FOOTPRINT: 1,200 SF 100 LF 12" HDPE UNDERDRAIN STORAGE: 2,433 CF UNDERDRAIN INV: 10.81 (12") BOTTOM OF BASIN: 10.71 TOP OF STONE: 16.31
RMH-14B (30") INV RIM:18.75 INV IN:14.81(8") INV OUT:13.67(8") BOT:11.67
RMH-14A (30") RIM:18.75 INV IN:14.81(8") INV OUT:14.64(8") BOT:12.64
31 LF 8" HDPE @ 0.0050 FT/FT
NEW CB-14B RIM:18.43 INV OUT:15.45 (6", ADD 90° ELBOW, CUT & CAP EX LINE TO CS) BOT:13.45
SB-13 FOOTPRINT: 1,200 SF 50 LF 12" HDPE UNDERDRAIN STORAGE: 1,616 CF UNDERDRAIN INV: 12.03 (12") BOTTOM OF BASIN: 11.93 TOP OF STONE: 15.86
OCS-13 RIM:18.75 INV IN:12.03 (12") INV OUT:11.86 (12") WEIR:15.36 ORIFICE:11.94 (1/2") BOT:9.86
JMH-13A (30") RIM:18.38 INV IN:14.53 (12") INV OUT:12.03 (12") INV OUT:12.03 (12") BOT:12.03
134 LF 12" HDPE @ 0.0050 FT/FT
MH (COMBINED) RIM=18.84 15"(W)=8.45 48"(A)=6.65 48"(B)=6.65 F.F.=20.24
MH (COMBINED) RIM=18.74 COULD NOT OPEN F.F.=20.36
EX CB-15A RIM:18.96 INV OUT:13.86 (TO BE SEALED) INV OUT:15.44 (8" HOOD) BOT:13.44
30 LF 8" HDPE @ 0.1071 FT/FT
32 LF 12" HDPE @ 0.1266 FT/FT
EX CB-14C RIM:18.32 INV OUT:12.95(12" TO BE SEALED) INV OUT:14.81(12"x20° 90° ELBOW) BOT:12.81
EX CB-14A RIM:18.76 INV OUT:15.07 (15",TO BE SEALED) INV OUT:15.59 (8" ADD 90° ELBOW) BOT:13.59
5 LF 8" HDPE @0.0620 FT/FT
2 LF 12" HDPE @ 2.3700 FT/FT
13 LF 12" HDPE @ 0.9400 FT/FT
34 LF 12" HDPE @ 0.0050 FT/FT
20 LF 12" HDPE @ 0.0555 FT/FT
12 LF 12" HDPE @ 0.7271 FT/FT
NEW CB-13A RIM:18.38 INV OUT:14.71 (TO BE SEALED) INV OUT:14.67 (12" ADD 90° ELBOW) BOT:12.67
15 LF 12" HDPE @ 0.2633 FT/FT
65 LF 12" HDPE UNDERDRAIN @ 0.0000 FT/FT
MH-3A (30") RIM:18.83 INV IN:11.43 (12") INV OUT:11.43 (12") BOT:11.43
21 LF 8" HDPE @ 0.2500 FT/FT
RMH-17D (30") RIM:18.92 INV IN:16.42(8") INV OUT:16.25(8") BOT:14.25
SB-17A
SB-17B FOOTPRINT: 1,055 SF 53 LF 12" HDPE UNDERDRAIN STORAGE: 1,846 CF UNDERDRAIN INV: 12.25 (12") BOTTOM OF BASIN: 12.15 TOP OF STONE: 16.92
SB-3B FOOTPRINT: 825 SF 30 LF 12" HDPE UNDERDRAIN STORAGE: 1,252 CF UNDERDRAIN INV: 11.43 (12") BOTTOM OF BASIN: 11.33 TOP OF STONE: 15.68
JMH-3C (30") RIM:18.83 INV IN:11.43 (12") INV OUT:11.43 (12") BOT:11.43
JMH-3B (48") RIM:18.85 INV IN:15.18 (12") INV OUT:11.43 (12") INV OUT:11.43 (12") BOT:11.43
SB-3A FOOTPRINT: 1,959 SF 75 LF 12" HDPE UNDERDRAIN STORAGE: 2,960 CF UNDERDRAIN INV: 11.43 (12") BOTTOM OF BASIN: 11.33 TOP OF STONE: 15.68
EX CB-3B RIM:18.16 INV OUT:12.43 (12", TO BE SEALED) INV OUT:14.47 (12" ADD 90° ELBOW) BOT:12.01
EX CB-3A RIM:18.24 INV OUT:13.75 (6", TO BE SEALED) INV OUT:15.58 (12" ADD 90° ELBOW) BOT:13.74
EX CB-2C RIM:18.12 INV OUT:13.96 (TO BE SEALED) INV OUT: 14.89 (10") BOT:13.66
EX CB-2D RIM:18.85 INV IN:16.45 (3") INV OUT:16.01 (12") BOT:16.01
EX CB-2E RIM:??? INV OUT:16.16 (12") BOT:???
OCS-2 RIM:20.00 INV IN:13.50 (12") INV OUT:13.33 (18") WEIR:15.83 ORIFICE:13.42 (1-3/4") BOT:11.33
OCS-3 RIM:18.75 INV IN:11.43 (12") INV OUT:11.26 (15") WEIR:15.18 ORIFICE: 11.34(3/4") BOT:9.26
OCS-17 RIM:18.92 INV IN:12.25 (12") INV OUT:12.08 (12") WEIR: 15.42 ORIFICE:12.17 (5/8") BOT: 10.08
JMH-17A (30") RIM:18.92 INV IN:10.81(12") INV OUT:12.25(12") BOT:12.25
JMH-17C (48") RIM:18.92 INV IN:12.25(12") INV IN: 12.25(12") INV OUT:12.25(12") BOT:10.25
JMH-14D (30") RIM:18.75 INV IN:10.81(12") INV OUT:10.81(12") BOT:10.81
SB-14B FOOTPRINT: 1,020 SF 70 LF 12" HDPE UNDERDRAIN STORAGE: 2,063 CF UNDERDRAIN INV: 10.81 (12") BOTTOM OF BASIN: 10.71 TOP OF STONE: 16.31
45 LF 12" HDPE UNDERDRAIN FOOTPRINT: 588 SF STORAGE: 1,015 CF UNDERDRAIN INV: 12.25 (12") BOTTOM OF BASIN: 12.15 TOP OF STONE: 16.92
23 LF 8" HDPE @ 0.2222 FT/FT
RMH-16B (30") RIM:18.25 INV IN:9.53 (12") INV OUT:9.53 (12") BOTTOM:9.53
14 LF 12" HDPE @ 0.1827 FT/FT
31 LF 8" HDPE @ 0.0200 FT/FT
13 LF 8" HDPE @ 0.3703 FT/FT
RMH-16A (30") RIM:18.83 INV IN:15.09 (8") INV OUT:14.92 (8") BOTTOM:12.92
EX CB-16A RIM:17.78 INV OUT:13.81 (9", TO BE SEALED) INV OUT:15.87 (8", ADD 90° ELBOW) BOTTOM:14.03
10 LF 8" HDPE @ 0.5750 FT/FT
RMH-17B (30") RIM:18.92 INV IN:16.43(8") INV OUT:16.25(8") BOT:14.25
SB-16 FOOTPRINT: 2,800 SF 120 LF 12" HDPE UNDERDRAIN STORAGE: 6,479 CF UNDERDRAIN INV: 9.53 (12") BOTTOM OF BASIN: 9.43 TOP OF STONE: 15.78
SB-2A FOOTPRINT: 7,620 SF 182 LF 12" HDPE UNDERDRAIN STORAGE: 7,393 CF UNDERDRAIN INV: 13.50 (12") BOTTOM OF BASIN: 13.40 TOP OF STONE: 16.33
SB-2B FOOTPRINT: 7,544 SF 313 LF 12" HDPE UNDERDRAIN STORAGE: 7,322 CF UNDERDRAIN INV: 13.50 (12") BOTTOM OF BASIN: 13.40 TOP OF STONE: 16.33
NEW CB-2A RIM:19.83 INV OUT:16.00 (8") BOT:16.00
21 LF 8" HDPE @ 0.0050 FT/FT
TRENCH DRAIN/TD-1 TOP EL: 19.83 BOT EL:START: 15.90 BOT EL:END:15.67
44 LF TRENCH DRAIN @ 0.0050 FT/FT
RMH-2A (48") RIM:18.83 INV IN:13.94(18") INV IN:13.94(8") INV OUT:13.77(18") BOT:11.77
47 LF 8" HDPE @ 0.0050 FT/FT
47 LF 10" HDPE @ 0.0050 FT/FT
41 LF 18" HDPE @ 0.0066 FT/FT
81 LF 10" HDPE @ 0.0050 FT/FT
81 LF 15" HDPE @ 0.0050 FT/FT
15 LF 12" HDPE @ 0.1213 FT/FT
35 LF 12" HDPE @ 0.0050 FT/FT
RMH-2C (30") RIM:19.83 INV IN:15.49 (12") INV OUT:15.32 (12") BOT:13.32
JMH-2D (48") RIM:20.00 INV IN:13.50 (18") INV IN:13.50 (12") INV IN:13.50 (12") INV OUT:13.50 (12") BOT:13.50
JMH-2F (30") RIM:19.83 INV IN:13.50 (12") INV OUT:13.50 (12") BOT:13.50
36 LF 12" HDPE @0.0000 FT/FT
24 LF 15" HDPE @ 0.0404 FT/FT
45 LF 12" HDPE @ 0.0050 FT/FT
JMH-2E (48") RIM:20.00 INV IN:13.50 (12") INV IN:13.50(12") INV OUT:13.50 (12") BOT:13.50
INV=10.55
INV=13.96
INV=15.93
INV=13.40
INV=6.81
INV=6.73
INV=6.77
INV=6.40
INV=13.68
INV=13.96
INV=13.96
INV=13.96

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LEGEND:

- EXISTING PROPERTY LINE
- EXISTING INLET
- EXISTING MANHOLE
- EXISTING PIPE FLOW DIRECTION
- EXISTING SURFACE FLOW DIRECTION
- EXISTING CONTOUR LINE
- SF — PROPOSED SILT FENCE
- LOD — PROPOSED LIMIT OF DISTURBANCE
- IP — PROPOSED INLET PROTECTION
- FS — PROPOSED COMPOSITE FILTER SOCK
- MW — EXISTING GROUNDWATER MONITORING WELL
- RW — EXISTING GROUNDWATER RECOVERY WELL
- PROPOSED INLET
- PROPOSED MANHOLE
- PROPOSED STORM LINE
- PROPOSED OUTLET CONTROL STRUCTURE
- PROPOSED SUBSURFACE DETENTION BASIN
- PROPOSED SURFACE BIODETENTION BASIN
- PROPOSED TREATED AREA (PAVED)
- PROPOSED TREATED AREA (ROOF)
- OW — PROPOSED OBSERVATION WELL
- CO — PROPOSED CLEANOUT

EROSION CONTROL NOTES:

1. USE STANDARD CONSTRUCTION DETAILS #4-15, 4-16, 4-17, OR 4-18 FOR INLET PROTECTION AS SHOWN ON SHEETS C-141 AND C-142.
2. PWD IS NOT RESPONSIBLE FOR ANY CLEANING OR REPAIRS NEEDED ON CITY-OWNED INFRASTRUCTURE DUE TO FAILURE OF ANY EROSION AND SEDIMENT CONTROL PRACTICES. INFRASTRUCTURE SOLUTION SERVICES, LLC IS THE RESPONSIBLE PARTY.
3. INSPECTION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES SHALL OCCUR ON A WEEKLY BASIS, BEFORE ANY ANTICIPATED PRECIPITATION EVENTS, AND AFTER PRECIPITATION EVENTS.
4. A "INDUSTRIAL WASTE PERMIT" WILL BE REQUIRED SHOULD PUMPING TO CITY-OWNED INFRASTRUCTURE BECOME NECESSARY DURING CONSTRUCTION.
5. INLET PROTECTION MUST BE PROVIDED FOR ALL CITY-OWNED INLETS THAT ARE LOCATED WITHIN ONE BLOCK OF THE PROJECT SITE. IF THE INLET PROTECTION OR IT'S TRAPPED SEDIMENT PRESENTS A TRAFFIC HAZARD, USE AN INLET FILTER BAG, DETAILS 4-15 AND 4-16, SHOWN ON SHEET C-141. IN ADDITION TO THE INLET FILTER BAGS, A SEDIMENT CONTROL DEVICE, SUCH AS A TUBULAR SEDIMENT CONTROL DEVICE (SUCH AS A SANDBAG, FILTER LOG, COMPOST SOCK, OR FILTER TUBE) SHALL BE PLACED IN FRONT OF THE INLET OPENING AT THE CURB LINE FOR CURB INLETS WITH OR WITHOUT GRATES.
6. SOIL STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET.
7. SOIL STOCKPILE SLOPE MUST BE 2:1 OR FLATTER.
8. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.

LIMIT OF DISTURBANCE = 167,825 SF OR 3.8527 ACRES

50' 0 50' 100' scale feet

SCALE: 1"=50'

3/15/2017 11:23 AM

FOR CONSTRUCTION

SITE 13-3 - ISSUED FOR

ISS Infrastructure Solution Services
A Design/Build Company
1533 SKIPPACK PIKE, SUITE 2
BLUE BELL, PA 19422
P: (484) 704-7200
F: (267) 200-0414

No.	Revision/Issue	Date
7	ISSUED FOR CONSTRUCTION	3/13/2017
6	ISSUED FOR CONSTRUCTION (W/ FIELD CHANGE)	3/6/2017
5	TECHNICAL PLAN REVIEW (IFC)	2/27/2017
4	TECHNICAL PLAN REVIEW	2/22/2017
3	TECHNICAL PLAN REVIEW	2/16/2017
2	TECHNICAL PLAN REVIEW	1/27/2017
1	TECHNICAL PLAN REVIEW	12/5/2016
0	TECHNICAL PLAN REVIEW	11/10/2016

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PA. ONE CALL

PWD TRACKING NUMBER: FY17-STHS-4442-01
DRAWN By : D.H.T.
DESIGNED BY : M.W.M.
CHECKED BY : M.J.C.
DATE : 10-24-2016
SCALE : AS NOTED
CAD FILENAME: C-140.dwg

PROJECT:
PWD STORMWATER CREDIT RETROFIT DESIGN
SITE 13 - PHASE 3
FOR
SKY MANAGEMENT
2810 S. 20TH STREET
PHILADELPHIA, PA

SEAL:
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL JOSEPH COYLE ENGINEER NO. 061136 PENNSYLVANIA

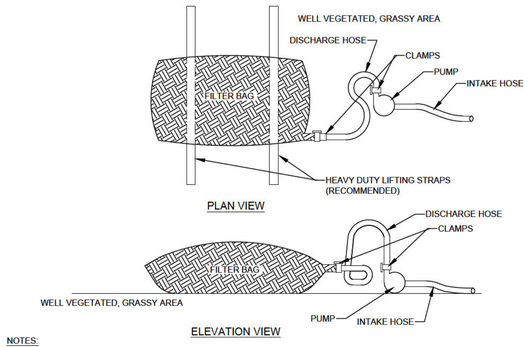
MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

H2O Infrastructure, LLC
1533 SKIPPACK PIKE, SUITE 1
BLUE BELL, PA 19422
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SHEET TITLE:
EROSION AND SEDIMENT CONTROL PLAN

SHEET NUMBER:
C-140

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NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

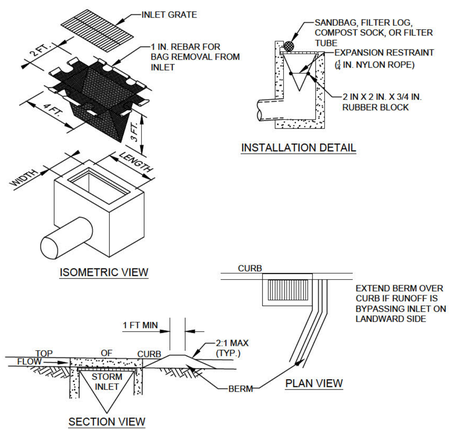
NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

STANDARD CONSTRUCTION DETAIL #3-16
PUMPED WATER FILTER BAG
N.T.S.



NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

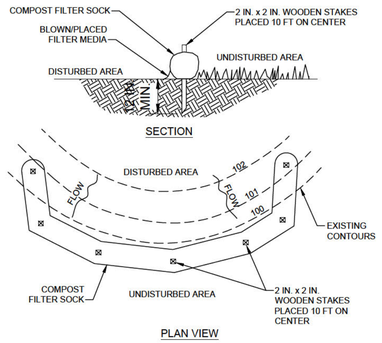
INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-15
FILTER BAG INLET PROTECTION - TYPE C INLET
N.T.S.



NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

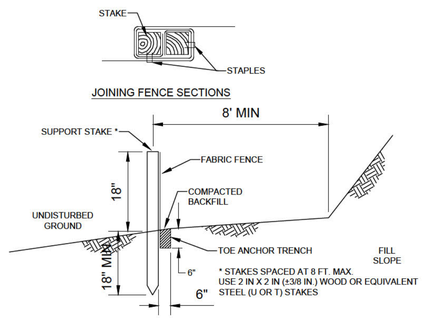
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK
N.T.S.



NOTES:

FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.

FABRIC WIDTH SHALL BE 30 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES.

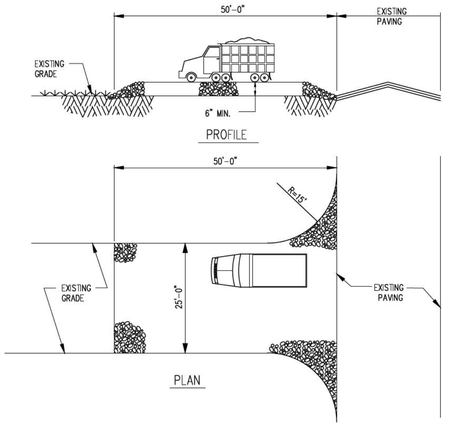
SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.

ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET (STANDARD CONSTRUCTION DETAIL # 4-6).

FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

STANDARD CONSTRUCTION DETAIL #4-7
STANDARD SILT FENCE (18" HIGH)
N.T.S.



NOTE:

1. PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND PUBLIC R.O.W.
2. STONE SIZE: USE ASTM C-33 SIZE No. 2 OR No. 3 CRUSHED STONE.
3. THE ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED ON SITE. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE.
4. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.

STABILIZED CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE

NOTES:

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

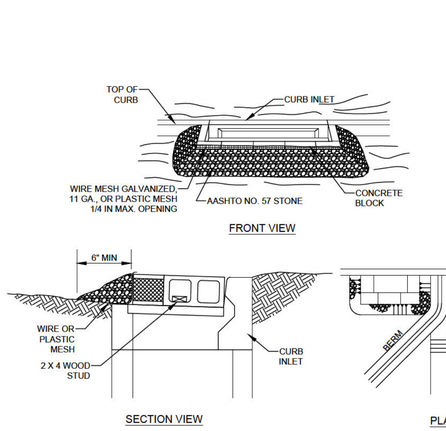
ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.

AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-16
FILTER BAG INLET PROTECTION - TYPE M INLET
N.T.S.



NOTES:

MAXIMUM DRAINAGE AREA = 1 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

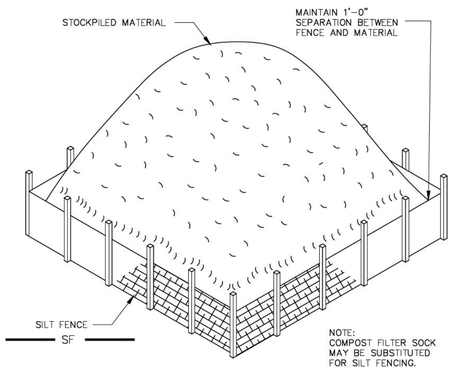
ROLLED EARTHEN BERM SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.

SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 INCH THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-17
STONE AND CONCRETE BLOCK INLET PROTECTION - TYPE C INLET
N.T.S.



SOIL STOCKPILE DETAIL
N.T.S.

FOR CONSTRUCTION - ISSUED FOR SITE 13-3

ISS Infrastructure Solution Services
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F: (267) 200-0414

No.	Revision/Issue	Date
7	ISSUED FOR CONSTRUCTION	3/13/2017
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0	TECHNICAL PLAN REVIEW	11/10/2016

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Toolkit 811
PA. ONE CALL

PWD TRACKING NUMBER: FY17-STHS-4442-01

DRAWN By :	D.H.T.
DESIGNED BY :	M.W.M.
CHECKED BY :	M.J.C.
DATE :	10-24-2016
SCALE :	AS NOTED
CAD FILENAME:	C-141.dwg

PROJECT:
PWD STORMWATER CREDIT RETROFIT DESIGN
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PHILADELPHIA, PA

SEAL:
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL JOSEPH COYLE ENGINEER NO. 061136

MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

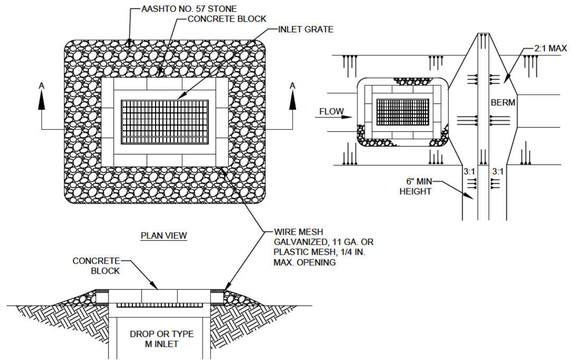
H2O Infrastructure, LLC
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SHEET TITLE:
EROSION AND SEDIMENT CONTROL DETAILS AND NOTES - 1

SHEET NUMBER:
C-141

3/15/2017 11:47 AM

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SECTION A-A

NOTES:

MAXIMUM DRAINAGE AREA =1 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT A LOW POINT.

ROLLED EARTHEN BERM IN ROADWAY SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR TO REMAIN PERMANENTLY.

TOP OF BLOCK SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.

SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 INCH THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

STANDARD CONSTRUCTION DETAIL #4-18
STONE AND CONCRETE BLOCK INLET PROTECTION - TYPE M INLET
N.T.S.

GENERAL EROSION & SEDIMENT CONTROL PROCEDURES

1. THE OPERATOR SHALL ASSURE THAT THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED.
2. THE EROSION AND SEDIMENT CONTROL PLAN IS TO BE USED FOR EROSION AND SEDIMENT CONTROL PURPOSES ONLY. IT SHALL NOT BE USED FOR ANY OTHER CONSTRUCTION RELATED ITEMS.
3. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES.
4. UNTIL THE SITE ACHIEVES FINAL STABILIZATION, THE OPERATOR SHALL ASSURE THAT THE BEST MANAGEMENT PRACTICES ARE IMPLEMENTED, OPERATED, AND MAINTAINED PROPERLY AND COMPLETELY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL BEST MANAGEMENT PRACTICE FACILITIES ON A WEEKLY BASIS AS WELL AS BEFORE ANY ANTICIPATED PRECIPITATION EVENTS AND AFTER ALL PRECIPITATION EVENTS. THE OPERATOR SHALL MAINTAIN AND MAKE AVAILABLE TO PWD COMPLETE. WRITTEN INSPECTION LOGS OF ALL THOSE INSPECTIONS. ALL MAINTENANCE WORK, INCLUDING CLEANING, REPAIR, REPLACEMENT, REGRADING, RESEEDING, AND RESTABILIZATION SHALL BE PERFORMED IMMEDIATELY.
5. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION. THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND /OR SEDIMENT POLLUTION.
6. BEFORE INITIATING ANY REVISION TO THE APPROVED EROSION AND SEDIMENT CONTROL PLAN OR REVISIONS TO OTHER PLAN WHICH MAY AFFECT THE EFFECTIVENESS OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE OPERATOR MUST RECEIVED APPROVAL OF THE REVISIONS FROM PWD.
7. THE OPERATOR SHALL ASSURE THAT AN EROSION AND SEDIMENT CONTROL PLAN HAS BEEN PREPARED, APPROVED BY PWD. AND IS BEING IMPLEMENTED AND MAINTAINED FOR ALL SOIL AND/OR ROCK SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS.
8. THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF THE APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART 1. DEPARTMENT OF ENVIRONMENTAL PROTECTION. SUBPART C. PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.
9. THE CITY OR ITS DESIGNEE MAY INSPECT ALL PHASES OF THE CONSTRUCTION, OPERATIONS, MAINTENANCE AND ANY OTHER IMPLEMENTATION OF STORMWATER BMPS.
10. DURING ANY STAGE OF THE REGULATED EARTH DISTURBANCE ACTIVITIES, IF THE CITY OR ITS DESIGNEE DETERMINES THAT ANY BMPS ARE NOT BEING IMPLEMENTED IN ACCORDANCE WITH THIS ORDINANCE, THE CITY MAY SUSPEND OR REVOKE ANY EXISTING PERMITS OR OTHER APPROVALS UNTIL THE DEFICIENCIES ARE CORRECTED.
11. WHEN REQUIRED, ADEQUATE PROVISIONS SHALL BE MADE FOR DUST CONTROL MEASURES AS ARE DEEMED ACCEPTABLE BY THE PWD.
12. A FINAL INSPECTION SHALL BE CONDUCTED BY PWD TO CERTIFY COMPLIANCE WITH ALL APPLICABLE REGULATIONS.
13. NO SEDIMENT OR SEDIMENT LADEN WATER IS ALLOWED TO LEAVE THE SITE WITHOUT THE FIRST BEING PROPERLY FILTERED.
14. DISTURBED AREAS ON WHICH EARTH MOVING ACTIVITIES HAVE CEASED AND WHICH WILL REMAIN EXPOSED SHALL BE STABILIZED IMMEDIATELY. EITHER TEMPORARILY OR PERMANENTLY, INCLUDING THE RESTORATION OF DRIVEWAYS, STOCKPILES, OFF-SITE UNDERGROUND UTILITY LINES AND GRADED PERIMETER AREAS. DURING NON-GERMINATION PERIODS. MULCH MUST BE APPLIED AT RECOMMENDED RATES. CRUSHED STONE ON PAVEMENT SUBGRADES IS CONSIDERED ADEQUATE PROTECTION.
15. WHERE DISTURBED AREAS ARE DIFFICULT TO STABILIZE, NETTING SHOULD BE USED TO HOLD SEED AND MULCH IN PLACE; THIS IS ESPECIALLY IMPORTANT AROUND WATERCOURSES, IN SWALES AND AREAS CONCENTRATED FLOWS AND STEEP SLOPES.
16. CONTRACTOR SHALL NOTIFY PWD OF DISPOSAL METHOD AND LOCATION OF MATERIALS (IF ANY) TO BE REMOVED FROM SITE.
17. ALL MATERIALS TO BE RECYCLED OR DISPOSED OF MUST DO SO IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL REGULATIONS. STOCKPILES TO BE HAULED OFF SITE MUST HAVE APPROVED EROSION AND SEDIMENT CONTROL PLAN AT THE DESTINATION LOCATION.
18. AN INDUSTRIAL WASTE PERMIT WILL BE REQUIRED SHOULD PUMPING TO CITY-OWNED INFRASTRUCTURE BECOME NECESSARY DURING CONSTRUCTIONS.
19. INLET PROTECTION MUST BE PROVIDED FOR THE THREE (3) CITY-OWNED INLETS ALONG THE NORTH SIDE OF LANGDON STREET.
20. THE PHILADELPHIA WATER DEPARTMENT IS NOT RESPONSIBLE FOR ANY CLEANING OR REPAIRS ON CITY-OWNED INFRASTRUCTURE DUE TO FAILURE OF ANY EROSION AND SEDIMENT CONTROL PRACTICES. INFRASTRUCTURE SOLUTION SERVICES SHALL BE THE RESPONSIBLE PARTY.
21. WHEN INLET PROTECTION IS NEEDED WITHIN THE PUBLIC RIGHT-OF-WAY, THE DESIGNER SHOULD BE COGNIZANT OF THE TRAFFIC CAPACITY OF THE TRAVEL WAY. THE INLET PROTECTION, OR ITS TRAPPED SEDIMENT, SHOULD NOT BE AN OBSTRUCTION OR A HAZARD TO TRAFFIC. INLET FILTER BAGS SHOULD BE CONSIDERED WHEN AN INLET IS EQUIPPED WITH A GRATE (AS LONG AS THE MANUFACTURER'S DESIGN CRITERION IS ACHIEVED, SUCH AS THE INLET'S DRAINAGE AREA IS BELOW THE MAXIMUM). IN ADDITION TO THE INLET FILTER BAGS, A SEDIMENT CONTROL DEVICE, SUCH AS A TUBULAR SEDIMENT CONTROL DEVICE, SHOULD BE PLACED PER MANUFACTURER'S RECOMMENDATIONS IN FRONT OF THE INLET OPENING AT THE CURB LINE. TUBULAR SEDIMENT CONTROL DEVICES MAY ALSO BE EMPLOYED WHEN AN OPENING IS PRESENT AT THE CURB LINE. TUBULAR SEDIMENT CONTROL DEVICES MAY ALSO BE EMPLOYED WHEN AN OPENING IS PRESENT AT THE CURB LINE AND A GRATE IS NOT PRESENT. ALL INLET PROTECTION DEVICES SHOULD BE PROPERLY MAINTAINED AND REPLACED AS NEEDED. REFER TO STANDARD DETAILS #4-15 AND 4-16 FROM THE PADEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL FOR GUIDANCE.

CONSTRUCTION SEQUENCE:

A. AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, THE OPERATOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES. THE LANDOWNER, ALL APPROPRIATE CITY OFFICIALS, THE EROSION AND SEDIMENT CONTROL PLAN PREPARER AND PWD TO AN ON-SITE MEETING. ALSO, AT LEAST 3 WORKING DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM INCORPORATED AT 1-800-242-1776 FOR BURIED UTILITIES LOCATIONS.

B. AT LEAST 7 DAYS BEFORE STARTING EARTH DISTURBANCE, KEVIN KIVINAKI OF THE DEFENSE LOGISTICS AGENCY (DLA) SHALL BE CONTACTED AT 703-767-6239 OR KEVIN.KIVIMAKI@DLA.MIL.

C. EROSION AND SEDIMENT BMPS MUST BE CONSTRUCTED, STABILIZED AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS WITHIN THE TRIBUTARY AREAS OF THOSE BMPS.

D. AT LEAST SEVEN (7) DAYS PRIOR TO ANY EARTH DISTURBANCE, THE INSPECTIONS COORDINATOR OF PWD (OFFICE 215-685-6387) MUST BE CALLED TO SCHEDULE A PRE-CONSTRUCTION MEETING.

E. AT LEAST THREE (3) DAYS PRIOR TO SMP INSTALLATION, THE INSPECTIONS COORDINATOR OF PWD (OFFICE 215-685-6387) MUST BE CALLED TO SCHEDULE AN INSPECTION.

F. COMPACTION OF AN INFILTRATION STORMWATER MANAGEMENT PRACTICE (EG. BASIN) MUST BE LIMITED. EQUIPMENT SHALL BE OPERATED FROM OUTSIDE OF THE BASIN WHENEVER POSSIBLE. EXPOSED SUBGRADE SOILS SHALL BE SACRIFICED AND UNCOMPACTED FOLLOWING EXCAVATION TO PROMOTE INFILTRATION.

G. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. EACH STAGE SHALL BE COMPLETED BEFORE ANY FOLLOWING STAGE IS INITIATED. CLEARING AND GRUBBING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE.

1. INSTALL EROSION CONTROL MEASURES AS SHOWN ON SHEET C-140.
2. INSTALL TEMPORARY CONSTRUCTION FENCE AROUND BASIN EXCAVATION.
3. REMOVE AND LEGALLY DISPOSE OF PAVEMENT AND STRUCTURES LISTED FOR DEMOLITION. AVOID HEAVY EQUIPMENT USE ON BASIN BED AS MUCH AS POSSIBLE. EXCAVATE WITH EQUIPMENT ON EXISTING PAVEMENT STARTING AT DOWN HILL SIDE AND FROM BASIN PERIMETER.
4. EXCAVATE BIO-DETENTION BASIN OR SUBSURFACE DETENTION BASIN. STORE BACKFILL ON SOIL PILES ONSITE AND LEGALLY DISPOSE OF EXCESSIVE EXCAVATED MATERIAL.
5. INSTALL OUTLET CONTROL STRUCTURES (IE, OVERFLOW INLET AND BASIN PIPING). USE PUMP WATER FILTER BAGS FOR TEMPORARY DEWATERING AS NECESSARY.
6. BUILD BASIN BERMS AND STRUCTURES. INSTALL UNDERDRAIN/STORAGE PIPE. MAKE ANY INFLOW AND OUTFLOW CONNECTIONS TO BASIN PIPING.
7. REPLACE PAVING AND OTHER STRUCTURES REMOVED DURING CONSTRUCTION.
8. PLANT REQUIRED PLANTINGS, GRAS AND MULCH IN BASIN IF CONSTRUCTING A BIODETENTION BASIN.

G. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE. THE OPERATOR SHALL STABILIZE ANY AREAS DISTURBED BY THE ACTIVITIES. DURING NON-GERMANATING PERIODS, MUCLH MUST BE APPLIED AT THE SPECIFIED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR MUST BE STABILZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINISHED GRADE OR WHICH WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

H. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.

I. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARILY EROSION AND SEDIMENT BMPS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE BMPS MUST BE STABILIZED IMMEDIATELY.

MONITORING, INSPECTION & REPORTING

VISUAL INSPECTION

THE PERMITTEE AND CO_PERMITTEE(S) MUST ENSURE THAT VISUAL SITE INSPECTIONS ARE CONDUCTED WEEKLY, AND WITHIN 24 HOURS AFTER EACH MEASURABLE RAINFALL EVENT THROUGHOUT THE DURATION OF CONSTRUCTION AND UNTIL THE RECEIPT AND ACKNOWLEDGEMENT OF THE NOT BY THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT. THE VISUAL SITE INSPECTIONS AND REPORTS SHALL BE COMPLETED IN A FORMAT PROVIDED BY THE DEPARTMENT, AND CONDUCTED BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL TO ASCERTAIN THAT E&S BMPS AND PCSM BMPS ARE PROPERLY CONSTRUCTED AND MAINTAINED TO EFFECTIVELY MINIMIZE POLLUTION TO THE WATERS OF THIS COMMONWEALTH. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT AND INCLUDE AT A MINIMUM:

(1) A SUMMARY OF SITE CONDTIONS, E&S BMP AND PCSM BMP, IMPLEMENTATION AND MAINTENANCE AND COMPLIANCE ACTIONS; AND

(2) THE DATE, TIME, NAME AND SIGNATURE OF THE PERSON CONDUCTING THE INSPECTION.

NONCOMPLIANCE REPORTING

WHERE E&S, PCSM OR PPC BMPS ARE FOUND TO BE INOPERATIVE OF INEFFECTIVE DURING AN INSPECTION, OR ANY OTHER TIME. THE PERMITTEE AND CO_PERMITTEE(S) SHALL, WITHIN 24 HOURS, CONTACT THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT, BY PHONE OR PERSOAL CONTACT, FOLLOWED BY THE SUBMISSION OF A WRITEN REPORT WITHIN 5 DAYS OF THE INITIAL CONTACT. NONCOMPLIANCE REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:

(1) ANY CONDTION ON THE PROJECT SITE WHICH MAY ENDANGER PUBLIC HEALTH, SAFETY, OR THE ENVIRONMENT, OR INVOLVE INCIDENTS WHICH CAUSE OR THREATEN POLLUTION;

(2) THE PERIOD OF NONCOMPLIANCE, INCLUDING EXACT DATES AND TIMES AND/OR ANTICIPATED TIME WHEN THE ACTIVITY WILL RETURN TO COMPLIANCE;

(3) STEPS BEING TAKEN TO REDUCE ELIMINATE, AND PREVENT RECURRENCE OF THE NONCOMPLIANCE; AND

(4) THE DATE OR SCHEDULE OF DATES AND IDENTIFYING REMEDIES FOR CORRECTING NONCOMPLIANCE CONDITIONS.

REDUCTION, LOSS, OR FAILURE OF THE BMPS

UPON REDUCTION, LOSS OR FAILURE OF THE BMPS, THE PERMITTEE AND CO_PERMITTEE SHALL TAKE IMMEDIATE ACTION TO RESTORE THE BMPS OR PROVIDE AN ALTERNATIVE METHOD OF TREATMENT. SUCH RESTORED BMPS OR ALTERNATIVE TREATMENT SHALL BE AT LEAST AS EFFECTIVE AS THE ORIGINAL BMPS.

CLEAN FILL REQUIREMENTS

IF THE SITE WILL NEED TO IMPORT OR EXPORT MATERIAL FROM THE SITE, THE RESPONSIBILITY FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND DETERMINATION OF CLEAN FILL WILL REST WITH APPLICANT.

CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIAL PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE.

CLEAN FILL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE; FILL MATERIALS AFFECTED BY A SPILL OR RELEASE OF REGULATED SUBSTANCE STILL QUALIFIES AS CLEAN FILL PROVIDED THE TESTING REVEALS THAT THE FILL MATERIAL CONTAINS CONCENTRATIONS OF REGULATED SUBSTANCES THE ARE BELOW THE RESIDENTIAL LIMITS IN TABLES FP=1A AND FP-1B FOUND IN THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL."

ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM FP-001 TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. A COPY OF FORM FP-001 CAN BE FOUND AT THE END OF THESE INSTRUCTIONS.

ENVIRONMENTAL DUE DILIGENCE; THE APPLICANT MUST PERFORM ENVIRONMENTAL DUE DILIGENCE TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO. VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATABASE SEARCHES , REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENT OR AUDITS. ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF THE DEPARTMENT'S POLICY "MANAGEMENT OF FILL."

FILL MATERIAL THAT DOES NOT QUALIFY AS CLEAN FILL IS REGULATED FILL. REGULATED FILL IS WASTE AND MUST BE MANAGED IN ACCCORDANCE WITH THE DEPARTMENT'S MUNICIPAL OR RESIDUAL WASTE REGUALTIONS BASED ON 25 PA CODE CHAPTERS 287 RESIDUAL WASTE MANAGEMENT OR 271 MUNICIPAL WASTE MANAGEMENT, WHICHEVER IS APPLICABLE. THESE REGULATIONS ARE AVAILABLE ON-LINE AT WWW.PACODE.COM.

RECYCLING OR DISPOSAL METHODS

1. THE OPERATION SHALL REMOVE FROM THE SITE. RECYCLE, OR DISPOSE OF ALL BUILDING MATERIALS AND WASTE IN ACCORDANCE WITH THE DEPARTMENTS SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ. 271.1 ET SEQ. AND 287.1 ET SEQ. THE CONTRACTOR SHALL NOT ILLEGALLY BURY, DUMP, OR DISCHARGE ANY BUILDING MATERIAL OR WASTES AT THE SITE.
2. EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE REUSED, SALVAGED, REINSTALL OR OTHERWISE INDICATED TO REMAIN ON THE PROPERTY, DEMOLISHED OR EXCAVATED MATERIALS SHALL BE REMOVED FROM THE SITE. MATERIAL SLATED FOR REMOVAL FROM THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH ANY AND ALL APPLICABLE MUNICIPAL OR OTHER GOVERNMENTAL AGENCY CURRENT REGULATIONS. DEBRIS SHALL NOT BE PERMITTED TO ACCUMULATE ON THE JOB-SITE DUST AND DIRT SHALL BE HELD TO A MINIMUM DURING DEMOLITION. BY WETTING DOWN, AS REQUIRED ON THE SITE BURNING OF MATERIALS WILL NOT BE PERMITTED. AT THE COMPLETION OF WORK, THE ENTIRE AREA INVOLVED WILL BE CLEAN AND LEFT IN A NEAT CONDITION. FREE OF RUBBISH, RECYCLING OR DISPOSAL OF MATERIALS ASSOCIATED WITH OR FROM THIS PROJECT SITE SHALL BE UNDERTAKEN IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION RULES AND REGULATIONS.
3. SEDIMENT REMOVED FROM CONTROL FACILITIES AS A PART OF REGULAR MAINTENANCE SHALL BE DISPOSED OF UPSLOPE OF THE CONTROL FACILITY.

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No.	Revision/Issue	Date
7	ISSUED FOR CONSTRUCTION	3/13/2017
6	ISSUED FOR CONSTRUCTION (W/ FIELD CHANGE)	3/6/2017
5	TECHNICAL PLAN REVIEW (IFC)	2/27/2017
4	TECHNICAL PLAN REVIEW	2/22/2017
3	TECHNICAL PLAN REVIEW	2/16/2017
2	TECHNICAL PLAN REVIEW	1/27/2017
1	TECHNICAL PLAN REVIEW	12/5/2016
0	TECHNICAL PLAN REVIEW	11/10/2016

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PWD TRACKING NUMBER: FY17-STHS-4442-01
DRAWN By : D.H.T.
DESIGNED BY : M.W.M.
CHECKED BY : M.J.C.
DATE : 10-24-2016
SCALE : AS NOTED
CAD FILENAME: C-142.dwg

PROJECT:
PWD STORMWATER CREDIT RETROFIT DESIGN
SITE 13 - PHASE 3
FOR
SKY MANAGEMENT
2810 S. 20TH STREET
PHILADELPHIA, PA

SEAL:
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL JOSEPH COYLE ENGINEER NO. 061136
MICHAEL J. COYLE
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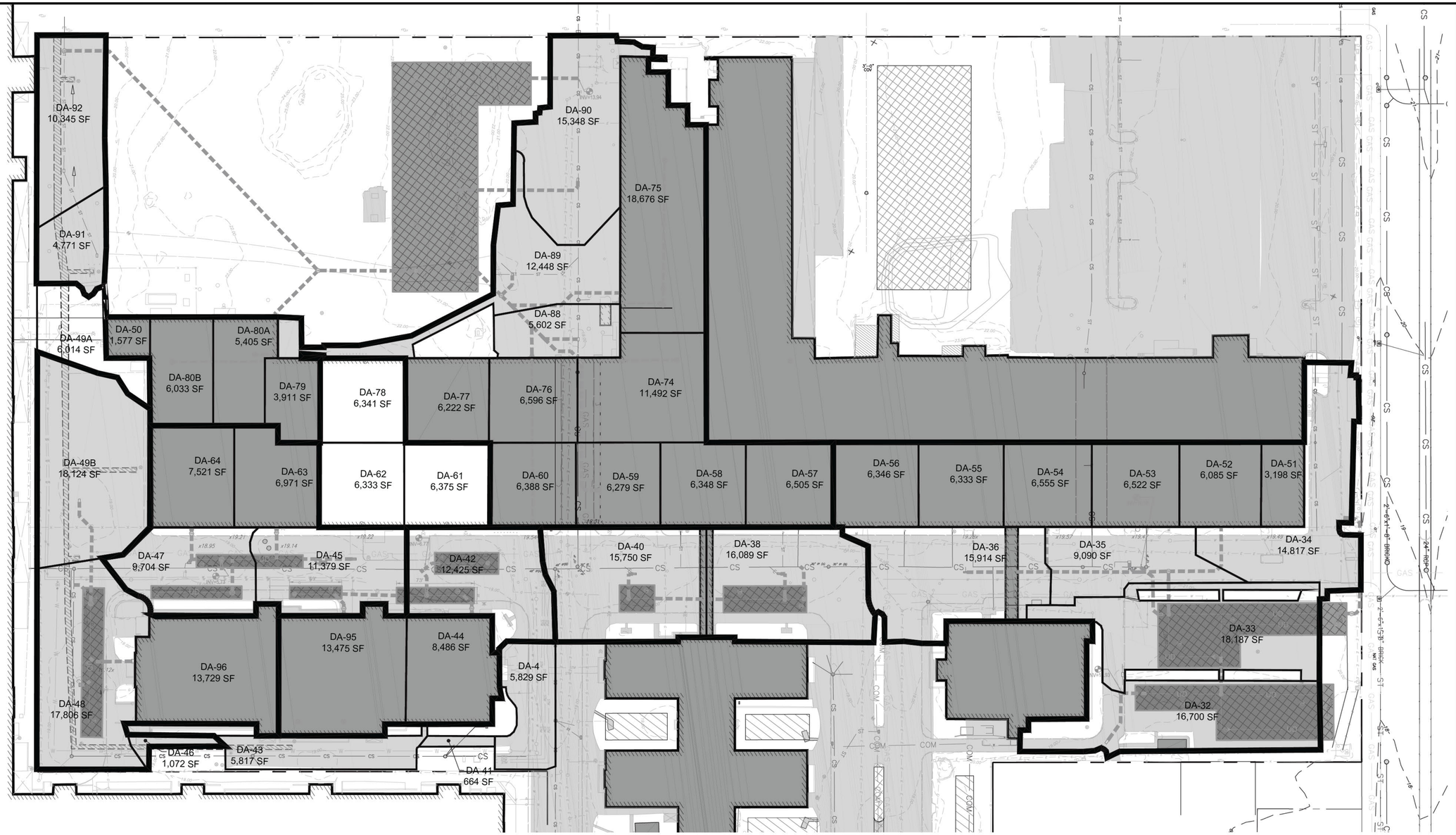
SHEET TITLE:
EROSION AND SEDIMENT CONTROL DETAILS AND NOTES - 2

SHEET NUMBER:
C-142

SITE 13-3 - ISSUED FOR CONSTRUCTION

3/15/2017 11:48 AM

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LEGEND:

- EXISTING PROPERTY LINE
- EXISTING INLET
- EXISTING MANHOLE
- ST — EXISTING STORM LINE
- SAN — EXISTING SANITARY LINE
- W — EXISTING WATER LINE
- E — EXISTING ELECTRIC LINE
- GAS — EXISTING GAS LINE
- COM — EXISTING COMMUNICATIONS LINE
- CS — EXISTING COMBINED SEWER LINE
- EXISTING ROOF DRAIN LINE
- EXISTING ROOF DRAIN
- EXISTING PIPE FLOW DIRECTION
- EXISTING SURFACE FLOW DIRECTION
- EXISTING CONTOUR LINE
- MW — EXISTING GROUNDWATER MONITORING WELL
- RW — EXISTING GROUNDWATER RECOVERY WELL
- PROPOSED SUBSURFACE DETENTION BASIN
- PROPOSED TREATED AREA (PAVED)
- PROPOSED TREATED AREA (ROOF)

SITE 13-3 DRAINAGE AREA SUMMARY

DRAINAGE AREA ID	CONSTRUCTION PHASE	IMPERVIOUS AREA (SF)	CURVE NO. (CN)	Tc (MIN)	DRAINS TO BASIN NO. (SEE NOTES)
DA-4	3	5,829	100	6	NOT TREATED
DA-32	3	16,700	100	6	SB-2
DA-33	3	18,187	100	6	SB-2
DA-34	3	14,797	100	6	SB-2
DA-35	3	9,090	100	6	SB-2
DA-36	3	15,914	100	6	SB-2
DA-38	3	16,089	100	6	SB-3
DA-40	3	15,750	100	6	SB-3
DA-41	3	664	100	6	NOT TREATED
DA-42	3	12,425	100	6	SB-13
DA-43	3	5,817	100	6	NOT TREATED
DA-44	3	8,486	100	6	SB-17
DA-45	3	11,379	100	6	SB-14
DA-46	3	1,072	100	6	SB-16
DA-47	3	9,704	100	6	SB-14
DA-48	3	17,806	100	6	SB-16
DA-49A	3	6,014	100	6	NOT TREATED
DA-49B	3	18,124	100	6	SB-16

DA-50	3	1,577	100	6	SB-15
DA-51	3	3,198	100	6	SB-2
DA-52	3	6,085	100	6	SB-2
DA-53	3	6,522	100	6	SB-2
DA-54	3	6,555	100	6	SB-2
DA-55	3	6,333	100	6	SB-2
DA-56	3	6,346	100	6	SB-2
DA-57	3	6,505	100	6	SB-15
DA-58	3	6,348	100	6	SB-15
DA-59	3	6,279	100	6	SB-15
DA-60	3	6,388	100	6	SB-15
DA-61	3	6,375	100	6	NOT TREATED
DA-62	3	6,333	100	6	NOT TREATED
DA-63	3	6,971	100	6	SB-14
DA-64	3	7,521	100	6	SB-14
DA-74	3	11,492	100	6	SB-15
DA-75	3	18,676	100	6	SB-15
DA-76	3	6,596	100	6	SB-15
DA-77	3	6,222	100	6	SB-15
DA-78	3	6,341	100	6	NOT TREATED

DA-79	3	3,911	100	6	SB-15
DA-80A	3	5,405	100	6	SB-15
DA-80B	3	6,033	100	6	SB-15
DA-88	3	5,602	100	6	SB-15
DA-89	3	12,448	100	6	SB-15
DA-90	3	15,348	100	6	SB-15
DA-91	3	4,771	100	6	SB-15
DA-92	3	10,345	100	6	SB-15
DA-95	3	13,475	100	6	SB-17
DA-96	3	13,729	100	6	SB-16
TOTAL PARCEL		**402,218**	**SF**	**9.23**	**AC**

50' 0 50' 100'
scale feet
SCALE: 1"=50'

FOR CONSTRUCTION

SITE 13-3 - ISSUED FOR CONSTRUCTION

ISS Infrastructure Solution Services
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No.	Revision/Issue	Date
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CALL BEFORE YOU DIG
Toolkit 811
PA. ONE CALL

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DRAWN By : D.H.T.
DESIGNED BY : M.W.M.
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NO. 061136
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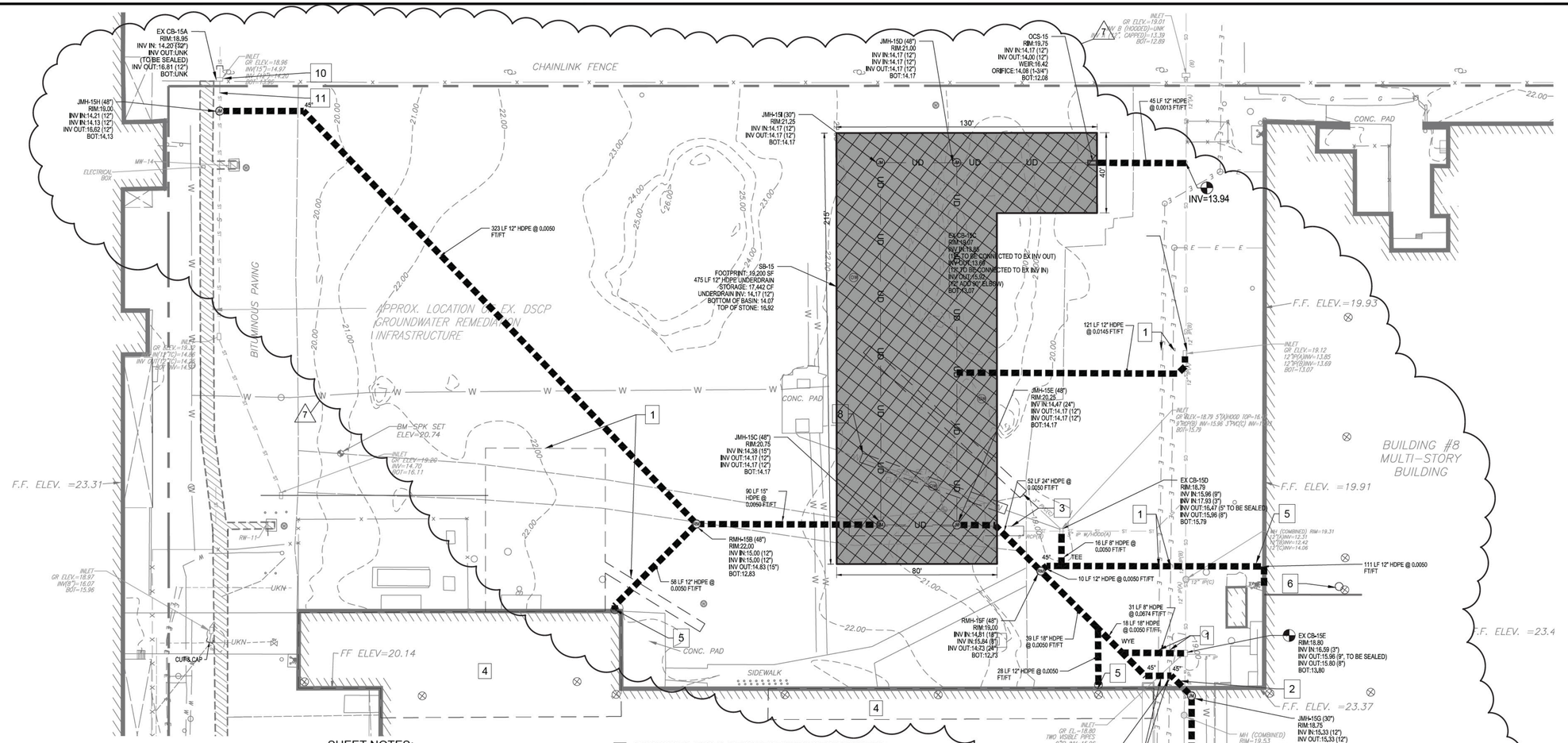
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SHEET TITLE:
PRE & POST DEVELOPMENT DRAINAGE AREA PLAN

SHEET NUMBER:
C-150

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SB-15 SMP ENLARGEMENT
SCALE:1"=30'

LEGEND:

- EXISTING PROPERTY LINE
- EXISTING CATCH BASIN
- EXISTING MANHOLE
- ST — EXISTING STORM LINE
- SAN — EXISTING SANITARY LINE
- W — EXISTING WATER LINE
- E — EXISTING ELECTRIC LINE
- GAS — EXISTING GAS LINE
- COM — EXISTING COMMUNICATIONS LINE
- CS — EXISTING COMBINED SEWER LINE
- EXISTING ROOF DRAIN LINE
- EXISTING ROOF DRAIN
- EXISTING CONTOUR LINE
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE
- PROPOSED STORM LINE
- PROPOSED INTERIOR STORM LINE
- PROPOSED OUTLET CONTROL STRUCTURE
- PROPOSED SUBSURFACE DETENTION BASIN
- SEAL/CAP EXISTING PIPE INSIDE STRUCTURE
- OW — PROPOSED OBSERVATION WELL
- CO — PROPOSED CLEANOUT
- DS 1 — EXISTING DOWNSPOUT
- PROPOSED EXTERNAL DOWNSPOUT & STUB-UP
- PROPOSED TIE TO EXISTING
- *MW* — EXISTING GROUNDWATER MONITORING WELL
- *RW* — EXISTING GROUNDWATER RECOVERY WELL

SHEET NOTES:

1. ELECTRIC LINE CROSSING AT UNCONFIRMED ELEVATIONS. USE CAUTION WHEN EXCAVATING PIPE TRENCH.
2. COMBINED SEWER LINE CROSSING AT UNCONFIRMED ELEVATION. USE CAUTION WHEN EXCAVATING PIPE TRENCH.
3. UNKNOWN IF STORM SEWER PIPES ARE STILL IN USE OR CONTINUE INTO PROPOSED BASIN SB-15 AREA. USE CAUTION AND LOCATE PIPE SOURCE'S LOCATION AT BEGINNING OF BASIN EXCAVATION. ABANDON PIPES IF NOT IN USE, THEN TIE PIPES INTO THE BASIN UNDERDRAIN
4. DISCONNECT AND REROUTE INTERNAL DOWNSPOUTS AS LABELED ON THE FIRST FLOOR, BELOW HOMELAND SECURITY.
5. CORE DRILL THROUGH BUILDING WALL AND CONNECT INTERNAL PLUMBING TO AN EXTERNAL STUB-UP BY NO MORE THAN 2' ABOVE GROUND LEVEL.
6. DISCONNECT THE ROOF DRAIN TO PROPOSED INTERNAL STUB-UP CONNECTED TO OUTSIDE PIPE TRENCHING.
7. CORE DRILL THROUGH BUILDING WALL AND CONNECT INTERNAL PLUMBING TO AND EXTERNAL STUB-UP BEHIND 24"x24" CIRCULAR OUTDOOR COLUMN. PIPE MUST NOT BE VISIBLE WHEN LOOKING INTO THE TUNNEL.
8. PER SITE OWNER, THIS WATER LINE IS ABANDONED AND WILL BE REMOVED IF IT INTERFERES WITH THE BASIN.
9. PROPOSED STORM PIPE SHALL CROSS ABOVE THE EXISTING DSCP REMEDIATION INFRASTRUCTURE.
10. PROPOSED EXCAVATION FOR NEW STORMWATER INFRASTRUCTURE SHALL NOT INTERFERE WITH EX. DSCP BURIED INFRASTRUCTURE - PROCEED WITH EXTREME CAUTION. **CONTRACTOR MUST HAND DIG OR USE VACUUM TRUCK FOR EXCAVATION AT PROPOSED PIPE CROSSINGS WITH DSCP INFRASTRUCTURE.** FOREMAN SHALL NOTIFY CHUCK ROGERS OF ARCADIS AT 267-966-7486 BEFORE STARTING EXCAVATION WORK ADJACENT TO DSCP INFRASTRUCTURE SO THAT HE CAN BE ON SITE DURING EXCAVATION WORK.
11. REVERSE SLOPE OF EXISTING PIPE DRAIN AT MIN. 0.005 FT/FT FROM EX INLET TO NEW JMH-15H

GENERAL NOTES:

1. PROPERTY LINE SHOWN IS BASED ON "ALTA/ACSM LAND TITLE SURVEY" PLAN PREPARED BY LANGAN ENGINEERING DATED 09/01/2011.
2. PROJECT COORDINATE SYSTEM IS PENNSYLVANIA STATE PLANE - SOUTH ZONE. VERTICAL DATUM IS NAVD 1988.
3. ROOF DRAIN CONNECTIONS WILL BE MADE APPROXIMATELY 2 FEET BELOW GRADE TO THE TOP OF THE PIPE. THESE ELEVATIONS MUST BE VERIFIED IN FIELD. THE ROOFDRAIN CONNECTION SLOPE WILL BE 0.5% AND DROP 45° WHEN CONNECTION TO ANOTHER PIPE.
4. PIPE SLOPE WILL BE 0.5% UNLESS LABELED OTHERWISE AND DROP 45° WHEN CONNECTING TO BASIN UNDERDRAIN PIPE.
5. INSTALL THE FLEXSTORM PURE STAINLESS STEEL FRAMING AND "FX" WOVEN POLYPORYLENE SEDIMENT BAG INLET FILTER (OR APPROVED EQUIVALENT) FOR PERMANENT INLET PROTECTION IN ALL EXISTING AND PROPOSED INLETS DRAINING TO AN SMP. (SEE DETAIL C-803)
6. INSTALL SNOUT FOR INLET PRETREATMENT IN ALL EXISTING AND PROPOSED INLETS DRAINING TO AN SMP. (SEE DETAIL ON C-803)
7. PVC INTERNAL PIPE TO EXIT BUILDING ON GROUND FLOOR, 1' ABOVE SURFACE ELEVATION, AND CONNECT TO PIPE STUB.
10. COMPACTION: ALL BACKFILL MATERIAL IN BASINS AND PIPE TRENCHES SHALL BE INSTALLED IN 8-INCH TO 12-INCH LOOSE LIFTS AND COMPACTED TO 95% OF ITS MAXIMUM DRY DENSITY BY ROLLING EACH LIFT WITH A MINIMUM OF THREE PASSES OF A SHEEPSFOOT VIBRATORY TRENCH ROLLER OR EQUIVALENT.
11. THE PROPOSED INLET GRATE ELEVATION ON THE PLANS SHALL BE VERIFIED IN FIELD. ENSURE THAT THE TOP OF GRATE ELEVATION IS 2 INCHES LOWER THAN THE ADJACENT EXISTING GRADE SO THAT SURFACE RUNOFF DOES NOT BYPASS THE INLET GRATE OR POND AROUND THE INLET.
12. THE PROPOSED MANHOLE RIM ELEVATIONS ON THE PLANS SHALL BE VERIFIED WITH ACTUAL ELEVATIONS IN THE FIELD. ENSURE THAT THE INSTALLED MANHOLE RIM ELEVATION MATCHES THE ADJACENT EXISTING GRADE.
13. ROOF DRAINS LOCATED BY H2O INFRASTRUCTURE SURVEYOR.

30' 0' 30' 60'
scale feet
SCALE: 1"=30'

3/16/2017 10:27 AM

FOR CONSTRUCTION

SITE 13-3 - ISSUED FOR CONSTRUCTION

ISS Infrastructure Solution Services
A Design/Build Company
1533 SKIPPACK PIKE, SUITE 2
BLUE BELL, PA 19422
P: (484) 704-7200
F: (267) 200-0414

No.	Revision/Issue	Date
7	ISSUED FOR CONSTRUCTION	3/13/2017
6	ISSUED FOR CONSTRUCTION (W/ FIELD CHANGE)	3/6/2017
5	TECHNICAL PLAN REVIEW (IFC)	2/27/2017
4	TECHNICAL PLAN REVIEW	2/22/2017
3	TECHNICAL PLAN REVIEW	2/16/2017
2	TECHNICAL PLAN REVIEW	1/27/2017
1	TECHNICAL PLAN REVIEW	12/5/2016
0	TECHNICAL PLAN REVIEW	11/10/2016

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Toolkit 811
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PWD TRACKING NUMBER:	FY17-STHS-4442-01
DRAWN By :	D.H.T.
DESIGNED BY :	M.W.M.
CHECKED BY :	M.J.C.
DATE :	10-24-2016
SCALE :	AS NOTED
CAD FILENAME:	C-501.dwg

PROJECT:
PWD STORMWATER CREDIT RETROFIT DESIGN
SITE 13 - PHASE 3
FOR
SKY MANAGEMENT
2810 S. 20TH STREET
PHILADELPHIA, PA

SEAL:
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL JOSEPH COYLE
ENGINEER
NO. 061136

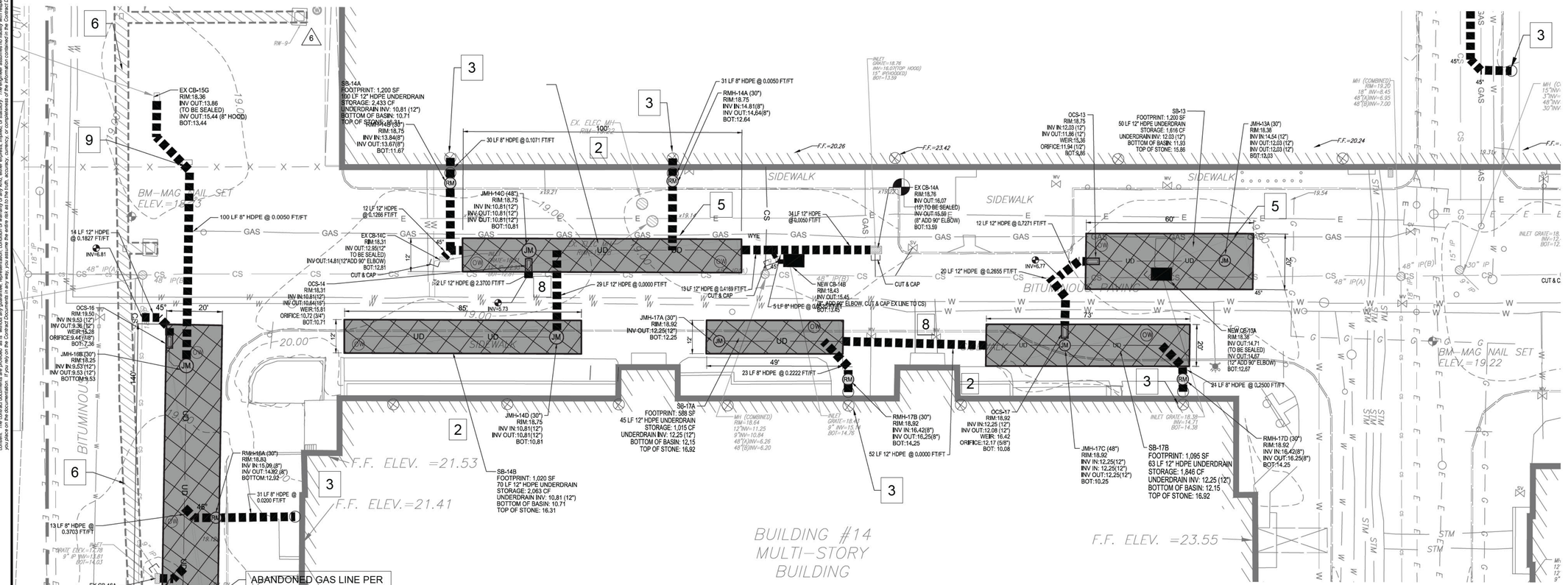
MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

H2O Infrastructure, LLC
1533 SKIPPACK PIKE, SUITE 1
BLUE BELL, PA 19422
PHONE: (484) 704-7417
FAX: (267) 200-0414

SHEET TITLE:
SMP ENLARGEMENT PLAN & DETAILS-1

SHEET NUMBER:
C-501

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SB-13, SB-14, SB-17A, & SB-17B SMP ENLARGEMENT
SCALE:1"=30'

LEGEND:

- EXISTING PROPERTY LINE
- EXISTING CATCH BASIN
- EXISTING MANHOLE
- ST — EXISTING STORM LINE
- SAN — EXISTING SANITARY LINE
- W — EXISTING WATER LINE
- E — EXISTING ELECTRIC LINE
- GAS — EXISTING GAS LINE
- COM — EXISTING COMMUNICATIONS LINE
- CS — EXISTING COMBINED SEWER LINE
- EXISTING ROOF DRAIN LINE
- EXISTING ROOF DRAIN
- EXISTING CONTOUR LINE
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE
- PROPOSED STORM LINE
- PROPOSED INTERIOR STORM LINE
- PROPOSED OUTLET CONTROL STRUCTURE
- PROPOSED SUBSURFACE DETENTION BASIN
- OW — PROPOSED OBSERVATION WELL
- CO — PROPOSED CLEANOUT
- DS 1 — EXISTING DOWNSPOUT
- PROPOSED EXTERNAL DOWNSPOUT & STUB-UP
- PROPOSED TIE TO EXISTING
- MW — EXISTING GROUNDWATER MONITORING WELL
- RW — EXISTING GROUNDWATER RECOVERY WELL

SHEET NOTES:

1. STORM SEWER LINE CROSSING AT UNCONFIRMED ELEVATION. USE CAUTION WHEN EXCAVATING PIPE TRENCH.
2. DISCONNECT AND REROUTE INTERNAL DOWNSPOUTS AS LABELED ON THE FIRST FLOOR, BELOW HOMELAND SECURITY. MUST MEET WITH JOE RIGHTER & HOMELAND SECURITY REPRESENTATIVES TO APPROVE INTERNAL PIPING & STUB-UP CONNECTION PLANS.
3. CONNECT INTERNAL PLUMBING TO PIPE TRENCH BELOW GROUND LEVEL. CORE DRILL THROUGH BUILDING WALL UNDERGROUND. PIPE MUST NOT BE VISIBLE FROM THE OUTSIDE.
4. OMITTED.
5. ABANDONED GAS LINE PER CLIENT JOE RIGHTER. GAS LINE SHALL BE REMOVED FROM BASIN FOOTPRINT.
6. DSCP GROUNDWATER REMEDIATION INFRASTRUCTURE.
7. PROPOSED EXCAVATION FOR NEW STORMWATER INFRASTRUCTURE SHALL NOT INTERFERE WITH EX. DSCP BURIED INFRASTRUCTURE - PROCEED WITH EXTREME CAUTION. FOREMAN SHALL NOTIFY CHUCK ROGERS OF ARCADIS AT 267-966-7486 BEFORE STARTING EXCAVATION WORK ADJACENT TO DSCP INFRASTRUCTURE, SO THAT HE CAN BE ON SITE DURING EXCAVATION WORK.
8. SOLID HDPE CONNECTING BASIN UNDERDRAINS TO GO UNDER EXISTING WATER LINES. USE CAUTION WHEN CROSSING AREA.
9. PROPOSED STORM PIPE CROSSING EXISTING ELECTRIC FENCE.

GENERAL NOTES:

1. PROPERTY LINE SHOWN IS BASED ON "ALTA/ACSM LAND TITLE SURVEY" PLAN PREPARED BY LANGAN ENGINEERING DATED 09/01/2011.
2. ROOF DRAINS LOCATED BY H2O INFRASTRUCTURE SURVEYOR.
3. PROJECT COORDINATE SYSTEM IS PENNSYLVANIA STATE PLANE - SOUTH ZONE. VERTICAL DATUM IS NAVD 1988.
4. ROOF DRAIN CONNECTIONS WILL BE MADE APPROXIMATELY 2 FEET BELOW GRADE TO THE TOP OF THE PIPE. THESE ELEVATIONS MUST BE VERIFIED IN FIELD. THE ROOFDRAIN CONNECTION SLOPE WILL BE 0.5% AND DROP 45° WHEN CONNECTION TO ANOTHER PIPE.
5. PIPE SLOPE WILL BE 0.5% AND DROP 45° WHEN CONNECTING TO BASIN PIPE STORAGE.
6. INSTALL THE FLEXSTORM PURE STAINLESS STEEL FRAMING AND "FX" WOVEN POLYPORYLENE SEDIMENT BAG INLET FILTER (OR APPROVED EQUIVALENT) FOR PERMANENT INLET PROTECTION IN ALL EXISTING AND PROPOSED INLETS DRAINING TO AN SMP. (SEE DETAIL C-803)
7. INSTALL SNOUT FOR INLET PRETREATMENT IN ALL EXISTING AND PROPOSED INLETS DRAINING TO AN SMP. (SEE DETAIL ON C-803)
8. EXISTING TREES ARE NOT SHOWN FOR CLARITY.
9. PVC INTERNAL PIPE TO EXIT BUILDING ON GROUND FLOOR, 1' ABOVE SURFACE ELEVATION, AND CONNECT TO PIPE STUB.
10. COMPACTION: ALL BACKFILL MATERIAL IN BASINS AND PIPE TRENCHES SHALL BE INSTALLED IN 8-INCH TO 12-INCH LOOSE LIFTS AND COMPACTED TO 95% OF ITS MAXIMUM DRY DENSITY BY ROLLING EACH LIFT WITH A MINIMUM OF THREE PASSES OF A SHEEPSFOOT VIBRATORY TRENCH ROLLER OR EQUIVALENT.
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20' 0' 20' 40'
scale feet
SCALE: 1"=20'

3/15/2017 11:33 AM

SITE 13-3 - ISSUED FOR CONSTRUCTION

ISS Infrastructure Solution Services
A Design/Build Company
1533 SKIPPACK PIKE, SUITE 2
BLUE BELL, PA 19422
P: (484) 704-7200
F: (267) 200-0414

No.	Revision/Issue	Date
7	ISSUED FOR CONSTRUCTION	3/13/2017
6	ISSUED FOR CONSTRUCTION (WV FIELD CHANGE)	3/6/2017
5	TECHNICAL PLAN REVIEW (IFC)	2/27/2017
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1	TECHNICAL PLAN REVIEW	12/5/2016
0	TECHNICAL PLAN REVIEW	11/10/2016

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Toolkit 811
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PWD TRACKING NUMBER: FY17-STHS-4442-01
DRAWN By : D.H.T.
DESIGNED BY : M.W.M.
CHECKED BY : M.J.C.
DATE : 10-24-2016
SCALE : AS NOTED
CAD FILENAME: C-502.dwg

PROJECT:
PWD STORMWATER CREDIT RETROFIT DESIGN
SITE 13 - PHASE 3
FOR
SKY MANAGEMENT
2810 S. 20TH STREET
PHILADELPHIA, PA

SEAL:
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL JOSEPH COYLE ENGINEER NO. 061136

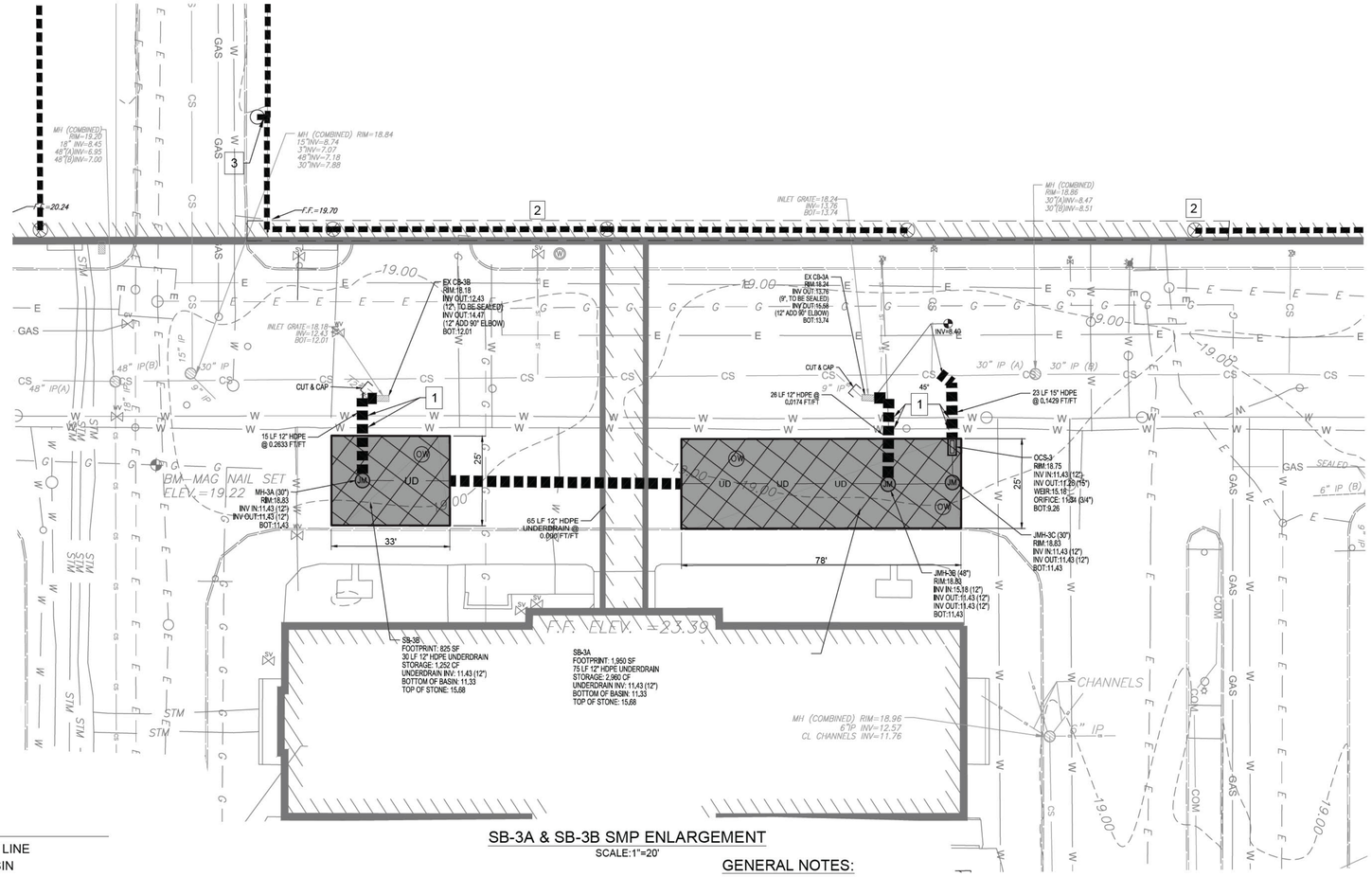
MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

H2O Infrastructure, LLC
1533 SKIPPACK PIKE, SUITE 1
BLUE BELL, PA 19422
PHONE: (484) 704-7417
FAX: (267) 200-0414

SHEET TITLE:
SMP ENLARGEMENT PLAN & DETAILS-2

SHEET NUMBER:
C-502

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SB-3A & SB-3B SMP ENLARGEMENT
SCALE:1"=20'

LEGEND:

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- EXISTING MANHOLE
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- EXISTING ROOF DRAIN LINE
- EXISTING ROOF DRAIN
- EXISTING CONTOUR LINE
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE
- PROPOSED STORM LINE
- PROPOSED INTERIOR STORM LINE
- PROPOSED OUTLET CONTROL STRUCTURE
- PROPOSED SUBSURFACE DETENTION BASIN
- OW — PROPOSED OBSERVATION WELL
- CO — PROPOSED CLEANOUT
- DS 1 — EXISTING DOWNSPOUT
- PROPOSED EXTERNAL DOWNSPOUT & STUB-UP
- PROPOSED TIE TO EXISTING
- MW — EXISTING GROUNDWATER MONITORING WELL
- RW — EXISTING GROUNDWATER RECOVERY WELL

SHEET NOTES:

1. WATER LINE CROSSING AT UNCONFIRMED ELEVATION. USE CAUTION WHEN EXCAVATING PIPE TRENCH.
2. DISCONNECT AND REROUTE INTERNAL DOWNSPOUTS AS LABELED ON THE SECOND FLOOR, BELOW HOMELAND SECURITY.
3. CONNECT INTERNAL PLUMBING TO PIPE TRENCH BELOW GROUND LEVEL. CORE DRILL THROUGH BUILDING WALL UNDERGROUND. PIPE MUST NOT BE VISIBLE FROM THE OUTSIDE.

GENERAL NOTES:

1. PROPERTY LINE SHOWN IS BASED ON "ALTA/ACSM LAND TITLE SURVEY" PLAN PREPARED BY LANGAN ENGINEERING DATED 09/01/2011.
2. ROOF DRAINS LOCATED BY H2O INFRASTRUCTURE SURVEYOR.
3. PROJECT COORDINATE SYSTEM IS PENNSYLVANIA STATE PLANE - SOUTH ZONE. VERTICAL DATUM IS NAVD 1988.
4. ROOF DRAIN CONNECTIONS WILL BE MADE APPROXIMATELY 2 FEET BELOW GRADE TO THE TOP OF THE PIPE. THESE ELEVATIONS MUST BE VERIFIED IN FIELD. THE ROOFDRAIN CONNECTION SLOPE WILL BE 0.5% AND DROP 45° WHEN CONNECTION TO ANOTHER PIPE.
5. PIPE SLOPE WILL BE 0.5% AND DROP 45° WHEN CONNECTING TO BASIN PIPE STORAGE.
6. INSTALL THE FLEXSTORM PURE STAINLESS STEEL FRAMING AND "FX" WOVEN POLYPORYLENE SEDIMENT BAG INLET FILTER (OR APPROVED EQUIVALENT) FOR PERMANENT INLET PROTECTION IN ALL EXISTING AND PROPOSED INLETS DRAINING TO AN SMP. (SEE DETAIL C-803)
7. INSTALL SNOUT FOR INLET PRETREATMENT IN ALL EXISTING AND PROPOSED INLETS DRAINING TO AN SMP. (SEE DETAIL ON C-803)
8. EXISTING TREES ARE NOT SHOWN FOR CLARITY.
9. PVC INTERNAL PIPE TO EXIT BUILDING ON GROUND FLOOR, 1' ABOVE SURFACE ELEVATION, AND CONNECT TO PIPE STUB.
10. COMPACTION: ALL BACKFILL MATERIAL IN BASINS AND PIPE TRENCHES SHALL BE INSTALLED IN 8-INCH TO 12-INCH LOOSE LIFTS AND COMPACTED TO 95% OF ITS MAXIMUM DRY DENSITY BY ROLLING EACH LIFT WITH A MINIMUM OF THREE PASSES OF A SHEEPSFOOT VIBRATORY TRENCH ROLLER OR EQUIVALENT.
11. THE PROPOSED INLET GRATE ELEVATION ON THE PLANS SHALL BE VERIFIED IN FIELD. ENSURE THAT THE TOP OF GRATE ELEVATION IS 2 INCHES LOWER THAN THE ADJACENT EXISTING GRADE SO THAT SURFACE RUNOFF DOES NOT BYPASS THE INLET GRATE OR POND AROUND THE INLET.
12. THE PROPOSED MANHOLE RIM ELEVATIONS ON THE PLANS SHALL BE VERIFIED WITH ACTUAL ELEVATIONS IN THE FIELD. ENSURE THAT THE INSTALLED MANHOLE RIM ELEVATION MATCHES THE ADJACENT EXISTING GRADE.

20' 0' 20' 40'
scale feet
SCALE: 1"=20'

FOR CONSTRUCTION

SITE 13-3 - ISSUED FOR CONSTRUCTION

ISS Infrastructure Solution Services
A Design/Build Company
1533 SKIPPACK PIKE, SUITE 2
BLUE BELL, PA 19422
P: (484) 704-7200
F: (267) 200-0414

No.	Revision/Issue	Date
7	ISSUED FOR CONSTRUCTION	3/13/2017
6	ISSUED FOR CONSTRUCTION (W/ FIELD CHANGE)	3/6/2017
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0	TECHNICAL PLAN REVIEW	11/10/2016

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PWD TRACKING NUMBER:	FY17-STHS-4442-01
DRAWN By :	D.H.T.
DESIGNED BY :	M.W.M.
CHECKED BY :	M.J.C.
DATE :	10-24-2016
SCALE :	AS NOTED
CAD FILENAME:	C-503.dwg

PROJECT:
PWD STORMWATER CREDIT RETROFIT DESIGN
SITE 13 - PHASE 3
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SKY MANAGEMENT
2810 S. 20TH STREET
PHILADELPHIA, PA

SEAL:
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PROFESSIONAL
MICHAEL JOSEPH COYLE
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NO. 061136

MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

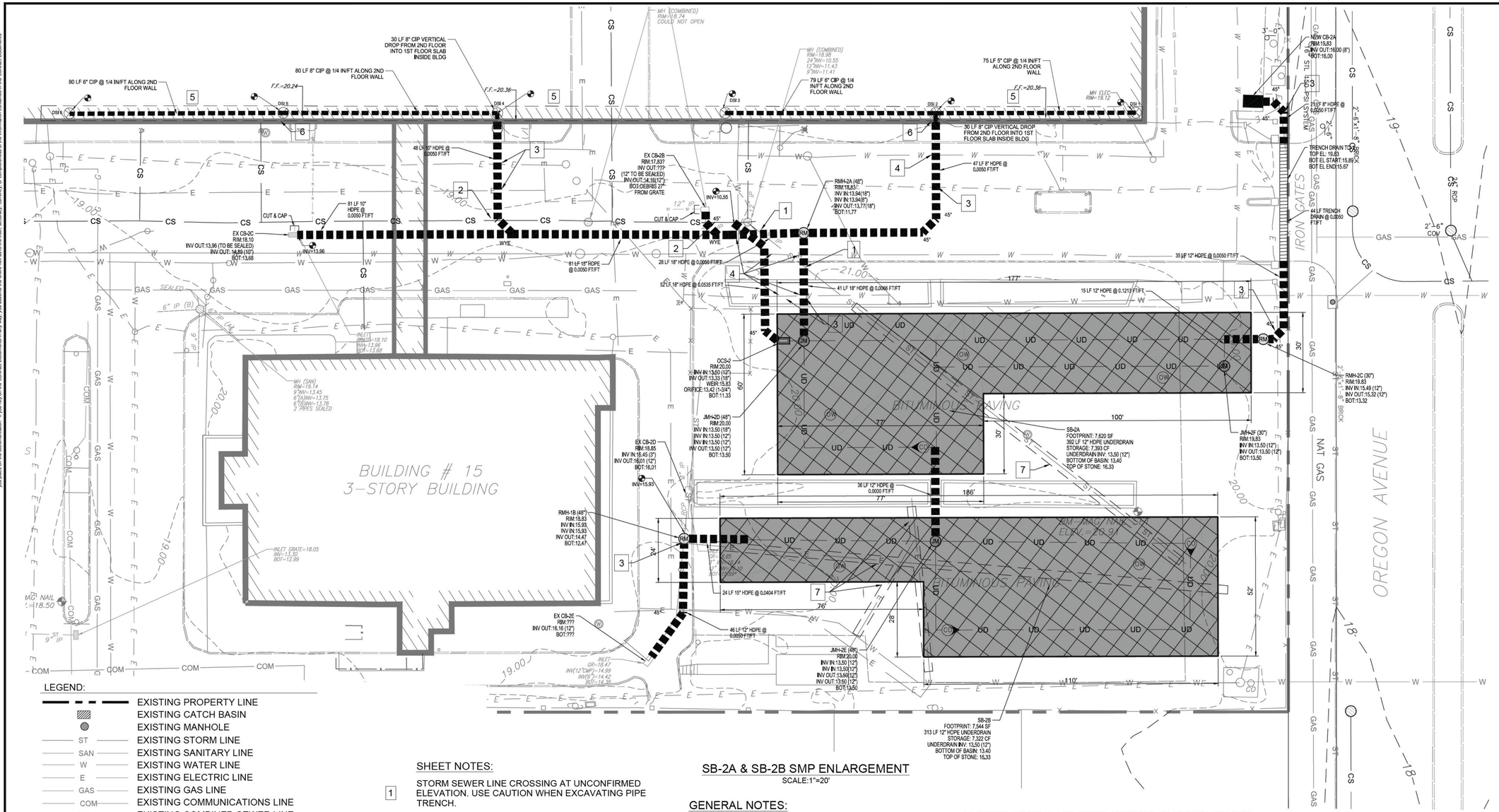
H2O Infrastructure, LLC
1533 SKIPPACK PIKE, SUITE 1
BLUE BELL, PA 19422
PHONE: (484) 704-7417
FAX: (267) 200-0414

SHEET TITLE:
SMP ENLARGEMENT PLAN & DETAILS-3

SHEET NUMBER:
C-503

3/15/2017 11:49 AM

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- EXISTING CATCH BASIN
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- EXISTING ROOF DRAIN
- EXISTING CONTOUR LINE
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE
- PROPOSED STORM LINE
- PROPOSED INTERIOR STORM LINE
- PROPOSED OUTLET CONTROL STRUCTURE
- PROPOSED SUBSURFACE DETENTION BASIN
- PROPOSED SURFACE BIODETENTION BASIN
- OW — PROPOSED OBSERVATION WELL
- CO — PROPOSED CLEANOUT
- DS 1 — EXISTING DOWNSPOUT
- PROPOSED EXTERNAL DOWNSPOUT & STUB-UP
- PROPOSED TIE TO EXISTING
- PROPOSED TRENCH/SLOT DRAIN
- MW — EXISTING GROUNDWATER MONITORING WELL
- RW — EXISTING GROUNDWATER RECOVERY WELL

SHEET NOTES:

1. STORM SEWER LINE CROSSING AT UNCONFIRMED ELEVATION. USE CAUTION WHEN EXCAVATING PIPE TRENCH.
2. COMBINED SEWER LINE CROSSING AT UNCONFIRMED ELEVATION. USE CAUTION WHEN EXCAVATION PIPE TRENCH.
3. ELECTRIC LINE CROSSING AT UNCONFIRMED ELEVATION. USE CAUTION WHEN EXCAVATING PIPE TRENCH.
4. WATER LINE CROSSING AT UNCONFIRMED ELEVATION. USE CAUTION WHEN EXCAVATING PIPE TRENCH.
5. DISCONNECT AND REROUTE INTERNAL DOWNSPOUTS AS LABELED ON THE SECOND FLOOR.
6. CONNECT INTERNAL PLUMBING TO PIPE TRENCH BELOW GROUND LEVEL. CORE DRILL THROUGH BUILDING WALL UNDERGROUND. PIPE MUST NOT BE VISIBLE FROM THE OUTSIDE.

   STORM SEWER PIPE & ELECTRIC LINE CONTINUES INTO PROPOSED BASIN SB-2 AT UNKNOWN ELEVATIONS. USE CAUTION AND CONFIRM LOCATIONS AT BEGINNING OF BASIN EXCAVATION. STORM PIPE SHOULD BE ABANDONED. ELECTRIC LINES MAY BE ACTIVE AND IS CONNECTED TO THE STREET LAMP IN THE PARKING LOT FOR TEMPORARY LIGHTING. USE CAUTION AND POWER DOWN BEFORE EXCAVATING THE APPROPRIATE PORTION OF THE BASIN.
7. SEE SB-2A & SB-2B SMP ENLARGEMENT

SB-2A & SB-2B SMP ENLARGEMENT
SCALE:1"=20'

GENERAL NOTES:

1. PROPERTY LINE SHOWN IS BASED ON "ALTA/ACSM LAND TITLE SURVEY" PLAN PREPARED BY LANGAN ENGINEERING DATED 09/01/2011.
2. ROOF DRAINS LOCATED BY H2O INFRASTRUCTURE SURVEYOR.
3. PROJECT COORDINATE SYSTEM IS PENNSYLVANIA STATE PLANE - SOUTH ZONE. VERTICAL DATUM IS NAVD 1988.
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5. PIPE SLOPE WILL BE 0.5% AND DROP 45° WHEN CONNECTING TO BASIN PIPE STORAGE.
6. INSTALL THE FLEXSTORM PURE STAINLESS STEEL FRAMING AND "FX" WOVEN POLYPORYLENE SEDIMENT BAG INLET FILTER (OR APPROVED EQUIVALENT) FOR PERMANENT INLET PROTECTION IN ALL EXISTING AND PROPOSED INLETS DRAINING TO AN SMP. (SEE DETAIL C-803)
7. INSTALL SNOUT FOR INLET PRETREATMENT IN ALL EXISTING AND PROPOSED INLETS DRAINING TO AN SMP. (SEE DETAIL ON C-803)
8. EXISTING TREES ARE NOT SHOWN FOR CLARITY.
9. PVC INTERNAL PIPE TO EXIT BUILDING ON GROUND FLOOR, 1' ABOVE SURFACE ELEVATION, AND CONNECT TO PIPE STUB.
10. COMPACTION: ALL BACKFILL MATERIAL IN BASINS AND PIPE TRENCHES SHALL BE INSTALLED IN 8-INCH TO 12-INCH LOOSE LIFTS AND COMPACTED TO 95% OF ITS MAXIMUM DRY DENSITY BY ROLLING EACH LIFT WITH A MINIMUM OF THREE PASSES OF A SHEEPSFOOT VIBRATORY TRENCH ROLLER OR EQUIVALENT.
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20' 0' 20' 40' scale feet
SCALE: 1"=20'

FOR CONSTRUCTION

SITE 13-3 - ISSUED FOR

ISS Infrastructure Solution Services
A Design/Build Company
1533 SKIPPACK PIKE, SUITE 2
BLUE BELL, PA 19422
P: (484) 704-7200
F: (267) 200-0414

No.	Revision/Issue	Date
7	ISSUED FOR CONSTRUCTION	3/13/2017
6	ISSUED FOR CONSTRUCTION (W/ FIELD CHANGE)	3/6/2017
5	TECHNICAL PLAN REVIEW (IFC)	2/27/2017
4	TECHNICAL PLAN REVIEW	2/22/2017
3	TECHNICAL PLAN REVIEW	2/16/2017
2	TECHNICAL PLAN REVIEW	1/27/2017
1	TECHNICAL PLAN REVIEW	12/5/2016
0	TECHNICAL PLAN REVIEW	11/10/2016

CALL BEFORE YOU DIG
Toolkit 811
PA. ONE CALL

PWD TRACKING NUMBER: FY17-STHS-4442-01
DRAWN By : D.H.T.
DESIGNED BY : M.W.M.
CHECKED BY : M.J.C.
DATE : 10-24-2016
SCALE : AS NOTED
CAD FILENAME: C-504.dwg

PROJECT:
PWD STORMWATER CREDIT RETROFIT DESIGN
SITE 13 - PHASE 3
FOR
SKY MANAGEMENT
2810 S. 20TH STREET
PHILADELPHIA, PA

SEAL:
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL JOSEPH COYLE ENGINEER NO. 061136

MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

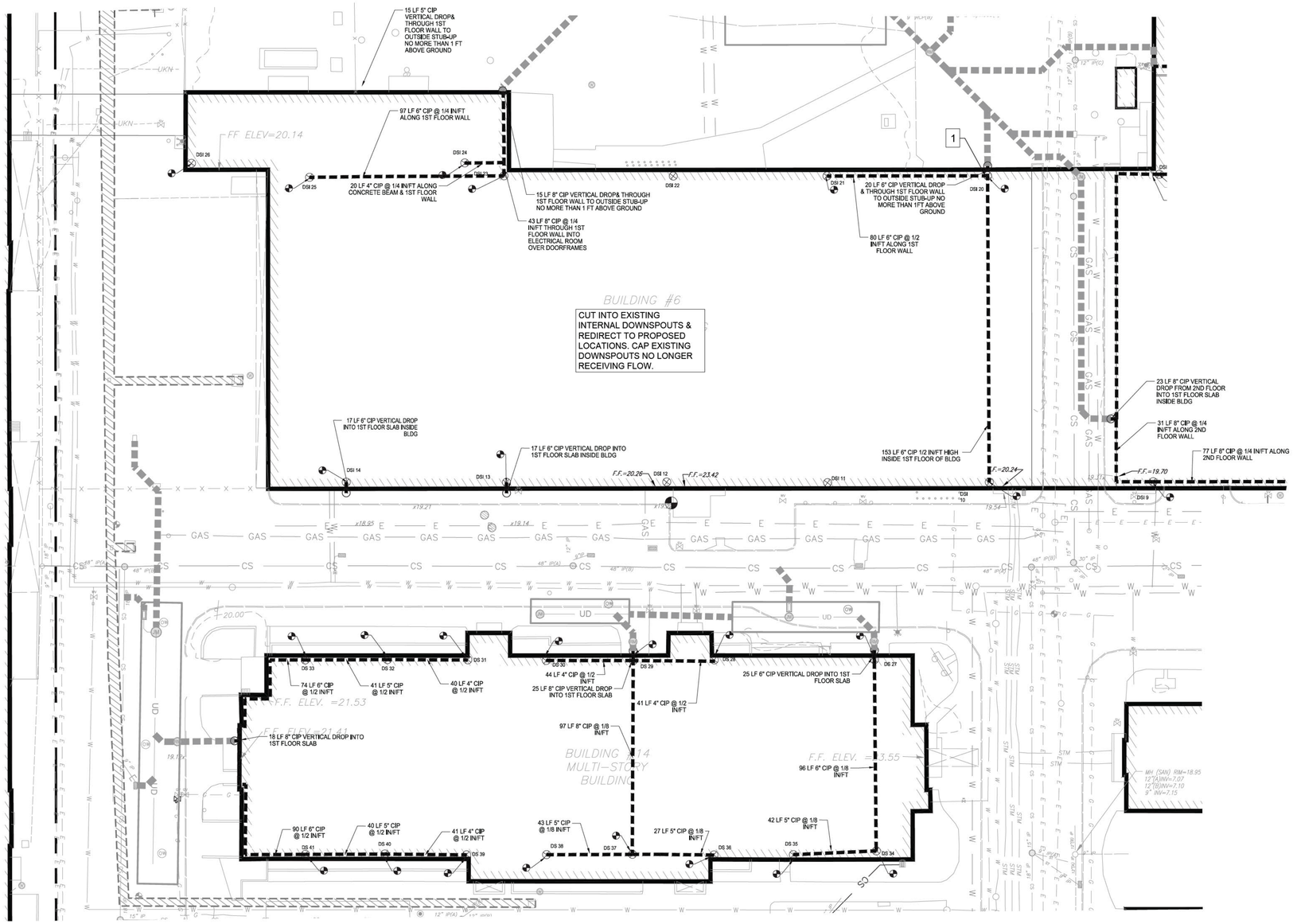
H2O Infrastructure, LLC
1533 SKIPPACK PIKE, SUITE 1
BLUE BELL, PA 19422
PHONE: (484) 704-7417
FAX: (267) 200-0414

SHEET TITLE:
SMP ENLARGEMENT PLAN & DETAILS-4

SHEET NUMBER:
C-504

3/15/2017 11:51 AM

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SHEET NOTES:

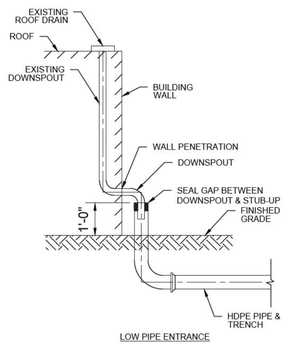
1 ROOF IS CURRENTLY LEAKING. MUST REPAIR BEFORE FINISHING INTERNAL PIPING.

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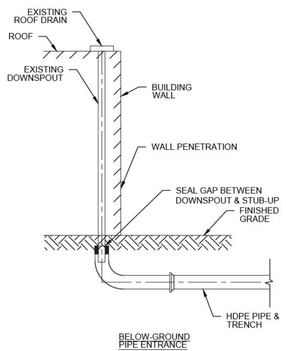
- EXISTING PROPERTY LINE
- EXISTING CATCH BASIN
- EXISTING MANHOLE
- ST — EXISTING STORM LINE
- SAN — EXISTING SANITARY LINE
- W — EXISTING WATER LINE
- E — EXISTING ELECTRIC LINE
- GAS — EXISTING GAS LINE
- COM — EXISTING COMMUNICATIONS LINE
- CS — EXISTING COMBINED SEWER LINE
- EXISTING ROOF DRAIN LINE
- EXISTING ROOF DRAIN AND DOWNSPOUT
- EXISTING CONTOUR LINE
- PROPOSED CATCH BASIN
- PROPOSED HDPE STORM LINE
- PROPOSED INTERIOR PVC ROOF DRAIN
- PROPOSED EXTERNAL DOWNSPOUT TIE-IN
- PROPOSED TIE TO EXISTING
- MW — EXISTING GROUNDWATER MONITORING WELL
- RW — EXISTING GROUNDWATER RECOVERY WELL

NOTES:

1. PROPERTY LINE SHOWN IS BASED ON "ALTA/ACSM LAND TITLE SURVEY" PLAN PREPARED BY LANGAN ENGINEERING DATED 09/01/2011.PROJECT COORDINATE SYSTEM IS PENNSYLVANIA STATE PLANE - SOUTH ZONE. VERTICAL DATUM IS NAVD 1988.
2. ROOF DRAINS LOCATED BY H20 INFRASTRUCTURE SURVEYOR.
3. EXISTING TREES ARE NOT SHOWN FOR CLARITY.
4. INSTALL THE FRYE-FLOW SYSTEMS SEDIMENT CONTROL ASSEMBLIES (OR APPROVED EQUIVALENT) FOR PERMANENT INLET PROTECTION IN ALL EXISTING AND PROPOSED INLETS DRAINING TO AN SMP. (SEE DETAIL C-803)
5. ROOF DRAIN CONNECTIONS WILL BE MADE APPROXIMATELY 2 FEET BELOW GRADE TO THE TOP OF THE PIPE.
6. INSTALL SNOUTS FOR INLET PRETREATMENT IN ALL EXISTING AND PROPOSED INLETS DRAINING TO A STORMWATER MANAGEMENT SYSTEM (SEE DETAIL C-803).
7. SUMPS NEED TO BE BUILT INTO NEW STRUCTURES, MINIMUM 19" BELOW OUTFLOW INVERT ELEVATION (SEE DETAIL C-802).
8. PIPE CAPS DEPEND ON THE PIPE MATERIAL, SIZE, CONDITION, AND LOCATION. DETAILS FOR TWO TYPES OF PIPE CAPS ON DETAIL C-803.
9. ROOF DRAIN CONNECTION SLOPES WILL BE 0.5% AND DROP 45° WHEN CONNECTING TO ANOTHER PIPE.
10. ALL PIPE CONNECTIONS FROM INDOOR PLUMBING TO OUTDOOR TRENCH PIPE LINES THAT OCCUR UNDERGROUND MUST BE COORDINATED WITH THE CONSTRUCTION CREW TO CONFIRM BUILDING WALL CORE DRILL LOCATIONS AND ELEVATIONS.



LOW PIPE ENTRANCE



BELOW-GROUND PIPE ENTRANCE



SCALE: 1"=30'

3/15/2017 11:55 AM

FOR CONSTRUCTION - ISSUED FOR SITE 13-3

ISS Infrastructure Solution Services
A Design/Build Company
1533 SKIPPACK PIKE, SUITE 2
BLUE BELL, PA 19422
P: (484) 704-7200
F: (267) 200-0414

No.	Revision/Issue	Date
7	ISSUED FOR CONSTRUCTION	3/13/2017
6	ISSUED FOR CONSTRUCTION (W/ FIELD CHANGE)	3/6/2017
5	TECHNICAL PLAN REVIEW (IFC)	2/27/2017
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2	TECHNICAL PLAN REVIEW	1/27/2017
1	TECHNICAL PLAN REVIEW	12/5/2016
0	TECHNICAL PLAN REVIEW	11/10/2016

CALL BEFORE YOU DIG
Toolkit 811
PA. ONE CALL

PWD TRACKING NUMBER: FY17-STHS-4442-01
DRAWN By : D.H.T.
DESIGNED BY : M.W.M.
CHECKED BY : M.J.C.
DATE : 10-24-2016
SCALE : AS NOTED
CAD FILENAME: C-601.dwg

PROJECT:
PWD STORMWATER CREDIT RETROFIT DESIGN
SITE 13 - PHASE 3
FOR
SKY MANAGEMENT
2810 S. 20TH STREET
PHILADELPHIA, PA

SEAL:
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL JOSEPH COYLE ENGINEER NO. 061136

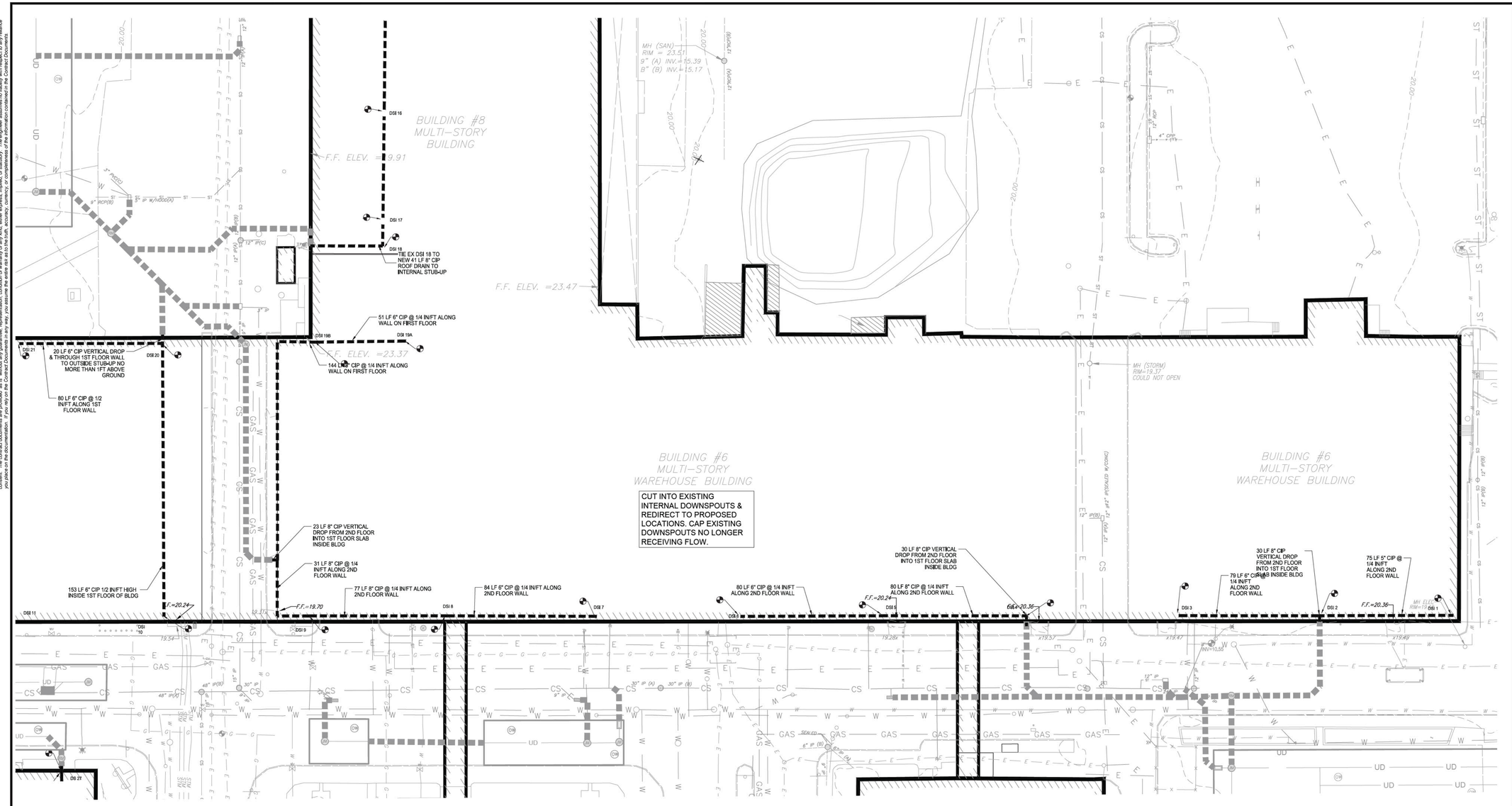
MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

H2O Infrastructure, LLC
1533 SKIPPACK PIKE, SUITE 1
BLUE BELL, PA 19422
PHONE: (484) 704-7417
FAX: (267) 200-0414

SHEET TITLE:
BUILDING INTERNAL PLUMBING PLAN-1

SHEET NUMBER:
C-601

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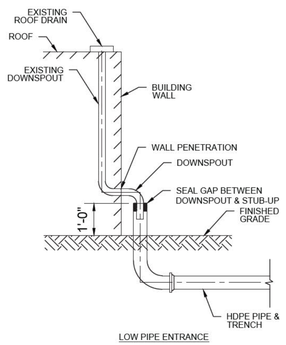


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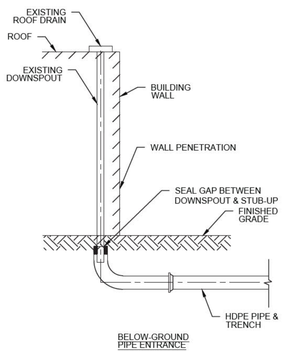
- EXISTING PROPERTY LINE
- EXISTING CATCH BASIN
- EXISTING MANHOLE
- ST — EXISTING STORM LINE
- SAN — EXISTING SANITARY LINE
- W — EXISTING WATER LINE
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NOTES:

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LOW PIPE ENTRANCE



BELOW-GROUND
PIPE ENTRANCE



SCALE: 1"=30'

3/15/2017 11:57 AM

SITE 13-3 - ISSUED FOR CONSTRUCTION

ISS Infrastructure Solution Services
A Design/Build Company
1533 SKIPPACK PIKE, SUITE 2
BLUE BELL, PA 19422
P: (484) 704-7200
F: (267) 200-0414

No.	Revision/Issue	Date
7	ISSUED FOR CONSTRUCTION	3/13/2017
6	ISSUED FOR CONSTRUCTION (W/ FIELD CHANGE)	3/6/2017
5	TECHNICAL PLAN REVIEW (IFC)	2/27/2017
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2	TECHNICAL PLAN REVIEW	1/27/2017
1	TECHNICAL PLAN REVIEW	12/5/2016
0	TECHNICAL PLAN REVIEW	11/10/2016

CALL BEFORE YOU DIG
Toolkit 811
PA. ONE CALL

PWD TRACKING NUMBER:	FY17-STHS-4442-01
DRAWN By :	D.H.T.
DESIGNED BY :	M.W.M.
CHECKED BY :	M.J.C.
DATE :	10-24-2016
SCALE :	AS NOTED
CAD FILENAME:	C-602.dwg

PROJECT:
PWD STORMWATER
CREDIT RETROFIT
DESIGN
SITE 13 - PHASE 3
FOR
SKY MANAGEMENT
2810 S. 20TH STREET
PHILADELPHIA, PA

SEAL:
COMMONWEALTH OF PENNSYLVANIA
REGISTERED
PROFESSIONAL
MICHAEL JOSEPH COYLE
ENGINEER
NO. 061136

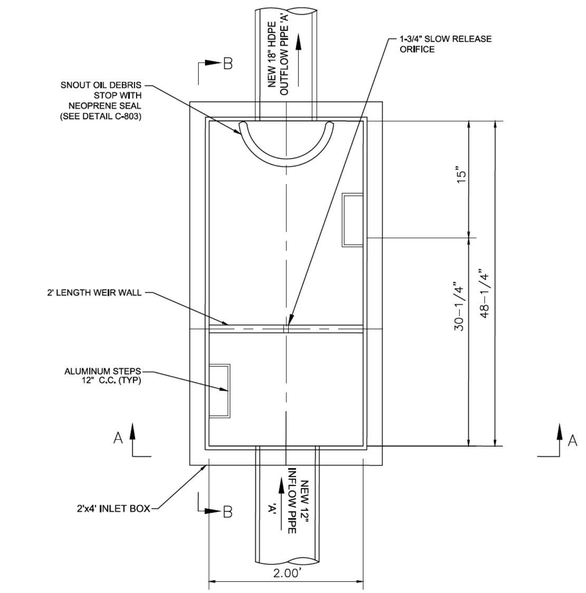
MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

H2O Infrastructure, LLC
1533 SKIPPACK PIKE, SUITE 1
BLUE BELL, PA 19422
PHONE: (484) 704-7417
FAX: (267) 200-0414

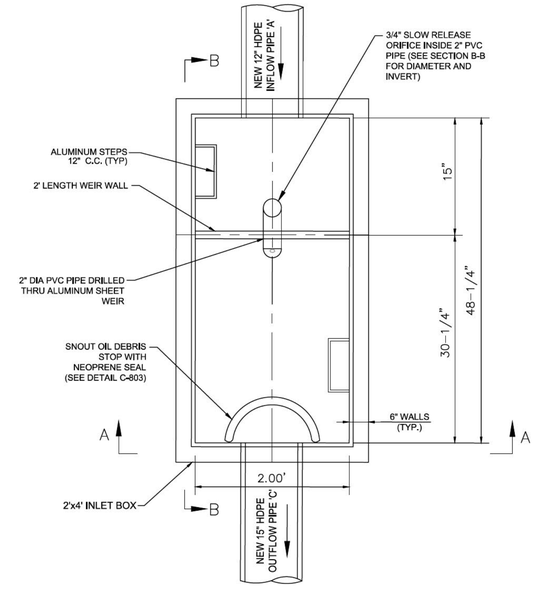
SHEET TITLE:
BUILDING INTERNAL
PLUMBING PLAN-2

SHEET NUMBER:
C-602

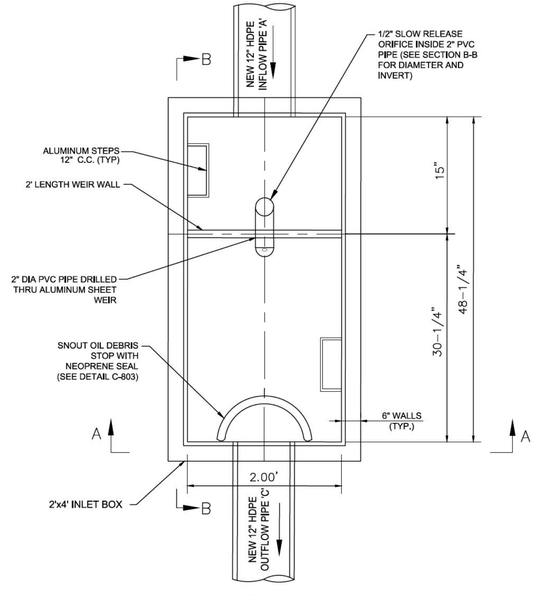
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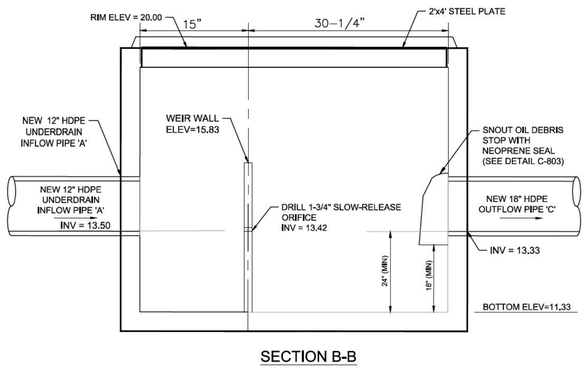
SECTION C-C



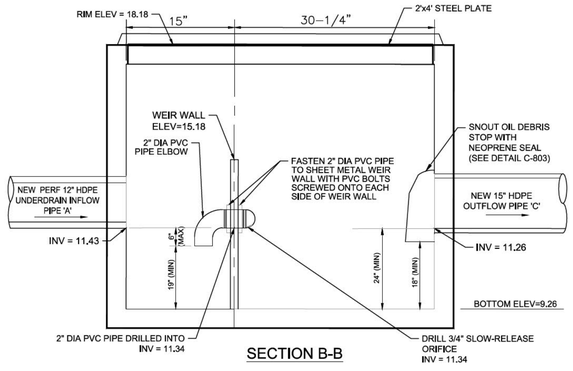
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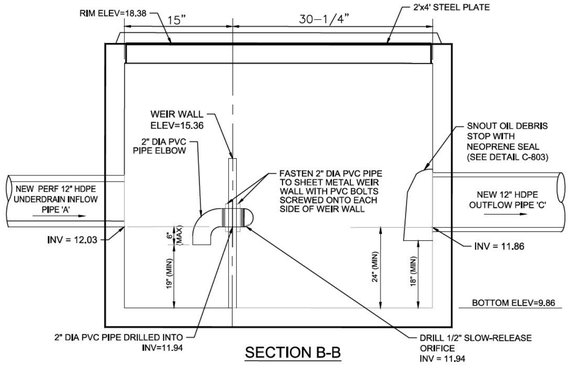
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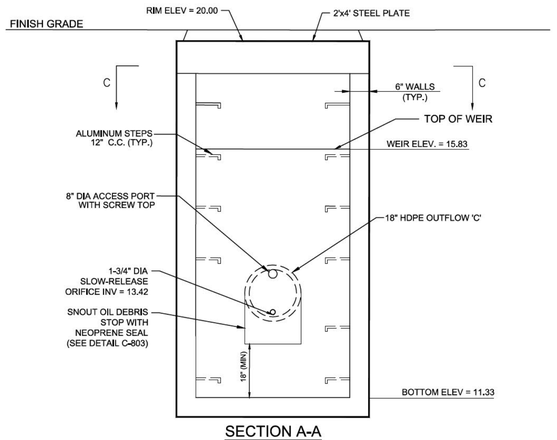
SECTION B-B



SECTION B-B



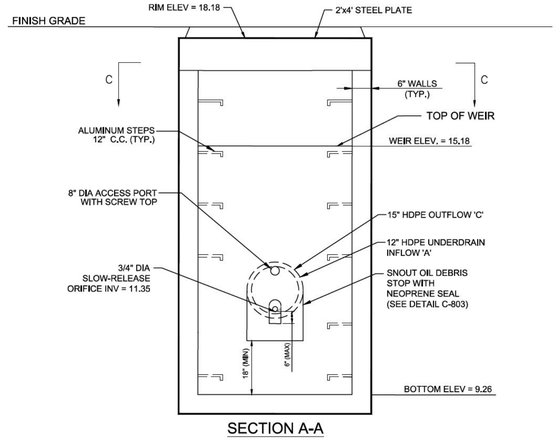
SECTION B-B



SECTION A-A

OUTLET CONTROL STRUCTURE OCS-2
2'x4' INLET BOX

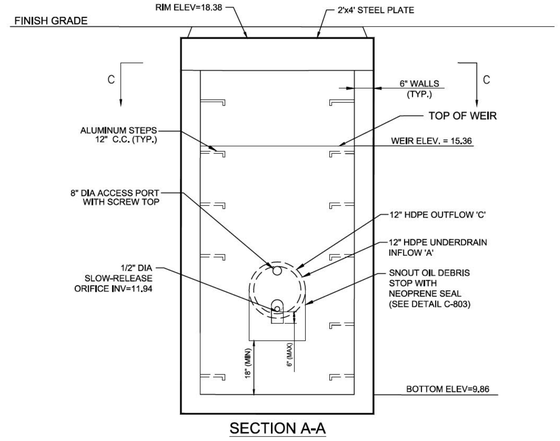
NOT TO SCALE



SECTION A-A

OUTLET CONTROL STRUCTURE OCS-3
2'x4' INLET BOX

NOT TO SCALE



SECTION A-A

OUTLET CONTROL STRUCTURE OCS-13
2'x4' INLET BOX

NOT TO SCALE

3/15/2017 11:38 AM

FOR CONSTRUCTION

SITE 13-3 - ISSUED FO

ISS Infrastructure Solution Services
A Design/Build Company
1533 SKIPPACK PIKE, SUITE 2
BLUE BELL, PA 19422
P: (484) 704-7200
F: (267) 200-0414

No.	Revision/Issue	Date
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1	TECHNICAL PLAN REVIEW	12/5/2016
0	TECHNICAL PLAN REVIEW	11/10/2016

CALL BEFORE YOU DIG
Toolkit 811
PA. ONE CALL

PWD TRACKING NUMBER: FY17-STHS-4442-01
DRAWN By : D.H.T.
DESIGNED BY : M.W.M.
CHECKED BY : M.J.C.
DATE : 10-24-2016
SCALE : AS NOTED
CAD FILENAME: C-801.dwg

PROJECT:
PWD STORMWATER CREDIT RETROFIT DESIGN
SITE 13 - PHASE 3
FOR
SKY MANAGEMENT
2810 S. 20TH STREET
PHILADELPHIA, PA

SEAL:
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL JOSEPH COYLE ENGINEER NO. 061136

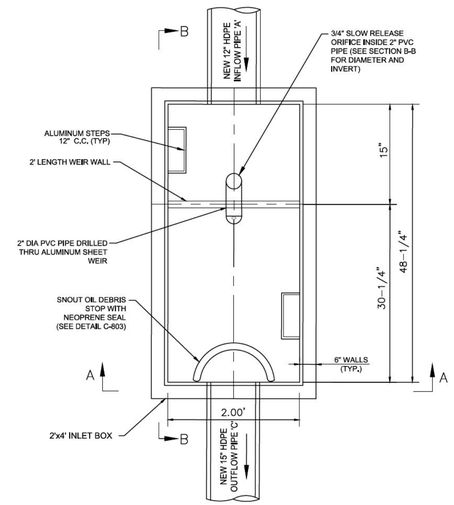
MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

H2O Infrastructure, LLC
1533 SKIPPACK PIKE, SUITE 1
BLUE BELL, PA 19422
PHONE: (484) 704-7417
FAX: (267) 200-0414

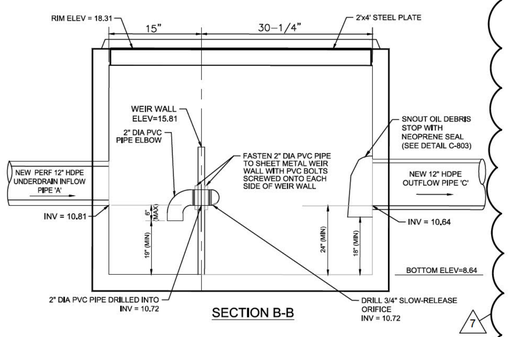
SHEET TITLE:
SITE AND STORMWATER DETAILS -1

SHEET NUMBER:
C-801

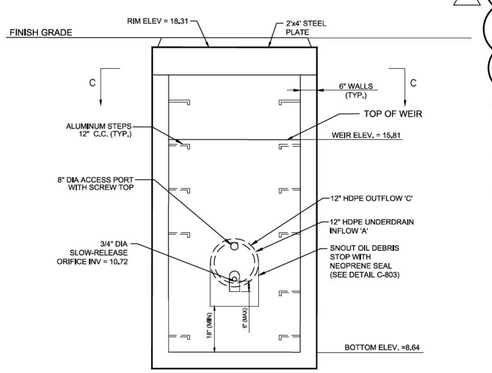
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SECTION C-C



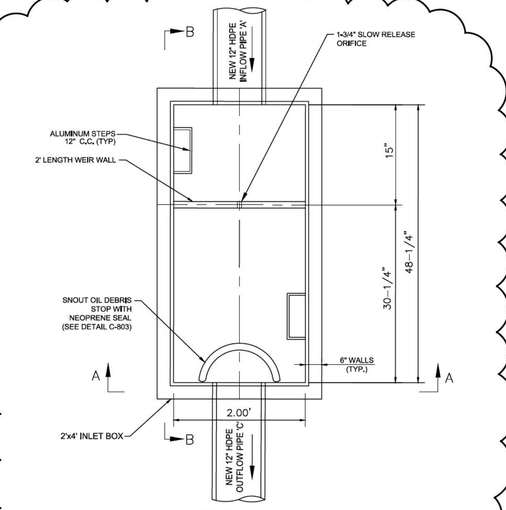
SECTION B-B



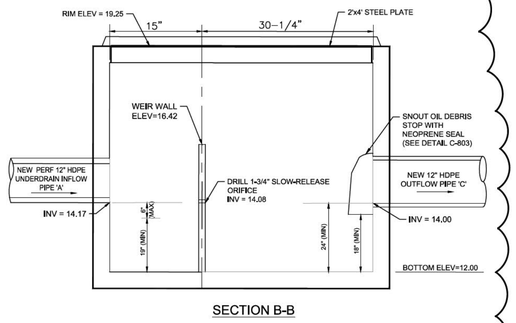
SECTION A-A

OUTLET CONTROL STRUCTURE OCS-14
2'x4' INLET BOX

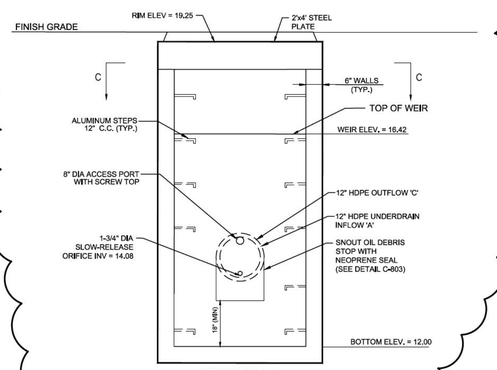
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SECTION C-C



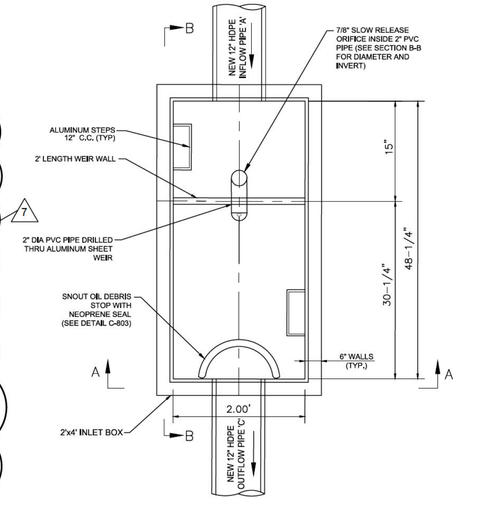
SECTION B-B



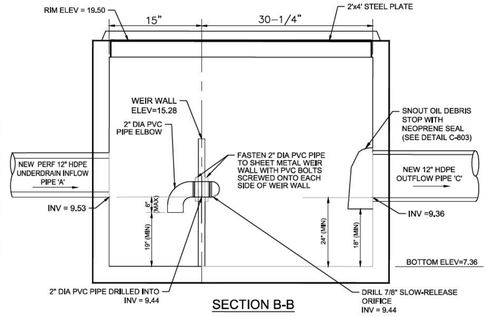
SECTION A-A

OUTLET CONTROL STRUCTURE OCS-15
2'x4' INLET BOX

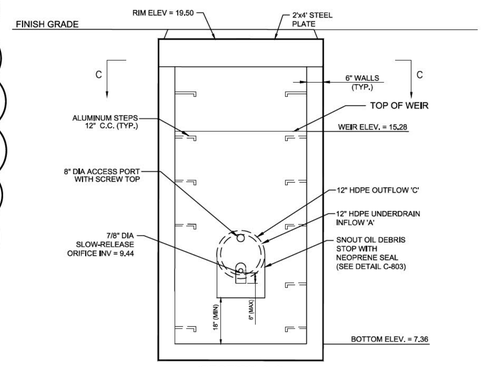
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SECTION C-C



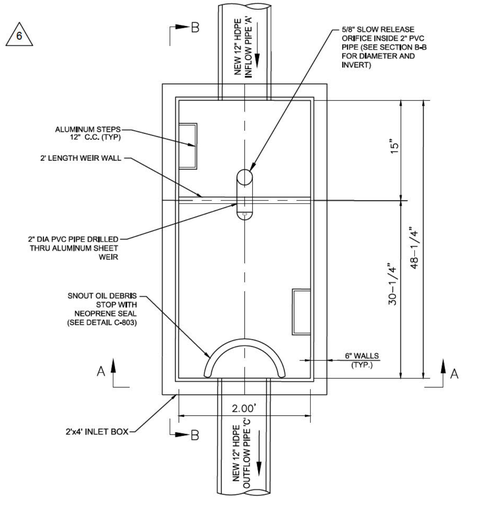
SECTION B-B



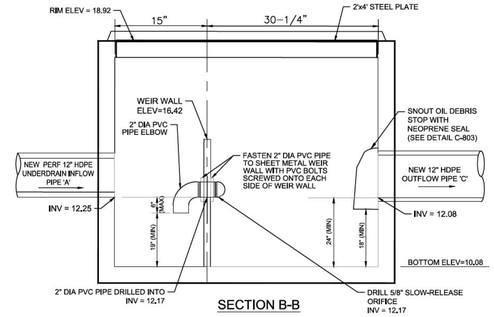
SECTION A-A

OUTLET CONTROL STRUCTURE OCS-16
2'x4' INLET BOX

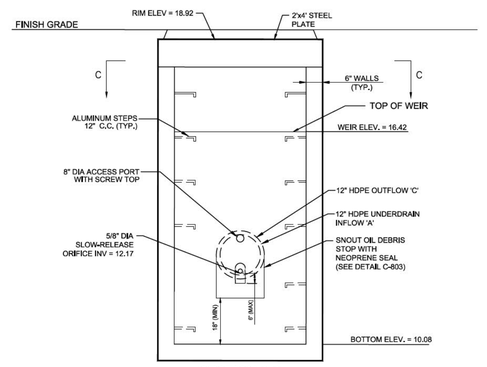
NOT TO SCALE



SECTION C-C



SECTION B-B



SECTION A-A

OUTLET CONTROL STRUCTURE OCS-17
2'x4' INLET BOX

NOT TO SCALE

3/15/2017 11:38 AM

SITE 13-3 - ISSUED FOR CONSTRUCTION

ISS Infrastructure Solution Services
A Design/Build Company
1533 SKIPPACK PIKE, SUITE 2
BLUE BELL, PA 19422
P: (484) 704-7200
F: (267) 200-0414

No.	Revision/Issue	Date
7	ISSUED FOR CONSTRUCTION	3/13/2017
6	ISSUED FOR CONSTRUCTION (W/ FIELD CHANGE)	3/6/2017
5	TECHNICAL PLAN REVIEW (IFC)	2/27/2017
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3	TECHNICAL PLAN REVIEW	2/16/2017
2	TECHNICAL PLAN REVIEW	1/27/2017
1	TECHNICAL PLAN REVIEW	12/5/2016
0	TECHNICAL PLAN REVIEW	11/10/2016

CALL BEFORE YOU DIG
Toolkit 811
PA. ONE CALL

PWD TRACKING NUMBER:	FY17-STHS-4442-01
DRAWN By :	D.H.T.
DESIGNED BY :	M.W.M.
CHECKED BY :	M.J.C.
DATE :	10-24-2016
SCALE :	AS NOTED
CAD FILENAME:	C-802.dwg

PROJECT:

PWD STORMWATER CREDIT RETROFIT DESIGN
SITE 13 - PHASE 3

FOR

SKY MANAGEMENT
2810 S. 20TH STREET
PHILADELPHIA, PA

SEAL:

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — MICHAEL JOSEPH COYLE — ENGINEER — NO. 061136

MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

H2O Infrastructure, LLC
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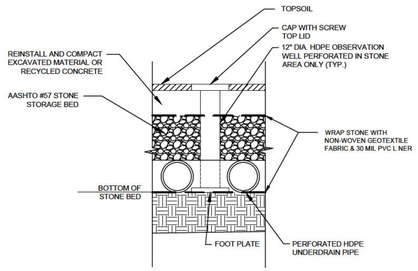
SHEET TITLE:

SITE AND STORMWATER DETAILS -2

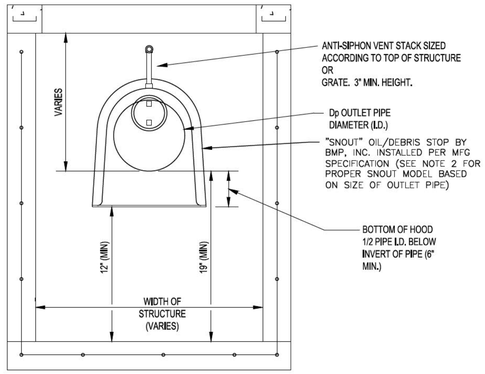
SHEET NUMBER:

C-802

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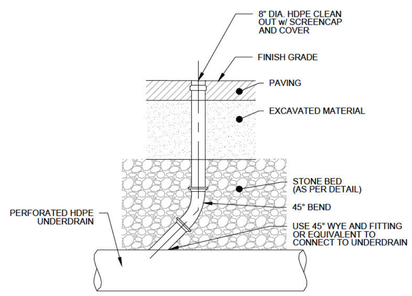
OBSERVATION WELL DETAIL
N.T.S.



SNOUT OIL DEBRIS STOP
NOT TO SCALE

NOTES:
1. USE ONLY "F" SERIES SNOUTS FOR RECTANGULAR OR SQUARE STRUCTURES AND ONLY "R" SERIES SNOUTS FOR ROUND STRUCTURES.
2. SIZING:

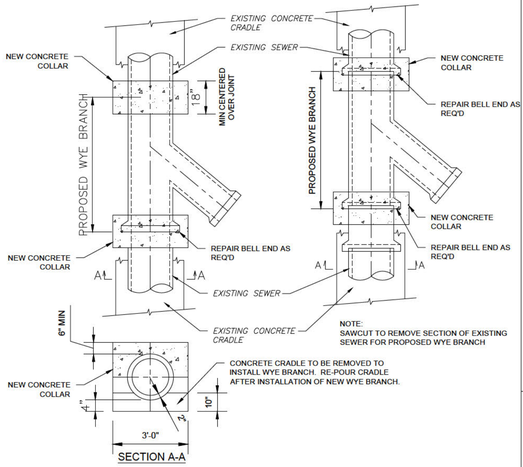
STRUCTURE OUTLET HOLE SIZE	SNOUT SIZE
11,9" O.D. OR LESS	12 F or R
12,0"-17,9" O.D.	18 F or R
18,0"-23,9" O.D.	24 F or R
24,0"-29,9" O.D.	30 F or R
30,0"-47,9" O.D.	48 F
48,0"-95,9" O.D.	96 F



SUBSURFACE INFILTRATION BASIN CLEANOUT DETAIL
NOT TO SCALE

SEWER INSTALLATION NOTES:

1. ALL WORK TO BE DONE IN ACCORDANCE WITH THE CITY OF PHILADELPHIA WATER DEPARTMENT "STANDARD DETAILS & STANDARD SPECIFICATIONS FOR SEWERS", 1985 EDITION.
2. THE CONTRACTOR PERFORMING THE WATER & SEWER INSTALLATION MUST BE PREQUALIFIED BY THE PHILADELPHIA WATER DEPARTMENT (PWD). CONTACT MR. BRIAN MOHL OF THE PROJECTS MANAGEMENT UNIT AT (215) 685-6339.
3. THE APPROVED WORK SHALL BE DONE IN THE PRESENCE OF A PWD INSPECTOR.
4. THE CONTRACTOR PERFORMING THIS WORK IS TO NOTIFY THE PWD CONSTRUCTION DIVISION, 1101 MARKET STREET, 2nd FLOOR, PHONE (215) 685-6341, AT LEAST 7 DAYS IN ADVANCE FOR ASSIGNMENT OF AN INSPECTOR TO THE JOB.
5. THE CONTRACTOR MUST PROVIDE OFFICE SPACE FOR USE BY THE PWD INSPECTOR DURING CONSTRUCTION.
6. APPROVAL OF THESE PLANS BY THE WATER DEPARTMENT IS STRICTLY LIMITED TO THE DESIGN OF SEWERS 15-INCHES IN DIAMETER AND LARGER SHOWN WITHIN THE LIMITS OF THE CITY OF PHILADELPHIA PUBLIC RIGHT OF WAY. ADDITIONAL APPROVALS AND PERMITS ARE REQUIRED FOR ALL DRAINAGE CONNECTIONS TO THE EXISTING PWD FACILITIES.
7. THE ELEVATION OF THE EXISTING SEWER AT THE CONNECTION POINT MUST BE FIELDCHECKED PRIOR TO CONSTRUCTING THE NEW SEWER.
8. FIELD-FABRICATED WYE BRANCHES AND BENDS ARE NOT PERMITTED.
9. A LIST OF ALL MATERIALS AND SUPPLIERS MUST BE SUBMITTED TO THE PWD CONSTRUCTION BRANCH FOR APPROVAL.
10. THE CONTRACTOR OR ENGINEER IS RESPONSIBLE FOR OBTAINING ALL ADDITIONAL PERMITS AND APPROVALS FROM ALL AFFECTED CITY AGENCIES AND UTILITIES.
11. ALL DRAINAGE LATERAL CONNECTION TO EXISTING OR PROPOSED RCP IS TO BE MADE WITH RESILIENT SADDLE CONNECTION.
12. PRIOR TO OBTAINING A BUILDING PERMIT, THE CONTRACTOR IS REQUIRED TO OBTAIN PWD STORMWATER MANAGEMENT APPROVAL, AND SEWAGE FACILITIES PLANNING (ACT 537) APPROVAL.
13. ANY CHANGE TO, OR DEVIATION FROM, THE FINAL APPROVED DESIGN PLANS DURING CONSTRUCTION MUST BE APPROVED BY THE ASSIGNED PWD-CONSTRUCTION DIVISION ENGINEER AND BY THE PWD-DESIGN BRANCH PROJECT ENGINEER.
14. PWD RESERVES THE RIGHT TO REQUEST ADDITIONAL BORINGS DURING CONSTRUCTION SHOULD THE SOIL EXCAVATED IN THAT AREA APPEAR TO BE UNSUITABLE.
15. ALL SEWER WORK MUST BE PERFORMED IN TRENCHES. OPEN CUT OR BENCHING WILL NOT BE PERMITTED. OAK TIMBER SHORING MUST BE USED TO SUPPORT ADJACENT STRUCTURES AND UNDERGROUND UTILITIES, AND IN ACCORDANCE WITH OSHA STANDARDS CFR29, PART 1926-650 SUBPART – P EXCAVATIONS. ANY TRENCH WHERE THE CUT IS DEEPER THAN 10 FEET WILL REQUIRE A DETAILED SHORING PLAN PREPARED BY A REGISTERED PROFESSIONAL ENGINEER TO BE SUBMITTED TO PWD FOR APPROVAL BEFORE WORK CAN BEGIN.
16. PLACE AND COMPACT BACKFILL IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR EXCAVATION, REFILLING, GRADING, LANDSCAPING AND REPAVING, EXCEPT AS HEREIN MODIFIED.



SECTION A-A

WYE Connection Installation Procedure:

1. Contractor is respons ble for controlling the flow during the connection.
2. The Contractor is to obtain information about the flow rate prior to commencing the connection. This may be obtained by opening a manhole and measuring the flow (flow can vary).
3. For high flow rate the contractor shall submit a By-pass method for approval.
4. For low flow rate the contractor may be able to direct the flow through the opened section.
5. The contractor must select the proper size WYE and align the inverts.
6. Excavate safely to expose the existing sewer pipe without damaging it.
7. Excavate a ditch wide enough to accommodate the WYE and the CUT-OFF walls.
8. Contractors should perform the connection in a safe manner and per OSHA regulations.
9. Shoring shall be installed in ditches and trenches as per OSHA regulations or as regulated by PWD. Violation of this provision will result in a Stop Work Order and/or penalties prescribed by law. (Refer to Philadelphia Plumbing Code 2004 Section P- 1503.2 Shoring).
10. For connections to brick sewer, construct a 2-foot wide by 8-inch high, concrete CUT- OFF wall to the spring line, on both sides of the WYE, 12-Inch from the location to cut the sewer pipe.
11. Use a minimum of 3000 psi concrete for the concrete CUT-OFF wall.
12. Allow at least 24 hours for the concrete to harden before cutting the sewer pipe.
13. Cut the sewer pipe so that the WYE section will fit in tightly.
14. Prevent any debris from flowing into the sewer.
15. Clean the bottom of the opened area from loose and soft soil if no cradle, and place stone in the middle leaving 12 inch below the joints for concrete collar.
16. Insert the WYE section in place immediately, seal the joints and construct a 24-inch concrete collar around both joints.
17. Use a minimum of 3000 psi concrete collar, 12 inch deep and extending 24 inch wide around the joint.
18. Allow at least 24 hours for the concrete to harden before backfilling.
19. Any other pipeline exposed and undermined during this operation must be supported immediately and backfilled with Controlled Low Strength Material (CLSM) after the completion of the connection.

CONCRETE CUT-OFF WALLS

A. Before removing the earth fill over the arch of the existing sewer, construct a concrete cut-off wall where called for on the Contract Drawings.
B. The cut-off wall shall be constructed across the entire width of trench down to the spring line of the sewer. After the cut-off wall has been constructed and set, the remaining portion of earth over the sewer shall be removed down to the spring line.

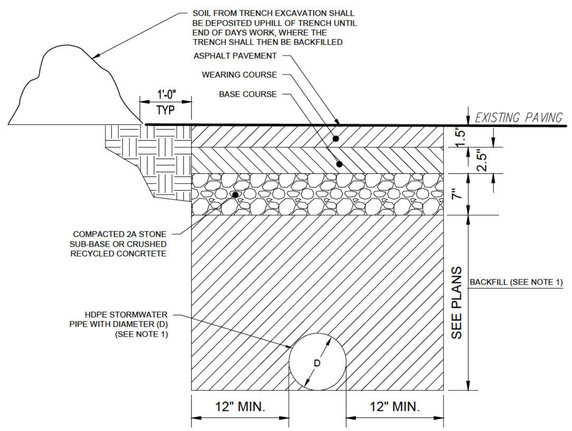
FLUMING

A. Flume the existing sewer flow during construction. Use only such dams as will not restrict full flow during storms. Repair all damage due to restriction of flow.

DIVERSION OF FLOWS

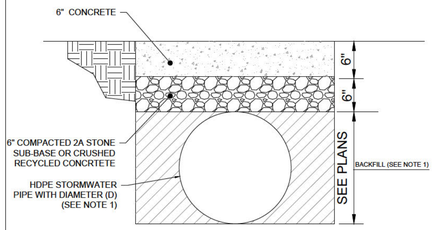
A. The Water Department does not guarantee the ability to dam or divert flows. The Water Department shall approve all damming and diverting of flows prior to installation.
B. One week prior to damming and diverting of any flow the Contractor shall notify both of the following:
   - Sewer Maintenance Superintendent at 215-685-2034.
   - Flow Control Superintendent at 215-685-2004.
C. In addition, both Sewer Maintenance and Interceptor Services shall be notified one week prior to removal of any dam and the resumption of flow. Upon completion of the removal of the dam, the Contractor shall schedule an inspection of the sewer at the location of the dam. Any damage found during this inspection shall be repaired by the Contractor at no additional cost to the City.
D. If for any reason, it becomes necessary to remove the dam prior to completion of the project; the Contractor shall remove the dam, restore flow, and utilize an alternate means of flow control to complete the project, at no additional cost to the City.

WYE CONNECTION DETAIL
NOT TO SCALE



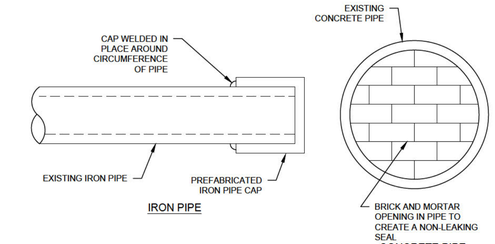
PIPE TRENCH DETAIL
NOT TO SCALE

NOTES
1) ALL CONVEYANCE PIPES SHALL BE LAID DIRECTLY ON SOIL AT THE BOTTOM OF THE TRENCH AND BACKFILLED WITH SOIL ONLY. NO STONE BEDDING OR BACKFILL IS REQUIRED. ENSURE THAT THE TRENCH BOTTOM DOES NOT HAVE ANY LARGE OR ANGULAR ROCK THAT COULD DAMAGE NEW HDPE PIPE.

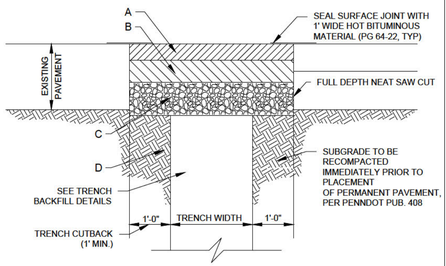


PIPE TRENCH IN CONCRETE DETAIL
NOT TO SCALE

NOTE:
1. ALL CONVEYANCE PIPES SHALL BE LAID DIRECTLY ON SOIL AT THE BOTTOM OF THE TRENCH AND BACKFILLED WITH SOIL ONLY. NO STONE BEDDING OR BACKFILL IS REQUIRED. ENSURE THAT THE TRENCH BOTTOM DOES NOT HAVE ANY LARGE OR ANGULAR ROCK THAT COULD DAMAGE NEW HDPE PIPE.



STORM PIPE CAP DETAILS
NOT TO SCALE



NOTES:

1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS STATED IN PENNDOT PUB. 408, SECT. 401.3(f).
2. TACK COAT MATERIAL SHALL BE APPLIED TO THE ENTIRE SURFACE PRIOR TO APPLICATION OF THE WEARING SURFACE.
3. ALL MATERIAL AND CONSTRUCTION METHODS SHALL COMPLY WITH PENNDOT SPECIFICATIONS, PUBLICATION 408, LATEST REVISION.
4. REFER TO PAVEMENT LEGEND FOR DESCRIPTIONS OF A,B,C AND D.
5. CONTRACTOR MAY UTILIZE EXISTING ASPHALT AND/OR STONE BASE IN LIEU OF PROPOSED STONE SUBBASE. DEPTH OF EXISTING ASPHALT AND/OR STONE BASE TO REMAIN MUST BE EQUAL TO OR GREATER THAN PROPOSED STONE SUBBASE DEPTH.
6. ALL CONSTRUCTION, MATERIALS, METHODS OF CONSTRUCTION AND CONTROL OF WORK TO BE GOVERNED BY THE CURRENT EDITION OF PENNDOT SPECIFICATIONS, PUBLICATION 408.

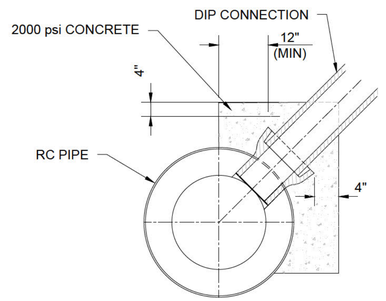
KEYED NOTES:

A. SUPERPAVE ASPHALT MIXTURE DESIGN, HMA WEARING COURSE, PG 64-22, 3.0<10.00 MILLION ESAL'S, 9.5 MM MIXTURE, 1.5" DEPTH OVER TACK COAT OR MATCH EXISTING, WHICHEVER IS GREATER.
B. SUPERPAVE ASPHALT MIXTURE DESIGN, HMA BASE COURSE, PG 64-22, 3.0<10.00 MILLION ESAL'S, 25.00 MM MIXTURE, 2.5" DEPTH OVER PRIME COAT OR MATCH EXISTING, WHICHEVER IS GREATER.
C. 7" COMPACTED 2A STONE SUB-BASE OR MATCH EXISTING, WHICHEVER IS GREATER.
D. WELL-DRAINED SUB-GRADE.

PAVEMENT RESTORATION NOTES:

COMPACTION: ALL BACKFILL MATERIAL IN BASINS AND PIPE TRENCHES SHALL BE INSTALLED IN 8-INCH TO 12-INCH LOOSE LIFTS AND COMPACTED TO 95% OF ITS MAXIMUM DRY DENSITY BY ROLLING EACH LIFT WITH A MINIMUM OF THREE PASSES OF A SHEEPSFOOT VIBRATORY TRENCH ROLLER OR EQUIVALENT.

BITUMINOUS PAVEMENT RESTORATION DETAIL
NOT TO SCALE



SADDLE CONNECTION INSTALLATION PROCEDURE:

1. EXCAVATE SAFELY TO EXPOSE THE EXISTING SEWER PIPE WITHOUT DAMAGING IT.
2. EXCAVATE A DITCH WIDE ENOUGH TO ACCOMMODATE CORING THE EXISTING SEWER PIPE AND CONCRETING THE CONNECTION JOINT TO 1-FOOT PAST THE EDGE OF THE CORED OPENING IN ALL DIRECTIONS.
3. CONTRACTORS SHOULD PERFORM THE CONNECTION IN A SAFE MANNER AND PER OSHA REGULATIONS.
4. SHORING SHALL BE INSTALLED IN DITCHES AND TRENCHES AS PER OSHA REGULATIONS OR AS REGULATED BY PWD. VIOLATION OF THIS PROVISION WILL RESULT IN A STOP WORK ORDER AND/OR PENALTIES PRESCRIBED BY LAW. (REFER TO PHILADELPHIA PLUMBING CODE 2004 SECTION P-1503.2 SHORING).
5. CORE DRILL A HOLE NOT MORE THAN 1-INCH LARGER THAN THE OD OF THE CONNECTING PIPE OR SADDLE.
6. PREVENT ANY PIECES OF CORED SECTION OR DEBRIS TO FALL INTO THE SEWER.
7. REMOVE ALL THE BROKEN PIECES OR DEBRIS THAT FALL INTO THE SEWER.
8. CAULK THE INTERIOR SURFACE OF THE CORED AREA WITH NON-SHRINK OR EPOXY MORTAR.
9. CUT A SADDLE LONG ENOUGH ON THE BELL-END SIDE SO THAT WHEN INSERTED INTO THE CORED HOLE, IT WILL BE FLUSH WITH THE INSIDE FACE OF THE SEWER WALL OR WITH NOT MORE THAN 1-INCH PROTRUSION INTO THE SEWER PIPE AND ALSO THE BELL END WILL REST ON THE SEWER PIPE.
10. FILL THE ANNULAR SPACE BETWEEN THE SADDLE AND THE SEWER PIPE WITH APPROVED CAULK OR NON-SHRINK MORTAR.
11. SECURE THE SADDLE.
12. CONNECT THE FIRST PIECE OF THE LATERAL PIPE TO THE SADDLE.
13. FORM THE OUTSIDE OF THE CONNECTION JOINT SO THAT A 12-INCH THICK CONCRETE COLLAR COULD BE PLACED AROUND THE CONNECTION JOINT.
14. PLACE A MINIMUM OF 3000 PSI CONCRETE COLLAR EXTENDING 12 INCH AROUND THE JOINT.
15. ALLOW AT LEAST 24 HOURS FOR THE CONCRETE TO HARDEN BEFORE BACKFILLING.
16. ANY OTHER PIPELINE EXPOSED AND UNDERMINED DURING THIS OPERATION MUST BE SUPPORTED IMMEDIATELY AND BACKFILLED WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM) AFTER THE COMPLETION OF THE CONNECTION.

RESILENT SADDLE CONNECTION DETAIL
NOT TO SCALE

FOR CONSTRUCTION

SITE 13-3 - ISSUED FOR

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A Design/Build Company
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BLUE BELL, PA 19422
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2	TECHNICAL PLAN REVIEW	1/27/2017
1	TECHNICAL PLAN REVIEW	12/5/2016
0	TECHNICAL PLAN REVIEW	11/10/2016

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PA. ONE CALL

PWD TRACKING NUMBER: FY17-STHS-4442-01
DRAWN By : D.H.T.
DESIGNED BY : M.W.M.
CHECKED BY : M.J.C.
DATE : 10-24-2016
SCALE : AS NOTED
CAD FILENAME: C-803.dwg

PROJECT:
PWD STORMWATER CREDIT RETROFIT DESIGN
SITE 13 - PHASE 3
FOR
SKY MANAGEMENT
2810 S. 20TH STREET
PHILADELPHIA, PA

SEAL:
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL JOSEPH COYLE ENGINEER NO. 061136

MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

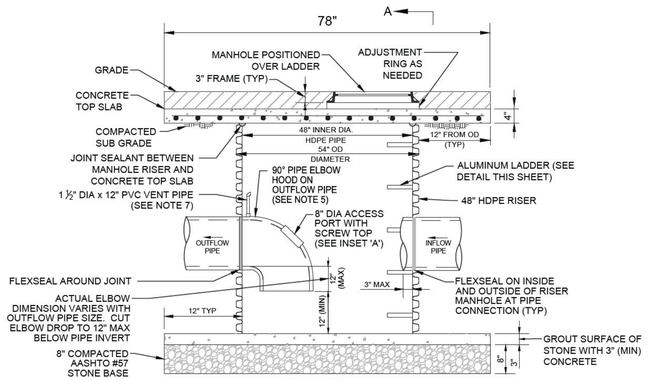
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SHEET TITLE:
SITE AND STORMWATER DETAILS -3

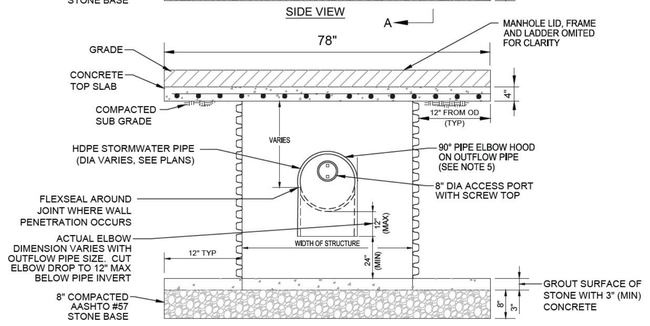
SHEET NUMBER:
C-803

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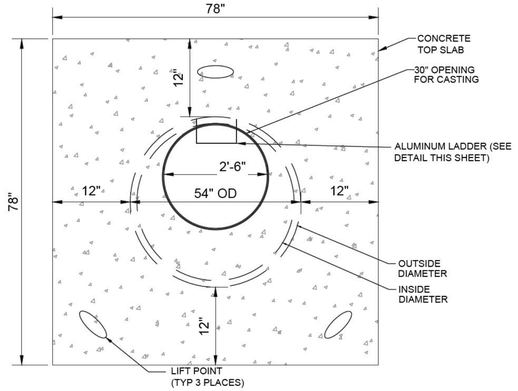
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SIDE VIEW



SECTION 'A-A'

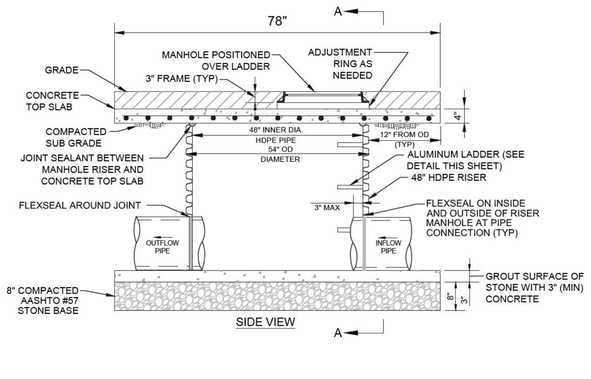


TOP SLAB

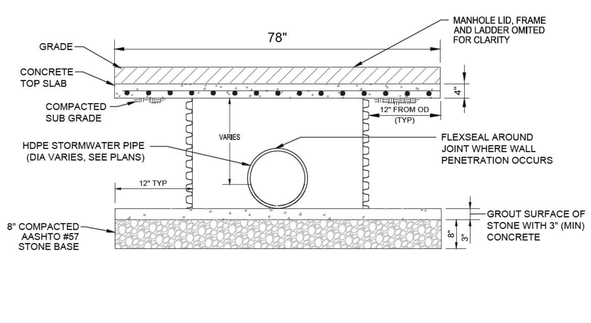
STORM RISER MANHOLE ACCESS AND TOP SLAB

NOT TO SCALE

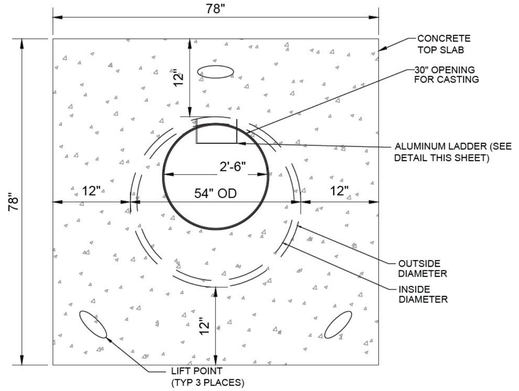
NOTES:
1. CONCRETE - 4000 PSI, AIR ENTRAINED.
2. REINFORCED STEEL-GRADE 60, ASTM A-615.
3. WELDED WIRE FABRIC-ASTM A-185.
4. LADDER RUNGS - COPOLYMER POLYPROPYLENE PLASTIC w/1/2" REBAR, GRADE 60.
5. OUTLET PIPE TO PROTRUDE INTO STRUCTURE ENOUGH TO ATTACH BELL OF ELBOW.
6. SEAL PIPE PROTRUSIONS TO HDPE RISER USING FLEX SEAL.
7. DO NOT INSTALL VENT PIPE WHEN CONNECTING TO COMBINED SEWER LINE.
8. THE PROPOSED MANHOLE RIM ELEVATIONS ON THE PLANS SHALL BE VERIFIED WITH ACTUAL ELEVATION IN THE FIELD. ENSURE THAT THE INSTALLED MANHOLE RIM ELEVATION MATCHES THE ADJACENT EXISTING GRADE



SIDE VIEW



SECTION 'A-A'

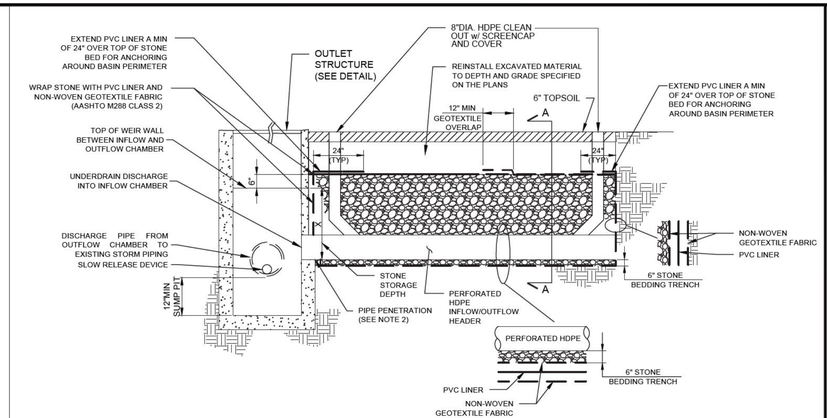


TOP SLAB

STORM JUNCTION MANHOLE ACCESS AND TOP SLAB

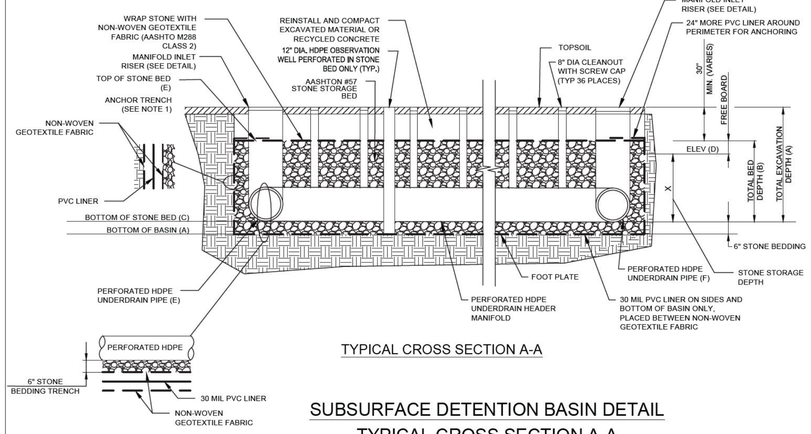
NOT TO SCALE

NOTES:
1. CONCRETE - 4000 PSI, AIR ENTRAINED.
2. REINFORCED STEEL-GRADE 60, ASTM A-615.
3. WELDED WIRE FABRIC-ASTM A-185.
4. LADDER RUNGS - COPOLYMER POLYPROPYLENE PLASTIC w/1/2" REBAR, GRADE 60.
5. OUTLET PIPE TO PROTRUDE INTO STRUCTURE ENOUGH TO ATTACH BELL OF ELBOW.
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SUBSURFACE DETENTION BASIN DETAIL

NOT TO SCALE



TYPICAL CROSS SECTION A-A

SUBSURFACE DETENTION BASIN DETAIL

TYPICAL CROSS SECTION A-A

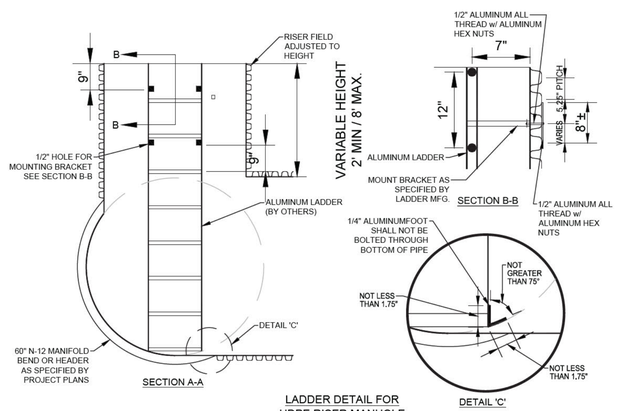
NOT TO SCALE

NOTES:
1) THE BASIN STONE STORAGE LAYER SHALL BE UNIFORMLY-GRADED, CLEAN WASHED STRONE WITH LESS THAN 0.5% WASH LOSS, BY MASS, WHEN TESTED PER THE AASHTO T-11 WASH LOSS TEST.

2) GEOTEXTILE SHALL CONSIST OF NEEDLED NON-WOVEN POLYPROPYLENE FIBERS AND MEET THE FOLLOWING PROPERTIES:
   A) GRAB TENSILE STRENGTH (ASTM-D4632) GREATER THAN OR EQUAL TO 120 LBS
   B) MULLEN BURST STRENGTH (ASTM-D3786) GREATER THAN OR EQUAL TO 225 PSI
   C) FLOW RATE (ASTM-D4491) GREATER THAN OR EQUAL TO 95 GAL/MIN/SQ.FT
   D) UV RESISTENCE AFTER 500 HRS (ASTM-D4355) GREATER THAN OR EQUAL TO 70%
   E) HEAT-SET OR HEAT CALENDARED FABRICS ARE NOT PERMITTED

3) SEE ANCHOR TRENCH DETAIL ON C-805

4) SEE GEOMEMBRANE LINER PIPE PENETRATION AND PENETRATION SEAL DETAILS ON C-805



LADDER DETAIL FOR HDPE RISER MANHOLE

NOT TO SCALE

FOR CONSTRUCTION - ISSUED FOR SITE 13-3

No.	Revision/Issue	Date
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1	TECHNICAL PLAN REVIEW	12/5/2016
0	TECHNICAL PLAN REVIEW	11/10/2016

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F: (267) 200-0414

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PWD TRACKING NUMBER: FY17-STHS-4442-01
DRAWN By : D.H.T.
DESIGNED BY : M.W.M.
CHECKED BY : M.J.C.
DATE : 10-24-2016
SCALE : AS NOTED
CAD FILENAME: C-804.dwg

PROJECT:
PWD STORMWATER CREDIT RETROFIT DESIGN
SITE 13 - PHASE 3
FOR
SKY MANAGEMENT
2810 S. 20TH STREET
PHILADELPHIA, PA

SEAL:
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL JOSEPH COYLE ENGINEER NO. 061136

MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

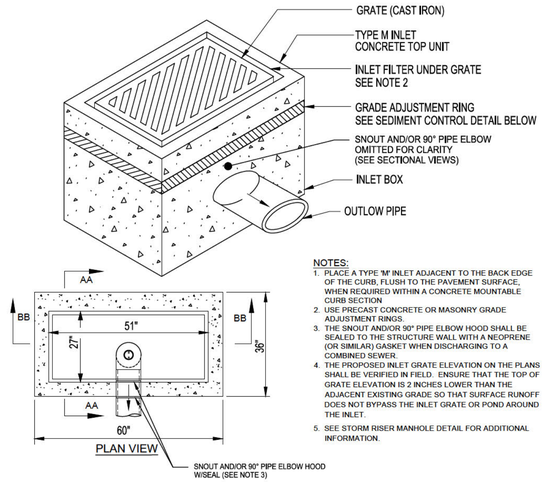
H2O Infrastructure, LLC
1533 SKIPPACK PIKE, SUITE 1
BLUE BELL, PA 19422
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FAX: (267) 200-0414

SHEET TITLE:
SITE AND STORMWATER DETAILS - 4

SHEET NUMBER:
C-804

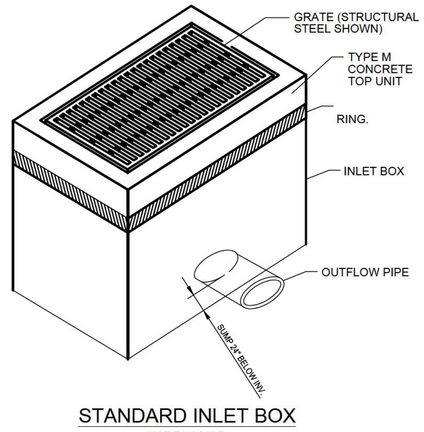
3/15/2017 11:59 AM

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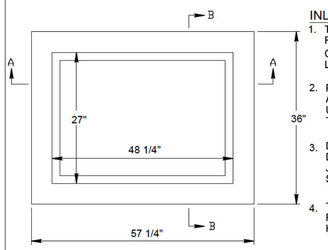


NOTES:
1. PLACE A TYPE "M" INLET ADJACENT TO THE BACK EDGE OF THE CURB, FLUSH TO THE PAVEMENT SURFACE, WHEN REQUIRED WITHIN A CONCRETE MOUNTABLE CURB SECTION.
2. USE PRECAST CONCRETE OR MASONRY GRADE ADJUSTMENT RINGS.
3. THE SNOUT AND/OR 90° PIPE ELBOW HOOD SHALL BE SEALED TO THE STRUCTURE WALL WITH A NEOPRENE (OR SIMILAR) GASKET WHEN DISCHARGING TO A COMBINED SEWER.
4. THE PROPOSED INLET GRATE ELEVATION ON THE PLANS SHALL BE VERIFIED IN FIELD. ENSURE THAT THE TOP OF GRATE ELEVATION IS 2 INCHES LOWER THAN THE ADJACENT EXISTING GRADE SO THAT SURFACE RUNOFF DOES NOT BYPASS THE INLET GRATE OR POND AROUND THE INLET.
5. SEE STORM RISER MANHOLE DETAIL FOR ADDITIONAL INFORMATION.

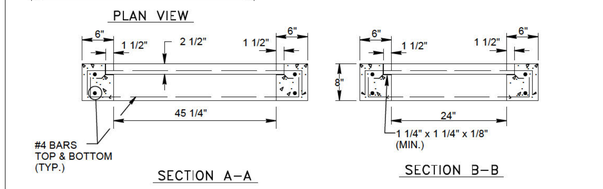
CATCH BASIN DETAIL
NOT TO SCALE



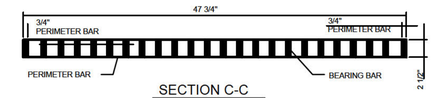
STANDARD INLET BOX
NOT TO SCALE



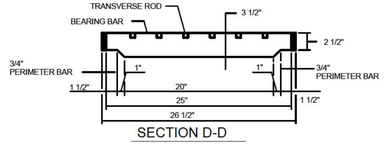
INLET TOP NOTES
1. THESE DETAILS DEPICT THE SHAPE AND DIMENSIONS REQUIRED FOR UNIFORMITY AND COMPATIBILITY. ONLY TOP UNITS SUPPLIED BY A MANUFACTURER LISTED IN BULLETIN 15 SHALL BE PERMITTED.
2. PROVIDE ANGLES EMBEDDED IN THE CONCRETE AS A BEARING AREA FOR THE GRATE FOR ALL TOP UNITS WHICH SEAT THE GRATE DIRECTLY WITHIN THE UNIT.
3. DOWEL TYPE C INLET TOP UNITS WITH 2-#8 x 1'-0" DOWEL BARS AND PLACE 1/4" PREMOLDED EXPANSION JOINT FILLER WHEN CONNECTING TO ADJACENT CURB SECTIONS.
4. TAPERS MAY BE PROVIDED ON INSIDE VERTICAL FACES OF PRECAST INLET TOPS TO FACILITATE FORM STRIPPING. HOWEVER, BOTTOM DIMENSIONS MUST NOT BE REDUCED.



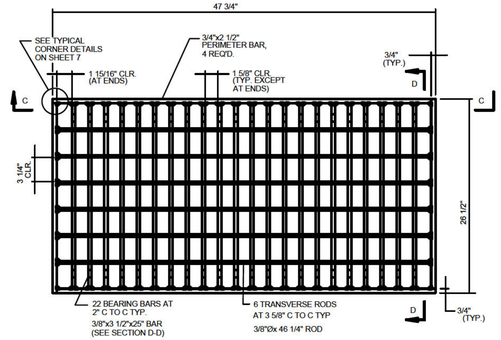
TYPE M INLET TOP
NOT TO SCALE



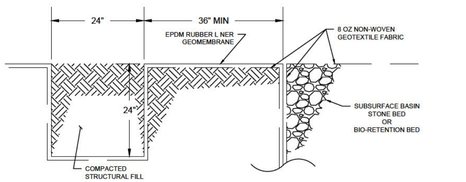
SECTION C-C



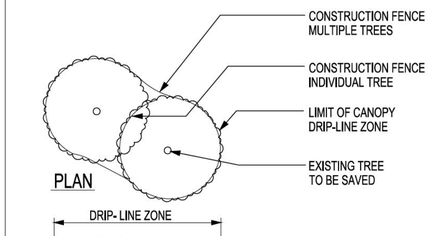
SECTION D-D



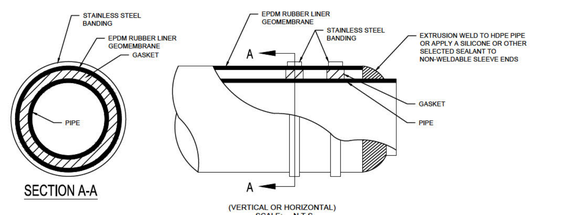
STRUCTURAL STEEL GRATE BICYCLE SAFE
NOT TO SCALE

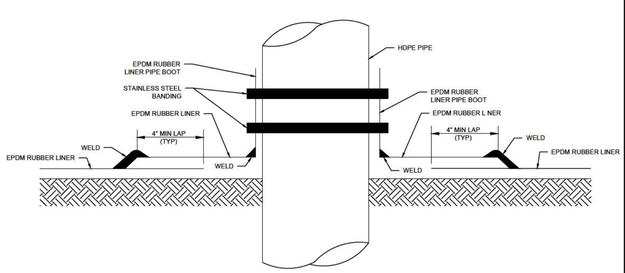


TYPICAL LINER ANCHOR TRENCH
N.T.S.



TREE PROTECTION FENCE
NOT TO SCALE





TYPICAL LINER PIPE PENETRATION
SCALE: N.T.S.

SITE 13-3 - ISSUED FOR CONSTRUCTION

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PWD TRACKING NUMBER: FY17-STHS-4442-01
DRAWN By : D.H.T.
DESIGNED BY : M.W.M.
CHECKED BY : M.J.C.
DATE : 10-24-2016
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CAD FILENAME: C-805.dwg

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PHILADELPHIA, PA

SEAL:
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL JOSEPH COYLE ENGINEER NO. 061136

MICHAEL J. COYLE
PROFESSIONAL ENGINEER
NO. 061136
COMMONWEALTH OF PENNSYLVANIA

H2O Infrastructure, LLC
1533 SKIPPACK PIKE, SUITE 1
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PHONE: (484) 704-7417
FAX: (267) 200-0414

SHEET TITLE:
SITE AND STORMWATER DETAILS - 5

SHEET NUMBER:
C-805

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Water Logs, LLC

Exhibit A
Maintenance Guidelines

The following is a description of the ongoing/as-needed maintenance required for the stormwater maintenance practices (SMPs) on your property, although not all of the maintenance items may apply to your specific SMP. For the first three (3) months after construction, Water Logs, LLC may inspect the SMP several times to ensure it is operating as designed. After the firsts three (3) months, inspections shall be conducted quarterly for the duration of the service contract period. Frequency and scope of maintenance is subject to change as necessary to maintain performance as designed and approved by the Philadelphia Water Department (PWD). All records will be in the custodial care of Water Logs and a copy will be provided to PWD and the owner. Once a year, a site visit shall be certified by a Water Logs professional engineer. Property owner/tenant shall be responsible for all corrective engineering and construction work which is not indicated in the Maintenance Guidelines.

Subsurface Basin Maintenance Guidelines

Owner Responsibilities:

- Regularly clean out gutters and trench drains to reduce sediment load to detention system. (ongoing)

Water Logs Responsibilities:

- Clean out as needed all components of and connections to subsurface detention systems. This includes flushing the underdrains and conveyance pipes. (ongoing)
- Flush underdrains and remove debris/sediment if more than two inches of sediment is present. (ongoing)
- Utilize confined space equipment to access and clean any elements of the basin not accessible otherwise.
- Assess indicators that inlet components may not be operating as designed, such as sinking and settling on the surface.
- Conduct and report quarterly inspections.
- Conduct and report certified annual inspections.
- Evaluate drain down time and make sure it is less than 72 hours.

Inlet/Outlet Maintenance Guidelines

Owner Responsibilities:

- Remove trash and debris near inlets/outlets.
- Inspect inlet/outlet structures after several storms to ensure they are functioning properly and there are no erosion problems developing. (after 3-month post-construction period)
- Identify and control source of sediment contamination when native soil is exposed or erosion channels are present.

Water Logs Responsibilities:

- Inspect inlet/outlet structures after several storms to ensure they are functioning properly and there are no erosion problems developing. (during 3-month post-construction period)
- Remove trash and debris near inlets/outlets. (ongoing)
- Clean or replace inlet/outlet pre-treatment filters when sediment and debris buildup prevents proper functioning. (ongoing)
- Conduct and report quarterly inspections.
- Conduct and report certified annual inspections.

General Owner/Tenant Property Maintenance Guidelines

Owner Responsibilities:

- Maintain site cleanliness (e.g. leaf removal during fall cleanup).
- Keep roof drains, storage areas, and inflow, outflow, and surface systems clear of trash, sediment, and plant material (e.g. pick up all grass clippings near SMP during mowing).
- Ensure vegetation is healthy, with no major areas of bare soil or large depressions.
- Water plants and grasses during first 2-3 years of SMP installation as needed.
- Do not allow ruts, gullies, or soil voids to develop.
- Keep all structures accessible and in good condition.
- Maintain impervious areas to avoid degradation leading to debris entering stormwater inlets. (e.g. repair parking lots and other paved areas if they are cracked or crumbling, especially after heavy salt use for snow/ice management)
- Avoid damage from snow plowing practices.

WL-F-003 Maintenance Guidelines (Property Owned)REV05.pdf (revision date 07/23/2015)

FOR CONSTRUCTION - ISSUED FOR SITE 13-3

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A Design/Build Company
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SHEET TITLE:
MAINTENANCE SCHEDULE

SHEET NUMBER:
C-806

3/15/2017 12:01 PM

Appendix F

PAGWIS Tabulation

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
618282		US NAVY	PHILADELPHIA NAVAL BASE	6/25/2008	39.89972	-75.20307	PHILADELPHIA	Commercial Street Atlas	19145	WELL	UNUSED	ABANDONED	1	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 120 LBS CEMENT, 20 LBS BENTONITE, 25 LBS HOLEPLUG, 7 GAL WATER.
618284		US NAVY	PHILADELPHIA NAVAL BASE	6/25/2008	39.89972	-75.20305	PHILADELPHIA	Commercial Street Atlas	19145	WELL	UNUSED	ABANDONED	2	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 140 LBS CEMENT, 15 LBS BENTONITE, 25 LBS HOLEPLUG, 9 GAL WATER.
618285		US NAVY	PHILADELPHIA NAVAL BASE	6/25/2008	39.89972	-75.20306	PHILADELPHIA	Commercial Street Atlas	19145	WELL	UNUSED	ABANDONED	3	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 140 LBS CEMENT, 15 LBS BENTONITE, 25 LBS HOLEPLUG, 9 GAL WATER.
616998		US NAVY	PHILADELPHIA NAVAL BASE	6/25/2008	39.89972	-75.20306	PHILADELPHIA	Commercial Street Atlas	19145	WELL	UNUSED	ABANDONED	4	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 94 LBS CEMENT, 20 LBS BENTONITE, 25 LBS HOLEPLUG, 6 GAL WATER.
641547		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90024	-75.20027	PHILADELPHIA	GPS - Global Positioning	19153	WELL	OTHER	ABANDONED	5	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which
641549		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90024	-75.20025	PHILADELPHIA	GPS - Global Positioning	19153	WELL	OTHER	ABANDONED	6	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which
629658		WALT WHITMAN TRUCK STOP	3450 S. LAWRENCE ST.	6/28/2006	39.90833	-75.16361	PHILADELPHIA	Commercial Street Atlas	19148	WELL	UNUSED	ABANDONED	7	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 94 LBS CEMENT, 75 LBS HOLEPLUG. METHOD OF ABANDONMENT: PUMP
641622		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90231	-75.20244	PHILADELPHIA	GPS - Global Positioning	19153	WELL	OTHER	ABANDONED	8	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which
618280		US NAVY	PHILADELPHIA NAVAL BASE	6/25/2008	39.89973	-75.20307	PHILADELPHIA	Commercial Street Atlas	19145	WELL	UNUSED	ABANDONED	9	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 2" WELL: 47 LBS CEMENT, 10 LBS BENTONITE, 25 LBS HOLEPLUG, 3 GAL WATER.
617003		US NAVY	PHILADELPHIA NAVAL BASE	6/25/2008	39.89972	-75.20306	PHILADELPHIA	Commercial Street Atlas	19145	WELL	UNUSED	ABANDONED	10	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 94 LBS CEMENT, 8 LBS BENTONITE, 25 LBS HOLEPLUG, 6 GAL WATER. METHOD
617000		US NAVY	PHILADELPHIA NAVAL BASE	6/25/2008	39.89972	-75.20307	PHILADELPHIA	Commercial Street Atlas	19145	WELL	UNUSED	ABANDONED	11	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 120 LBS CEMENT, 20 LBS BENTONITE, 25 LBS HOLEPLUG, 7 GAL WATER.
616914		US NAVY	PHILADELPHIA NAVAL BASE	6/25/2008	39.89971	-75.20306	PHILADELPHIA	Commercial Street Atlas	19145	WELL	UNUSED	ABANDONED	12	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 94 LBS CEMENT, 20 LBS BENTONITE, 25 LBS HOLEPLUG, 6 GAL WATER.
616999		US NAVY	PHILADELPHIA NAVAL BASE	6/25/2008	39.89972	-75.20306	PHILADELPHIA	Commercial Street Atlas	19145	WELL	UNUSED	ABANDONED	13	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 120 LBS CEMENT, 20 LBS BENTONITE, 25 LBS HOLEPLUG, 7 GAL WATER.
641616		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.9022	-75.20266	PHILADELPHIA	GPS - Global Positioning	19153	WELL	OTHER	ABANDONED	14	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which
641546		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90024	-75.20027	PHILADELPHIA	GPS - Global Positioning	19153	WELL	OTHER	ABANDONED	15	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which
618283		US NAVY	PHILADELPHIA NAVAL BASE	6/25/2008	39.89973	-75.20305	PHILADELPHIA	Commercial Street Atlas	19145	WELL	UNUSED	ABANDONED	16	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 75 LBS CEMENT, 8 LBS BENTONITE, 25 LBS HOLEPLUG, 5 GAL WATER. METHOD
641552		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90267	-75.2026	PHILADELPHIA	GPS - Global Positioning	19153	WELL	OTHER	ABANDONED	17	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns
629660		WALT WHITMAN TRUCK STOP	3450 S. LAWRENCE ST.	6/28/2006	39.90833	-75.16361	PHILADELPHIA	Commercial Street Atlas	19148	WELL	UNUSED	ABANDONED	18	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 94 LBS CEMENT, 75 LBS HOLEPLUG. METHOD OF ABANDONMENT: PUMP
641553		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90239	-75.20001	PHILADELPHIA	GPS - Global Positioning	19153	WELL	OTHER	ABANDONED	19	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns
641701		City of Philadelphia	W SHUNK ST	6/30/2016	39.91783	-75.16927	PHILADELPHIA	Commercial Street Atlas		WELL		ABANDONED	20	PAGS WWI ELECTRONIC	UNKNOWN		MW2ABAN	
648421		Lukoil	2101 S 11th St	1/20/2017	39.92338	-75.16436	PHILADELPHIA	Commercial Street Atlas Program	19148	WELL		ABANDONED	21	PAGS WWI ELECTRONIC				
617002		US NAVY	PHILADELPHIA NAVAL BASE	6/25/2008	39.89972	-75.20307	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	ABANDONED	22	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 75 LBS CEMENT, 8 LBS BENTONITE, 25 LBS HOLEPLUG, 4 GAL WATER. METHOD OF ABANDONMENT: PUMP THROUGH TREMIE PIPE AT WELL BOTTOM.
629659		WALT WHITMAN TRUCK STOP	3450 S. LAWRENCE ST.	6/28/2006	39.90833	-75.16361	PHILADELPHIA	Commercial Street Atlas Program	19148	WELL	UNUSED	ABANDONED	23	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 94 LBS CEMENT, 75 LBS HOLEPLUG. METHOD OF ABANDONMENT: PUMP THROUGH TREMIE PIPE AT WELL BOTTOM.
641615		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90024	-75.20027	PHILADELPHIA	GPS - Global Positioning System	19153	WELL	OTHER	ABANDONED	24	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns into Passyunk Ave to 6301.
641617		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90256	-75.20252	PHILADELPHIA	GPS - Global Positioning System	19153	WELL	OTHER	ABANDONED	25	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns into Passyunk Ave to 6301.
641551		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90267	-75.20259	PHILADELPHIA	GPS - Global Positioning System	19153	WELL	OTHER	ABANDONED	26	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns into Passyunk Ave to 6301.
641619		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90257	-75.20232	PHILADELPHIA	GPS - Global Positioning System	19153	WELL	OTHER	ABANDONED	27	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns into Passyunk Ave to 6301.
641700		City of Philadelphia	2600 S. 13th Street	6/30/2016	39.91783	-75.1692	PHILADELPHIA	Commercial Street Atlas Program	19148	WELL		ABANDONED	28	PAGS WWI ELECTRONIC				
685851		Cedar Realty Trust, Inc.	2301 W. Oregon Ave.	3/17/2020	39.92017	-75.18555	PHILADELPHIA	Commercial Street Atlas Program		WELL		ABANDONED	29	PAGS WWI ELECTRONIC				
685852		Cedar Realty Trust, Inc.	2301 W. Oregon Ave.	3/17/2020	39.92058	-75.18601	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		ABANDONED	30	PAGS WWI ELECTRONIC				
685873		Cedar Realty Trust, Inc.	2261 W Shunk St	3/17/2020	39.92013	-75.18603	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		ABANDONED	31	PAGS WWI ELECTRONIC				
709730		Wheeler Real Estate Investment Trust	2119 W Oregon Ave	12/5/2022	39.91861	-75.18365	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	ABANDONED	32	PAGS WWI ELECTRONIC				
709732		Wheeler Real Estate Investment Trust	2121 W Oregon Ave	12/5/2022	39.9191	-75.18357	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	ABANDONED	33	PAGS WWI ELECTRONIC				
640467		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90262	-75.20273	PHILADELPHIA	GPS - Global Positioning System	19153	WELL	OTHER	ABANDONED	34	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns into Passyunk Ave to 6301.
641744		City of Philadelphia	2600 S 13th St	6/30/2016	39.91786	-75.16928	PHILADELPHIA	Commercial Street Atlas Program	19148	WELL		ABANDONED	35	PAGS WWI ELECTRONIC				
685872		Cedar Realty Trust, Inc.	2301 W. Oregon Ave.	3/17/2020	39.92051	-75.18594	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		ABANDONED	36	PAGS WWI ELECTRONIC				
709731		Wheeler Real Estate Investment Trust	2129 W Oregon Ave	12/5/2022	39.91877	-75.184	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	ABANDONED	37	PAGS WWI ELECTRONIC				
618281		US NAVY	PHILADELPHIA NAVAL BASE	6/25/2008	39.89972	-75.20306	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	ABANDONED	38	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 2" WELL: 47 LBS CEMENT, 10 LBS BENTONITE, 25 LBS HOLEPLUG, 3 GAL WATER. METHOD OF ABANDONMENT: PUMP THROUGH TREMIE PIPE AT WELL BOTTOM.
641620		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90267	-75.20254	PHILADELPHIA	GPS - Global Positioning System	19153	WELL	OTHER	ABANDONED	39	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns into Passyunk Ave to 6301.
641618		121 Point Breeze Terminal	6301 Pssyunk Ave	12/18/2014	39.90257	-75.20232	PHILADELPHIA	GPS - Global Positioning System	19153	WELL	OTHER	ABANDONED	40	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns into Passyunk Ave to 6301.
648422		Lukoil	2101 S 11th St	1/20/2017	39.92342	-75.16423	PHILADELPHIA	Commercial Street Atlas Program	19148	WELL		ABANDONED	41	PAGS WWI ELECTRONIC				
641545		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90024	-75.20028	PHILADELPHIA	GPS - Global Positioning System	19153	WELL	OTHER	ABANDONED	42	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns into Passyunk Ave to 6301.
641550		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90227	-75.20244	PHILADELPHIA	GPS - Global Positioning System	19153	WELL	OTHER	ABANDONED	43	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns into Passyunk Ave to 6301.

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
629490		WALT WHITMAN TRUCK STOP	3450 S. LAWRENCE ST.	6/28/2006	39.90833	-75.16361	PHILADELPHIA	Commercial Street Atlas Program	19148	WELL	UNUSED	ABANDONED	44	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 94 LBS CEMENT, 75 LBS HOLEPLUG. METHOD OF ABANDONMENT: PUMP THROUGH TREMIE PIPE AT WELL BOTTOM.
641555		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90244	-75.2024	PHILADELPHIA	GPS - Global Positioning System	19153	WELL	OTHER	ABANDONED	45	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns into Passyunk Ave to 6301.
641609		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.9002	-75.20027	PHILADELPHIA	GPS - Global Positioning System	19153	WELL	OTHER	ABANDONED	46	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns into Passyunk Ave to 6301.
641608		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90021	-75.20027	PHILADELPHIA	GPS - Global Positioning System	19153	WELL	OTHER	ABANDONED	47	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns into Passyunk Ave to 6301.
617001		US NAVY	PHILADELPHIA NAVAL BASE	6/25/2008	39.89971	-75.20306	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	ABANDONED	48	PAGS WWI ELECTRONIC				MATERIALS USED TO ABANDON 4" WELL: 75 LBS CEMENT, 8 LBS BENTONITE, 25 LBS HOLEPLUG, 4 GAL WATER. METHOD OF ABANDONMENT: PUMP THROUGH TREMIE PIPE AT WELL BOTTOM.
685816		Cedar Realty Trust, Inc.	2301 W. Oregon Ave.	3/17/2020	39.92069	-75.18654	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		ABANDONED	49	PAGS WWI ELECTRONIC				
641548		121 Point Breeze Terminal	6301 Passyunk Ave	12/18/2014	39.90024	-75.20026	PHILADELPHIA	GPS - Global Positioning System	19153	WELL	OTHER	ABANDONED	50	PAGS WWI ELECTRONIC				Rt 202 and Rt 1, take Rt. 1 east, right onto Rt. 322 to RT 95N, get off Island Ave onto Bartram Ave to Essington Ave which turns into Passyunk Ave to 6301.
685817		Cedar Realty Trust, Inc.	2301 W. Oregon Ave.	3/17/2020	39.92066	-75.18582	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		ABANDONED	51	PAGS WWI ELECTRONIC				
29831		ATLANTIC REFINING CO			39.92028	-75.19417	PHILADELPHIA			WELL	UNUSED	DESTROYED	1	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 70	
29881		BREEZE THEATER			39.92944	-75.18528	PHILADELPHIA			WELL	UNUSED	DESTROYED	2	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 107	
30430		MIRTO CULLET SUPPLY		1/1/1933	39.92222	-75.19722	PHILADELPHIA			WELL	UNUSED	DESTROYED	3	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 88	
29766		CONRAIL		1/1/1906	39.89694	-75.19833	PHILADELPHIA			WELL	UNUSED	DESTROYED	4	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 34	
29777		GULF OIL CORP		9/1/1936	39.90417	-75.20944	PHILADELPHIA			WELL	UNUSED	DESTROYED	5	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 36	
29824		ATLANTIC REFINING CO		1/1/1937	39.91944	-75.19583	PHILADELPHIA			WELL	UNUSED	DESTROYED	6	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 69	
29849		JARDIN BRICK CO		1/1/1906	39.92167	-75.18889	PHILADELPHIA			WELL	UNUSED	DESTROYED	7	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 51	
29860		ATLANTIC REFINING CO		1/1/1933	39.92444	-75.20583	PHILADELPHIA			WELL	UNUSED	DESTROYED	8	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 82	
29772		CONRAIL		12/26/1940	39.9025	-75.20056	PHILADELPHIA			WELL	UNUSED	DESTROYED	9	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 33	
29788		ATLANTIC REFINING CO		1/1/1915	39.90806	-75.19667	PHILADELPHIA			WELL	UNUSED	DESTROYED	10	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 67	
29805		BROOKE H		1/1/1914	39.90972	-75.19111	PHILADELPHIA			WELL	UNUSED	DESTROYED	11	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 46	
30390		U S NAVY		9/5/1952	39.89611	-75.17444	PHILADELPHIA			WELL	UNUSED	DESTROYED	12	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 26	
29762		U S NAVY		9/1/1944	39.89583	-75.17472	PHILADELPHIA			WELL	UNUSED	DESTROYED	13	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 11	
29781		GULF OIL CORP		9/1/1936	39.90667	-75.21222	PHILADELPHIA			WELL	UNUSED	DESTROYED	14	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 38	
29815		ATLANTIC REFINING CO			39.915	-75.20306	PHILADELPHIA			WELL	UNUSED	DESTROYED	15	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 72	
29845		JARDIN BRICK CO		1/1/1923	39.92139	-75.18889	PHILADELPHIA			WELL	UNUSED	DESTROYED	16	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 53	
29863		ATLANTIC REFINING CO			39.92472	-75.20639	PHILADELPHIA			WELL	UNUSED	DESTROYED	17	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 77	
29865		ATLANTIC REFINING CO		1/1/1921	39.925	-75.20667	PHILADELPHIA			WELL	UNUSED	DESTROYED	18	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 74	
30414		PRINTZ DEGREASING CO		1/1/1903	39.91222	-75.19972	PHILADELPHIA			WELL	UNUSED	DESTROYED	19	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 66	
29768		ROOSEVELT PARK		1/1/1952	39.90056	-75.17833	PHILADELPHIA			WELL	UNUSED	DESTROYED	20	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 65	
29827		ATLANTIC REFINING CO			39.92	-75.19333	PHILADELPHIA			WELL	UNUSED	DESTROYED	21	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 68	
29857		ATLANTIC REFINING CO			39.92389	-75.20278	PHILADELPHIA			WELL	UNUSED	DESTROYED	22	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 78	
29886		AMERICAN ICE CO		1/1/1916	39.93194	-75.18639	PHILADELPHIA			WELL	UNUSED	DESTROYED	23	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 54	
30400		U S NAVAL HOSPITAL		8/7/1942	39.90722	-75.17722	PHILADELPHIA			WELL	UNUSED	DESTROYED	24	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 85	
30443		ATLANTIC REFINING CO		1/1/1904	39.92639	-75.20389	PHILADELPHIA			WELL	UNUSED	DESTROYED	25	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 76	
30452		ABBOTTS DAIRIES		1/1/1925	39.93139	-75.1725	PHILADELPHIA			WELL	UNUSED	DESTROYED	26	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 48	
29758		U S NAVY		5/1/1942	39.89528	-75.19167	PHILADELPHIA			WELL	UNUSED	DESTROYED	27	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 9	
29894		FLEISHER IND CENTER		1/1/1919	39.935	-75.18722	PHILADELPHIA			WELL	UNUSED	DESTROYED	28	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 56	
29840		ATLANTIC REFINING CO		1/1/1930	39.92083	-75.19278	PHILADELPHIA			WELL	UNUSED	DESTROYED	29	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 80	
30407		COX S		1/1/1935	39.90889	-75.16833	PHILADELPHIA			WELL	UNUSED	DESTROYED	30	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 45	

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
29773		GULF OIL CORP		9/1/1936	39.9025	-75.20889	PHILADELPHIA			WELL	UNUSED	DESTROYED	31	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 37	
29789		GULF OIL CORP		10/1/1936	39.90806	-75.20917	PHILADELPHIA			WELL	UNUSED	DESTROYED	32	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 40	
29775		GULF OIL CORP		8/1/1936	39.90278	-75.20194	PHILADELPHIA			WELL	UNUSED	DESTROYED	33	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 42	
29791		GULF OIL CORP		9/1/1936	39.90861	-75.2125	PHILADELPHIA			WELL	UNUSED	DESTROYED	34	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 35	
29893		FLEISHER IND CENTER		1/1/1920	39.93472	-75.18667	PHILADELPHIA			WELL	UNUSED	DESTROYED	35	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 58	
30436		BROADWAY THEATER		7/1/1937	39.92472	-75.17056	PHILADELPHIA			WELL	UNUSED	DESTROYED	36	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 108	
29769		ROOSEVELT PARK		1/1/1919	39.90111	-75.17806	PHILADELPHIA			WELL	UNUSED	DESTROYED	37	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 61	
29892		FLEISHER IND CENTER		1/1/1919	39.93444	-75.18694	PHILADELPHIA			WELL	UNUSED	DESTROYED	38	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 57	
29876		ATLANTIC REFINING CO			39.92722	-75.20306	PHILADELPHIA			WELL	UNUSED	DESTROYED	39	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 75	
29885		ABBOTTS DAIRIES		1/1/1906	39.93139	-75.1725	PHILADELPHIA			WELL	UNUSED	DESTROYED	40	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 47	
30444		ATLANTIC REFINING CO		7/30/1948	39.92667	-75.20333	PHILADELPHIA			WELL	UNUSED	DESTROYED	41	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 84	
30453		ABBOTTS DAIRIES		1/1/1929	39.93139	-75.1725	PHILADELPHIA			WELL	UNUSED	DESTROYED	42	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 49	
30397		ROOSEVELT PARK		1/1/1919	39.90083	-75.18028	PHILADELPHIA			WELL	UNUSED	DESTROYED	43	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 64	
29779		GULF OIL CORP		1/1/1936	39.90611	-75.20833	PHILADELPHIA			WELL	UNUSED	DESTROYED	44	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 41	
29812		ATLANTIC REFINING CO			39.91361	-75.20028	PHILADELPHIA			WELL	UNUSED	DESTROYED	45	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 71	
29813		WFIL TRANSMISSION ST		1/5/1938	39.91389	-75.20917	PHILADELPHIA			WELL	UNUSED	DESTROYED	46	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 31	
29848		JARDIN BRICK CO		1/1/1908	39.92167	-75.18861	PHILADELPHIA			WELL	UNUSED	DESTROYED	47	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 52	
29862		ATLANTIC REFINING CO			39.92472	-75.19889	PHILADELPHIA			WELL	UNUSED	DESTROYED	48	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 79	
30396		ROOSEVELT PARK		1/1/1919	39.90028	-75.17889	PHILADELPHIA			WELL	UNUSED	DESTROYED	49	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 62	
30446		ATLANTIC REFINING CO		1/1/1921	39.92806	-75.20306	PHILADELPHIA			WELL	UNUSED	DESTROYED	50	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 73	
30449		SAVOIA THEATER		6/11/1937	39.92861	-75.16889	PHILADELPHIA			WELL	UNUSED	DESTROYED	51	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 134	
29832		ATLANTIC REFINING CO		1/1/1925	39.92056	-75.1925	PHILADELPHIA			WELL	UNUSED	DESTROYED	52	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 81	
30402		U S NAVAL HOSPITAL		9/11/1942	39.90806	-75.18056	PHILADELPHIA			WELL	UNUSED	DESTROYED	53	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 86	
30454		ABBOTTS DAIRIES		7/28/1944	39.93139	-75.1725	PHILADELPHIA			WELL	UNUSED	DESTROYED	54	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 50	
484151		SUNOCO	REFINERY AREA - OFF S 26TH ST	1/28/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	1	PAGS WWI ELECTRONIC	UNKNOWN		IW-2	
483489		SUNOCO REFINERY AREA	OFF S 26TH ST	2/17/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	2	PAGS WWI ELECTRONIC	UNKNOWN		IW-14	
484160		SUNOCO REFINERY AREA	OFF S 26TH ST	2/17/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	3	PAGS WWI ELECTRONIC	UNKNOWN		IW-15	
483491		SUNOCO REFINERY AREA	OFF S 26TH ST	2/10/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	4	PAGS WWI ELECTRONIC	UNKNOWN		IW-21	
495283		SUNOCO REFINERY	OFF S 26TH ST	2/12/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	5	PAGS WWI ELECTRONIC	UNKNOWN		IW-17	
484164		SUNOCO REFINERY AREA	OFF S 26TH ST	2/17/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	6	PAGS WWI ELECTRONIC	UNKNOWN		IW-25	
484155		SUNOCO REFINERY AREA	OFF S 26TH ST	2/12/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	7	PAGS WWI ELECTRONIC	UNKNOWN		IW-10	
484162		SUNOCO REFINERY AREA	OFF S 26TH ST	2/12/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	8	PAGS WWI ELECTRONIC	UNKNOWN		IW-18	
483493		SUNOCO REFINERY AREA	OFF S 26TH ST	2/13/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	9	PAGS WWI ELECTRONIC	UNKNOWN		IW-23	
484161		SUNOCO REFINERY AREA	OFF S 26TH ST	2/16/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	10	PAGS WWI ELECTRONIC	UNKNOWN		IW-16	
483515		SUNOCO REFINERY AREA	OFF S 26TH ST	2/11/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	11	PAGS WWI ELECTRONIC	UNKNOWN		IW-9	
484153		SUNOCO REFINERY AREA	OFF S 26TH ST	2/3/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	12	PAGS WWI ELECTRONIC	UNKNOWN		IW-4	
483492		SUNOCO REFINERY AREA	OFF S 26TH ST	2/12/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	13	PAGS WWI ELECTRONIC	UNKNOWN		IW-22	
483483		SUNOCO REFINERY AREA	OFF S 26TH ST	1/27/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	14	PAGS WWI ELECTRONIC	UNKNOWN		IW-1	
484163		SUNOCO REFINERY AREA	OFF S 26TH ST	2/12/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	15	PAGS WWI ELECTRONIC	UNKNOWN		IW-19	
484154		SUNOCO REFINERY AREA	OFF S 26TH ST	2/4/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	16	PAGS WWI ELECTRONIC	UNKNOWN		IW-5	
483484		SUNOCO REFINERY AREA	OFF S 26TH ST	2/4/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	17	PAGS WWI ELECTRONIC	UNKNOWN		IW-6	

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
484152		SUNOCO REFINERY AREA	OFF S 26TH ST	1/29/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	18	PAGS WWI ELECTRONIC	UNKNOWN		IW-3	
483486		SUNOCO REFINERY AREA	OFF S 26TH ST	2/6/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	19	PAGS WWI ELECTRONIC	UNKNOWN		IW-7	
495284		SUNOCO REFINERY	OFF S 26TH ST	2/16/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	20	PAGS WWI ELECTRONIC	UNKNOWN		IW-24	
483488		SUNOCO REFINERY AREA	OFF S 26TH ST	2/18/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	21	PAGS WWI ELECTRONIC	UNKNOWN		TW-13	
484293		SUNOCO REFINERY AREA	OFF S 26TH ST	2/19/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	22	PAGS WWI ELECTRONIC	UNKNOWN		IW-27	
484156		SUNOCO REFINERY AREA	OFF S 26TH ST	2/19/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	23	PAGS WWI ELECTRONIC	UNKNOWN		IW-11	
483490		SUNOCO REFINERY AREA	OFF 2 26TH ST	2/11/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	24	PAGS WWI ELECTRONIC	UNKNOWN		IW-20	
484292		SUNOCO REFINERY AREA	OFF S 26TH ST	2/18/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	INJECTION	25	PAGS WWI ELECTRONIC	UNKNOWN		IW-26	
484158		SUNOCO REFINERY AREA	OFF S 26TH ST	2/18/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	26	PAGS WWI ELECTRONIC	UNKNOWN		IW-12	
483487		SUNOCO REFINERY AREA	OFF S 26TH ST	2/10/2009	39.915	-75.19222	PHILADELPHIA	Commercial Street Atlas Program		WELL		INJECTION	27	PAGS WWI ELECTRONIC	UNKNOWN		IW-8	
475993		VERIZON PA LLC - SOUTH DISTRICT WORK C	1851 S 34TH ST	9/14/2011	39.93133	-75.2003	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	1	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW-10	
514164		FMR SUNOCO STATION - PASSYUNK AUTO C	1740 W PASSYUNK - CNR S 18TH AND W PASSYUNK	5/27/2014	39.92412	-75.17613	PHILADELPHIA	GPS - Global Positioning System	19145	WELL	OTHER	MONITORING	2	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW3ABAN	MW3 ABANDONMENT. Tremie grouted AND surface RESTORED TO MATCH EXISTING GROUND. OCT 2018 GOOGLE STREET IMAGERY SHOWS THE SITE CONVERTED INTO THE PASSYUNK AUTO CENTER REPAIR GARAGE.
605248	218200	Former Passyunk Homes - PHILA HOUSING A	NR PATTISON AND PENROSE AVES	11/23/2005	39.90796	-75.18946	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	3	PAGS WWI PAPER	MINIMAL DATA		MW1	MW1. FMR PASSYUNK HOMES NEIGHBORHOOD WAS BUILT IN THE 1940S FOR RETURNING WW2 SVC MEMBERS. AREA BECAME BLIGHTED AND WAS TOTALLY REDEVELOPED.
481016		SUNOCO	REFINERY AREA-E OF LANIER AVE	6/16/2010	39.90708	-75.20293	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	4	PAGS WWI ELECTRONIC	UNKNOWN		S-288	
475283		VERIZON PA LLC - S DISTRICT WORK CTR 2	1851 S 34TH ST.	5/23/2011	39.93166	-75.20069	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	5	PAGS WWI ELECTRONIC	MINIMAL DATA		MW9	MW9. LAT-LONG COORDINATES AS PROVIDED FOR THIS RECORD PLOT ON 34TH ST - MAY BE AN OFF-SITE WELL.
481018		SUNOCO	REFINERY AREA- S OF W PASSYUNK	6/9/2010	39.91921	-75.19765	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	6	PAGS WWI ELECTRONIC	UNKNOWN		S-295	
481770		SUNOCO	REFINERY AREA - W OF LANIER AVE	5/27/2010	39.90672	-75.21071	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	7	PAGS WWI ELECTRONIC	UNKNOWN		C-137	
500067		City of Philadelphia	1515 Arch St, Philadelphia	7/6/2006	39.90486	-75.17737	PHILADELPHIA	GPS - Global Positioning System	19102	WELL		MONITORING	8	PAGS WWI ELECTRONIC				Well tremmie grouted, surface restored to match existing
512487		Danbro, L.P.	26th Street	6/13/2013	39.90339	-75.19633	PHILADELPHIA	GPS - Global Positioning System	19145	WELL		MONITORING	9	PAGS WWI ELECTRONIC				
512484		Danbro, L.P.	26th Street	6/13/2013	39.90172	-75.19647	PHILADELPHIA	GPS - Global Positioning System	19145	WELL		MONITORING	10	PAGS WWI ELECTRONIC				
475170		VERIZON PA LLC - S DIST WORK CTR 2	1851 S 34TH ST.	5/23/2011	39.93143	-75.20034	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	11	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW7	MW7.
484264		Sunoco REFINERY AREA	S OF W PASSYUNK	4/18/2011	39.91445	-75.20898	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	12	PAGS WWI ELECTRONIC	UNKNOWN		W-32S	
481799		SUNOCO	REFINERY AREA - N OF HARTRANFT	6/11/2010	39.91602	-75.20011	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	13	PAGS WWI ELECTRONIC	UNKNOWN		S-328	
481020		SUNOCO	REFINERY AREA- NR SCHUYLKILL AVE AND W PASSYUNK	5/5/2010	39.91846	-75.20013	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	14	PAGS WWI ELECTRONIC	UNKNOWN		S-297	
484807		Sunoco REFINERY AREA	S OF W PASSYUNK	4/18/2011	39.91442	-75.20888	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	15	PAGS WWI ELECTRONIC	UNKNOWN		W-32D	
511997		LUKOIL	2101 S 11TH ST	2/19/2014	39.9235	-75.16434	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	16	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW3	MW3.
512465		Danbro, L.P.	26th Street	6/13/2013	39.90258	-75.19628	PHILADELPHIA	GPS - Global Positioning System	19145	WELL		MONITORING	17	PAGS WWI ELECTRONIC				
512488		Danbro, L.P.	26th Street	6/13/2013	39.90253	-75.19467	PHILADELPHIA	GPS - Global Positioning System	19145	WELL		MONITORING	18	PAGS WWI ELECTRONIC				
552350		Evergreen Resource Management		3/5/2014	39.91576	-75.19208	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	19	PAGS WWI ELECTRONIC				
552525		Evergreen Resource Management		1/15/2014	39.91783	-75.19622	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	20	PAGS WWI ELECTRONIC				
594162		Evergreen Resource Management		12/10/2014	39.91684	-75.19541	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	21	PAGS WWI ELECTRONIC				
488005		Sunoco REFINERY AREA	BETWEEN SCHUYLKILL AVE AND RIVER	8/23/2011	39.91721	-75.20174	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	22	PAGS WWI ELECTRONIC	UNKNOWN		MW5	
480994		SUNOCO	REFINERY AREA-W OF LANIER AVE	6/10/2010	39.90693	-75.20995	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	23	PAGS WWI ELECTRONIC	UNKNOWN		C-136	
508413		City of Philadelphia	2600 South 13th Street, Philadelphia, PA	7/7/2013	39.91783	-75.16921	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	24	PAGS WWI ELECTRONIC				
512466		Danbro, L.P.	26th Street	7/13/2013	39.90167	-75.19744	PHILADELPHIA	GPS - Global Positioning System	19145	WELL		MONITORING	25	PAGS WWI ELECTRONIC				
552406		Evergreen Resource Management		3/11/2014	39.91773	-75.1962	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	26	PAGS WWI ELECTRONIC				
552524		Evergreen Resource Management		12/18/2013	39.91667	-75.19388	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	27	PAGS WWI ELECTRONIC				
594163		Evergreen Resource Management		12/5/2014	39.91707	-75.19437	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	28	PAGS WWI ELECTRONIC				
594165		Evergreen Resource Management	3100 S 26th St	1/6/2015	39.91936	-75.19122	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	29	PAGS WWI ELECTRONIC				
605229	218181	FMR EXXON - DiDONATO'S AUTO REPAIR	2601 SNYDER AVE	3/1/1990	39.9272	-75.18988	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	30	PAGS WWI PAPER	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)			SEPT 2018 GOOGLE STREET IMAGERY SHOWS SITE REDEVELOPED INTO A BUSINESS BY THE NAME OF DiDONATO'S AUTO REPAIR.
490716		VERIZON PA LLC - S DISTRICT WORK CTR 2	1851 S 34TH ST	9/19/2011	39.9303	-75.20139	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	31	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW-13	
489934		Sunoco	REFINERY AREA - BETWEEN SCHUYLKILL AVE AND RIVER	8/26/2011	39.91763	-75.201	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	32	PAGS WWI ELECTRONIC	UNKNOWN		MW-9P	
500143		City of Philadelphia	1515 Arch Street, Philadelphia	4/26/2006	39.90491	-75.17716	PHILADELPHIA	GPS - Global Positioning System	19102	WELL		MONITORING	33	PAGS WWI ELECTRONIC				Well Tremmie grouted, surface restored to match existing
500144		City of Philadelphia	1515 Arch St., Philadelphia	4/26/2006	39.90485	-75.177	PHILADELPHIA	GPS - Global Positioning System	19102	WELL		MONITORING	34	PAGS WWI ELECTRONIC				Well tremmie grouted, surface restored to match existing

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
500145		City of Philadelphia	1515 Arch St., Philadelphia	4/26/2012	39.90485	-75.17715	PHILADELPHIA	GPS - Global Positioning System	19102	WELL		MONITORING	35	PAGS WWI ELECTRONIC				Well tremmie grouted, surface restored to match existing
514166		FMR SUNOCO STATION - PASSYUNK AUTO C	1740 W PASSYUNK	5/27/2014	39.92411	-75.17622	PHILADELPHIA	GPS - Global Positioning System	19145	WELL	OTHER	MONITORING	36	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW4ABAN	MW4 ABANDONMENT. Tremie grouted AND surface RESTORED TO MATCH EXISTING GROUND. OCT 2018 GOOGLE STREET IMAGERY SHOWS THE SITE CONVERTED INTO THE PASSYUNK AUTO CENTER REPAIR GARAGE.
656549	226157	PHILLIES STADIUM PARKING LOT	NEAR CNR PATTISON AVE and 7TH ST	9/18/2002	39.90406	-75.16245	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	37	PAGS WWI PAPER	MINIMAL DATA			PW-10S. LAT AND LONG APPROX.
488004		Sunoco REFINERY AREA	BETWEEN SCHUYLKILL AVE AND RIVER	8/22/2011	39.91549	-75.20251	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	38	PAGS WWI ELECTRONIC	UNKNOWN		MW3	
498763		Verizon	1851 S 34TH ST	2/28/2012	39.93139	-75.20005	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	39	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW16	
500069		City of Philadelphia	1515 Arch St, Philadelphia	7/6/2006	39.90472	-75.17722	PHILADELPHIA	GPS - Global Positioning System	19102	WELL		MONITORING	40	PAGS WWI ELECTRONIC				Well tremmie grouted, surface restored to match existing
605228	218180	FMR EXXON - DiDONATO'S AUTO REPAIR	2601 SNYDER AVE	3/1/1990	39.9272	-75.18988	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	41	PAGS WWI PAPER	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)			SEPT 2018 GOOGLE STREET IMAGERY SHOWS SITE REDEVELOPED INTO A BUSINESS BY THE NAME OF DiDONATO'S AUTO REPAIR.
481021		SUNOCO	REFINERY AREA-N OF HARTRANFT	6/8/2010	39.91585	-75.19702	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	42	PAGS WWI ELECTRONIC	UNKNOWN		S-301	
481782		SUNOCO	REFINERY AREA - E OF LANIER	5/18/2010	39.90987	-75.20477	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	43	PAGS WWI ELECTRONIC	UNKNOWN		S-283	
481789		SUNOCO	REFINERY AREA - S OF W PASSYUNK	5/26/2010	39.92019	-75.19679	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	44	PAGS WWI ELECTRONIC	UNKNOWN		S-294	
496790		SUNOCO REFINERY AREA	E OF SCHUYLKILL AVE	5/7/2010	39.91556	-75.20126	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	45	PAGS WWI ELECTRONIC	UNKNOWN		S-313	
496788		SUNOCO REFINERY AREA	E OF SCHUYLKILL AVE	5/21/2010	39.91551	-75.20012	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	46	PAGS WWI ELECTRONIC	UNKNOWN		S-303	
475171		VERIZON PA LLC - S DISTRICT WORK CTR 2	1851 S 34TH ST.	5/23/2011	39.93162	-75.20051	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	47	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW8	MW8.
552538		Evergreen Resource Management		12/3/2013	39.91569	-75.19208	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	48	PAGS WWI ELECTRONIC				
596660		Evergreen Resource Management	3118 S 26th St	1/13/2015	39.91887	-75.1913	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	49	PAGS WWI ELECTRONIC				
481761		SUNOCO	REFINERY AREA - OFF SCHUYLKILL AVE	6/2/2010	39.91001	-75.20656	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	50	PAGS WWI ELECTRONIC	UNKNOWN		C-129	
484851		Sunoco REFINERY AREA	S OF W PASSYUNK	4/19/2011	39.91787	-75.20547	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	51	PAGS WWI ELECTRONIC	UNKNOWN		W-29	
487860		ARCO		6/29/2011	39.91324	-75.19208	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	52	PAGS WWI ELECTRONIC				
490718		VERIZON PA LLC - S DISTRICT WORK CTR	1851 S 34TH ST	9/16/2011	39.93015	-75.20083	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	53	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW-14	
481778		SUNOCO	REFINERY AREA - W OF LANIER AVE	6/3/2010	39.90982	-75.21231	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	54	PAGS WWI ELECTRONIC	UNKNOWN		C-143	
488645		Sunoco	REFINERY AREA - BETWEEN SCHUYLKILL AVE AND RIVER	8/22/2011	39.91555	-75.20272	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	55	PAGS WWI ELECTRONIC	UNKNOWN		MW2	
481793		SUNOCO	REFINERY AREA - N OF HARTRANFT	5/19/2010	39.91435	-75.19581	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	56	PAGS WWI ELECTRONIC	UNKNOWN		S-305	
496800		SUNOCO REFINERY AREA	W OF LANIER AVE	6/15/2010	39.90421	-75.20569	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	57	PAGS WWI ELECTRONIC	UNKNOWN		C-132	
484853		Sunoco REFINERY AREA	S OF W PASSYUNK	4/18/2011	39.91644	-75.20606	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	58	PAGS WWI ELECTRONIC	UNKNOWN		W-30	
498705		Naval Facilities Engineering Command	5001 South Broad St	3/13/2012	39.89298	-75.17842	PHILADELPHIA	GPS - Global Positioning System	19112	WELL	OTHER	MONITORING	59	PAGS WWI ELECTRONIC	UNKNOWN	MW-1		2in monitoring well, screened 2-12' bgs, sand pak (0.01) 1.5 - 13'bgs, 8 in flush well cover
500142		City of Philadelphia	1515 Arch Street, Philadelphia	4/26/2006	39.90515	-75.17674	PHILADELPHIA	GPS - Global Positioning System	19102	WELL		MONITORING	60	PAGS WWI ELECTRONIC				Well tremmie grouted, sureface restored to match existing
514232		FMR SUNOCO STATION - PASSYUNK AUTO C	1740 W PASSYUNK	5/27/2014	39.92414	-75.17605	PHILADELPHIA	GPS - Global Positioning System	19145	WELL	OTHER	MONITORING	61	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW1ABAN	MW1 ABANDONMENT. Tremie grouted AND surface RESTORED TO MATCH EXISTING GROUND. OCT 2018 GOOGLE STREET IMAGERY SHOWS THE SITE CONVERTED INTO THE PASSYUNK AUTO CENTER REPAIR GARAGE.
605250	218202	Former Passyunk Homes - PHIL HOUSING AU	NEAR PATTISON AND PENROSE AVES	11/23/2005	39.90796	-75.18946	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	62	PAGS WWI PAPER	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW3	MW3. FMR PASSYUNK HOMES NEIGHBORHOOD WAS BUILT IN THE 1940S FOR RETURNING WW2 SVC MEMBERS. AREA BECAME BLIGHTED AND WAS TOTALLY REDEVELOPED.
481013		SUNOCO	REFINERY AREA-E OF LANIER AVE	5/14/2010	39.91004	-75.20221	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	63	PAGS WWI ELECTRONIC	UNKNOWN		S-284	
496789		SUNOCO REFINERY AREA	HARTRANFT ST	5/18/2010	39.91301	-75.19746	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	64	PAGS WWI ELECTRONIC	UNKNOWN		S-311	
481781		SUNOCO	REFINERY AREA - S OF HARTRANFT	5/1/2010	39.91163	-75.20079	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	65	PAGS WWI ELECTRONIC	UNKNOWN		S-281	
496796		SUNOCO REFINERY AREA	E OF SCHUYLKILL AVE	5/11/2010	39.91554	-75.20161	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	66	PAGS WWI ELECTRONIC	UNKNOWN		S-316	
497455		SUNOCO REFINERY AREA	N OF HARTRANFT ST	6/4/2010	39.91509	-75.19739	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	67	PAGS WWI ELECTRONIC	UNKNOWN		S-304	
504475		Defense Logistics Agency	S. 23rd Street, Philadelphia, PA 19145	1/14/2013	39.91443	-75.18673	PHILADELPHIA	GPS - Global Positioning System		WELL		MONITORING	68	PAGS WWI ELECTRONIC				
508414		City of Philadelphia	2600 South 13th Street, Philadelphia, PA	8/2/2013	39.91783	-75.16927	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	69	PAGS WWI ELECTRONIC				
512047		LUKOIL	2101 S 11TH ST	2/19/2014	39.92339	-75.16434	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	70	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW1	MW1
512463		Danbro, L.P.	26th Street	6/13/2013	39.90233	-75.19761	PHILADELPHIA	GPS - Global Positioning System	19145	WELL		MONITORING	71	PAGS WWI ELECTRONIC				
594164		Evergreen Resource Management	3102 S 26th St	1/7/2015	39.91919	-75.19123	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	72	PAGS WWI ELECTRONIC				
596661		Evergreen Resource Management	3112 S 26th St	1/12/2015	39.91899	-75.19127	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	73	PAGS WWI ELECTRONIC				
605226	218178	FMR EXXON - DIDONATO'S AUTO REPAIR	2601 SNYDER AVE - CNR SNYDER AND POINT BREEZE	3/1/1990	39.9272	-75.18988	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	74	PAGS WWI PAPER	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)			SEPT 2018 GOOGLE STREET IMAGERY SHOWS THE SITE REDEVELOPED INTO A BUSINESS CALLED DiDONATO'S AUTO REPAIR.
497454		SUNOCO REFINERY AREA	BETWEEN LANIER AVE AND RIVER	6/2/2010	39.90783	-75.21133	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	75	PAGS WWI ELECTRONIC	UNKNOWN		C-139	
481942		SUNOCO	REFINERY AREA - ALONG SCHUYLKILL AVE	5/21/2010	39.91521	-75.20211	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	76	PAGS WWI ELECTRONIC	UNKNOWN		S-306	
484265		Sunoco REFINERY AREA	S OF W PASSYUNK	4/20/2011	39.91549	-75.20993	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	77	PAGS WWI ELECTRONIC	UNKNOWN		W-34	
481023		SUNOCO	REFINERY AREA - OFF SCHUYLKILL AVE	5/12/2010	39.91602	-75.20174	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	78	PAGS WWI ELECTRONIC	UNKNOWN		S-302	
481792		SUNOCO	REFINERY AREA - N OF HARTRANFT	5/20/2010	39.91671	-75.19776	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	79	PAGS WWI ELECTRONIC	UNKNOWN		S-300	
484266		Sunoco REFINERY RELATED	NR CNR ESSINGTON AND PASSYUNK	4/20/2011	39.91557	-75.21262	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	80	PAGS WWI ELECTRONIC	UNKNOWN		W-33	
475994		VERIZON PA LLC - S DISTRICT WORK CTR 2	1851 S 34TH ST	9/13/2011	39.93008	-75.20006	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	81	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW-11	
508415		City of Philadelphia	2600 South 13th Street, Philadelphia, PA	8/2/2013	39.91785	-75.16927	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	82	PAGS WWI ELECTRONIC				
512462		Danbro, L.P.	26th Street	6/13/2013	39.90403	-75.19439	PHILADELPHIA	GPS - Global Positioning System	19145	WELL		MONITORING	83	PAGS WWI ELECTRONIC				
514233		FMR SUNOCO STATION - PASSYUNK AUTO C	1740 W PASSYUNK	5/27/2014	39.92399	-75.17616	PHILADELPHIA	GPS - Global Positioning System	19145	WELL	OTHER	MONITORING	84	PAGS WWI ELECTRONIC	UNKNOWN		MW2ABAN	MW2 ABANDONMENT. Tremie grouted AND surface RESTORED TO MATCH EXISTING GROUND. OCT 2018 GOOGLE STREET IMAGERY SHOWS THE SITE CONVERTED INTO THE PASSYUNK AUTO CENTER REPAIR GARAGE.

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
552338		Evergreen Resource Management		12/19/2013	39.9175	-75.19216	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	85	PAGS WWI ELECTRONIC				
605249	218201	Former Passyunk Homes - PHILA HOUSING A	NR PATTISON AND PENROSE	11/23/2005	39.90796	-75.18946	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	86	PAGS WWI PAPER	MINIMAL DATA		MW2	MW2. FMR PASSYUNK HOMES NEIGHBORHOOD WAS BUILT IN THE 1940S FOR RETURNING WW2 SVC MEMBERS. AREA BECAME BLIGHTED AND WAS TOTALLY REDEVELOPED.
640444		Evergreen	3450 S 26th St	2/8/2016	39.90918	-75.19379	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	87	PAGS WWI ELECTRONIC				
656555	226165	PHILLIES STADIUM VICINITY	NEAR CNR PHILLIES DRIVE and BROAD ST	9/10/2002	39.90769	-75.17352	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	88	PAGS WWI PAPER	MINIMAL DATA			PW-6D
679701		PES		9/12/2019	39.9241	-75.19887	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	89	PAGS WWI ELECTRONIC				
683180		PES		1/14/2020	39.90897	-75.20559	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	90	PAGS WWI ELECTRONIC				
500066		City of Philadelphia	1515 Arch St, Philadelphia	4/26/2006	39.90501	-75.17699	PHILADELPHIA	GPS - Global Positioning System	19102	WELL		MONITORING	91	PAGS WWI ELECTRONIC				Well tremmie grouted, surface restored to match existing
512482		Danbro, L.P.	26th Street	6/13/2013	39.90308	-75.19547	PHILADELPHIA	GPS - Global Positioning System	19145	WELL		MONITORING	92	PAGS WWI ELECTRONIC				
552392		Evergreen Resource Management		3/12/2014	39.91779	-75.1962	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	93	PAGS WWI ELECTRONIC				
605763	218769	FMR PASSYUNK HOMES AREA	FMR BIGLER TERRACE NEAR 24TH ST	11/23/1998	39.91377	-75.18776	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	94	PAGS WWI PAPER	MINIMAL DATA			PH-14.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EXI
623479		Evergreen Resources Group, LLC	3144 Passyunk Avenue	2/26/2015	39.91974	-75.19122	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	95	PAGS WWI ELECTRONIC				
481798		SUNOCO	REFINERY AREA - E OF SCHUYLKILL AVE	5/12/2010	39.91584	-75.2014	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	96	PAGS WWI ELECTRONIC	UNKNOWN		S-318	
481002		SUNOCO	REFINERY AREA-W OF LANIER AVE	5/27/2010	39.90545	-75.21198	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	97	PAGS WWI ELECTRONIC	UNKNOWN		C-138	
481763		SUNOCO	REFINERY AREA - W OF LANIER AVE	6/3/2010	39.90421	-75.20569	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	98	PAGS WWI ELECTRONIC	UNKNOWN		C-131	
594650		Evergreen Resource Management	3106 S 26th St	1/8/2015	39.91913	-75.19124	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	99	PAGS WWI ELECTRONIC				
596204		Evergreen Resource Management		12/9/2014	39.91751	-75.1931	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	100	PAGS WWI ELECTRONIC				
603983		Naval Yard Philadelphia	4749 S 15th St	3/30/2015	39.89275	-75.17723	PHILADELPHIA	Commercial Street Atlas Program	19112	WELL		MONITORING	101	PAGS WWI ELECTRONIC				MW12 located in Tank Farm 950 - 2-inch PVC x 13-Feet Deep w/10-Feet .010 Screen
642821		Evergreen Resources Group, LLC		8/4/2016	39.92521	-75.20528	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	102	PAGS WWI ELECTRONIC				
658717	227660	FMR CITY SANITATION DEPT	7TH ST AND PATTISON AVE.	6/1/1990	39.90534	-75.16133	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	103	PAGS WWI PAPER	MINIMAL DATA			LAT AND LONG ARE APPROX. BASED ON 2017 GOOGLE STREET IMAGERY, THIS IS NOW THE SITE OF A SYSCO TRUCKING TERMINAL.
683067	241713	FMR PASSYUNK HOMES - PHILA HOUSING A	OFF FMR TAYLOR TERRACE	2/19/1999	39.91441	-75.19002	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	104	PAGS WWI PAPER	MINIMAL DATA		PH-2	PH-2.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EXIS
683074	241720	FMR PASSYUNK HOMES - PHILA HOUSING A	NEAR CNR FMR DEWITT ST AND S 20TH	3/3/1999	39.9129	-75.18203	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	105	PAGS WWI PAPER	MINIMAL DATA		MWS-10	MWS-10.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EX
496797		SUNOCO REFINERY AREA	E OF SCHUYLKILL AVE	5/7/2010	39.91566	-75.20127	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	106	PAGS WWI ELECTRONIC	UNKNOWN		S-317	
481764		SUNOCO	REFINERY AREA - W OF LANIER AVE	6/15/2010	39.90485	-75.20739	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	107	PAGS WWI ELECTRONIC	UNKNOWN		C-133	
484263		Sunoco REFINERY AREA	S OF W PASSYUNK	4/19/2011	39.91709	-75.20435	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	108	PAGS WWI ELECTRONIC	UNKNOWN		MW-28	
496795		SUNOCO REFINERY AREA	E OF SCHUYLKILL AVE	5/11/2010	39.91554	-75.20161	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	109	PAGS WWI ELECTRONIC	UNKNOWN		S-315	
487862		ARCO		7/7/2011	39.91258	-75.19209	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	110	PAGS WWI ELECTRONIC				
481762		SUNOCO	REFINERY AREA - W OF LANIER AVE	6/2/2010	39.90896	-75.20578	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	111	PAGS WWI ELECTRONIC	UNKNOWN		C-130	
498644		Naval Facilities Engeering Command	5001 S Broad St	3/13/2012	39.89316	-75.17784	PHILADELPHIA	GPS - Global Positioning System	19112	WELL	OTHER	MONITORING	112	PAGS WWI ELECTRONIC		MW-7		Phihladelphia Navy Yard 2in monitoring well, 12' with 10' screen, 8 in flush well head
512048		LUKOIL	2101 S 11TH ST	2/19/2014	39.92343	-75.16424	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	113	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW2	MW2
512464		Danbro, L.P.	26th Street	6/13/2013	39.90328	-75.19667	PHILADELPHIA	GPS - Global Positioning System	19145	WELL		MONITORING	114	PAGS WWI ELECTRONIC				
686405		City of Philadelphia	1500 Pattison Ave.	5/20/2020	39.90096	-75.18701	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	115	PAGS WWI ELECTRONIC				
643638		Philadelphia Gas Works	Walter Street	9/12/2016	39.92181	-75.19477	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	116	PAGS WWI ELECTRONIC				MW-C 2-inch PVC x 35-Feet Deep w/ 20-Feet .010 Screen
656554	226164	PHILLIES STADIUM AREA	NEAR CNR PHILLIES DRIVE and BROAD ST	9/12/2002	39.90859	-75.17328	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	117	PAGS WWI PAPER	MINIMAL DATA			PW-6S. LAT AND LONG APPROX.
656556	226166	PHILLIES STADIUM PARKING LOT	S OF PACKER AVE	9/6/2002	39.91096	-75.16934	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	118	PAGS WWI PAPER	MINIMAL DATA			PW-1S. LAT AND LONG APPROX.
668671		Philadelphia Energy Solutions	3518 Schuylkill Ave	9/28/2018	39.91118	-75.20516	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	119	PAGS WWI ELECTRONIC				Monitoring well is located within refining complex between Schuylkill River and Schuylkill Avenue, and approx. 3300 feet south from intersection of Frontage Road and Schuylkill Avenue.
673520		Philadelphia Authority for Industrial Develop	700 Pattison Avenue	1/9/2019	39.90025	-75.16521	PHILADELPHIA	Commercial Street Atlas Program	19148	WELL		MONITORING	120	PAGS WWI ELECTRONIC				Installation of 2 inch monitoring well.
680387		PES	3144 Passyunk Aveneu	9/23/2019	39.92412	-75.19895	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	121	PAGS WWI ELECTRONIC				
683229		PES		1/7/2020	39.9078	-75.20426	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	122	PAGS WWI ELECTRONIC				
693040		Sunoco		2/12/2021	39.92018	-75.19487	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	123	PAGS WWI ELECTRONIC				
701480		United States Navy	2127 Constitution Ave	12/16/2021	39.89249	-75.18803	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	124	PAGS WWI ELECTRONIC				1082MW04 - 2-inch PVC x 14-Feet Deep with 10-foot .020 Screen. Flush Mount Protective Casing Completion
701530		United States Navy	2121 Constitution Ave	12/14/2021	39.89208	-75.18715	PHILADELPHIA	Commercial Street Atlas Program	19112	WELL	OTHER	MONITORING	125	PAGS WWI ELECTRONIC				1081MW04 - 2-inch PVC x 14-Feet Deep with 10-foot .020 Screen. Flush Mount Protective Casing Completion
702331		PES		2/14/2022	39.90966	-75.20465	PHILADELPHIA	Commercial Street Atlas Program				MONITORING	126			s-485		
687676		PES		7/8/2020	39.90602	-75.19411	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	127	PAGS WWI ELECTRONIC				
691149		Sunoco		12/1/2020	39.92058	-75.19419	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	128	PAGS WWI ELECTRONIC				

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
754239		PIDC Philadelphia Industrial Development Co	CRESCENT DRIVE	6/4/2023	39.89627	-75.17542	PHILADELPHIA		19112		OTHER	MONITORING	129			46MW04		46SB04/46MW04 - 2" PVC X 14' BGS W/10' .0.0 SCREEN MONITORING WELL
640074		Evergreen		2/24/2016	39.90912	-75.19723	PHILADELPHIA	Commercial Street Atlas Program	Not F	WELL	OTHER	MONITORING	130	PAGS WWI ELECTRONIC				
642823		Evergreen Resources Group, LLC		8/9/2016	39.92429	-75.20617	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	131	PAGS WWI ELECTRONIC				
656545	226153	PHLLIES STADIUM PARKING LOT	NEAR CNR PATTISON AVE and 11TH ST	9/19/2002	39.90686	-75.16911	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	132	PAGS WWI PAPER	MINIMAL DATA			PW-5S
658647		Philadelphia Naval Shipyard	1524 Intrepid Ave	12/1/2015	39.89364	-75.17818	PHILADELPHIA	Commercial Street Atlas Program	19112	WELL	OTHER	MONITORING	133	PAGS WWI ELECTRONIC				MW-09 2-inch PVC x 13-foot deep w/10-foot .010 screen
680041		PES	3144 Passyunk Ave	9/17/2019	39.92373	-75.19961	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	134	PAGS WWI ELECTRONIC				
686373		City of Philadelphia	1500 Pattison Ave.	10/5/2023	39.89755	-75.18794	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	135	PAGS WWI ELECTRONIC				
686350		City of Philadelphia	1500 Pattison Ave.	10/5/2023	39.90089	-75.18802	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	136	PAGS WWI ELECTRONIC				
691989		Sunoco		12/16/2020	39.92015	-75.19247	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	137	PAGS WWI ELECTRONIC				
691991		Sunoco		12/14/2020	39.92068	-75.1942	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	138	PAGS WWI ELECTRONIC				
701592		United States Navy	2125 Constitution Ave	12/15/2021	39.89259	-75.18687	PHILADELPHIA	Commercial Street Atlas Program	19112	WELL	OTHER	MONITORING	139	PAGS WWI ELECTRONIC				1081MW01 - 2-inch PVC x 13-Feet Deep with 10-foot .020 Screen. Flush Mount Protective Casing Completion
704548		PES		4/27/2022	39.90498	-75.19325	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	140	PAGS WWI ELECTRONIC				
481791		SUNOCO	REFINERY AREA - E OF SCHUYLKILL AVE	6/8/2010	39.91709	-75.20012	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	141	PAGS WWI ELECTRONIC	UNKNOWN		S-299	
490715		VERIZON PA LLC - S DISTRICT WORK CTR 2	1851 S 34TH ST	9/14/2011	39.9311	-75.20052	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	142	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW-12	
481787		SUNOCO	REFINERY AREA - CNR SCHUYLKILL AVE AND W PASSYUNK	6/16/2010	39.91913	-75.20033	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	143	PAGS WWI ELECTRONIC	UNKNOWN		S-292	
488007		Sunoco REFINERY AREA	BETWEEN SCHUYLKILL AVE AND RIVER	8/25/2011	39.91776	-75.20135	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	144	PAGS WWI ELECTRONIC	UNKNOWN		MW-8P	
487864		ARCO		6/28/2011	39.91278	-75.19201	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	145	PAGS WWI ELECTRONIC				
490363		VERIZON PA LLC - S DISTRICT WORK CTR 2	1851 S 34TH ST	9/15/2011	39.92997	-75.20042	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	146	PAGS WWI ELECTRONIC	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		MW-15	
475169		VERIZON PA LLC - S DISTRICT WORK CTR 2	1851 S 34TH ST.	5/23/2011	39.93176	-75.20069	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	147	PAGS WWI ELECTRONIC	MINIMAL DATA		MW6	MW6. LAT-LONG COORDINATES AS PROVIDED FOR THIS RECORD PLOT ON 34TH ST - MAY BE AN OFF-SITE WELL.
497456		SUNOCO REFINERY AREA	NR CNR HARTRANFT AND SCHUYLKILL AVE	6/10/2010	39.91386	-75.20112	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	148	PAGS WWI ELECTRONIC	UNKNOWN		S-307	
498642		Naval Facilities Engineering Command	5001 S Broad St	3/12/2012	39.89339	-75.17857	PHILADELPHIA	GPS - Global Positioning System	19112	WELL	OTHER	MONITORING	149	PAGS WWI ELECTRONIC		MW-2R		2in monitoring well, 12' with 10' screen, 8in flush well head
552526		Evergreen Resource Management	2615 Hartranft St	1/9/2014	39.91301	-75.19408	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	150	PAGS WWI ELECTRONIC				
552340		Evergreen Resource Management		3/4/2014	39.91665	-75.19384	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	151	PAGS WWI ELECTRONIC				
552351		Evergreen Resource Management		3/6/2014	39.91779	-75.1962	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	152	PAGS WWI ELECTRONIC				
643672		Philadelphia Gas Works	Porter Station 28th Street	9/13/2016	39.9232	-75.1939	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	153	PAGS WWI ELECTRONIC				MW-A 2-inch PVC x 33-Feet Deep w/ 20-Feet .010 Screen
656557	226168	PHILLIES STADIUM PARKING LOT	S OF PACKER AVE	9/6/2002	39.90856	-75.16809	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	154	PAGS WWI PAPER	MINIMAL DATA			PW-2S. LAT AND LONG APPROX.
673500		Philadelphia Authority for Industrial Develop	700 Pattison Avenue	1/10/2019	39.90327	-75.16457	PHILADELPHIA	Commercial Street Atlas Program	19148	WELL		MONITORING	155	PAGS WWI ELECTRONIC				Installation of 2 inch monitoring well.
679015		PES	3144 Passyunk Avenue	8/13/2019	39.9237	-75.2002	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	156	PAGS WWI ELECTRONIC	UNKNOWN		PW19	
679252		PES	3144 Passyunk Avenue	8/15/2019	39.92352	-75.2007	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	157	PAGS WWI ELECTRONIC				
679253		PES	3144 Passyunk Ave	8/22/2019	39.92321	-75.20128	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	158	PAGS WWI ELECTRONIC				
679537		PES	3144 Passyunk Avenue	8/27/2019	39.92339	-75.20073	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	159	PAGS WWI ELECTRONIC				
686436		City of Philadelphia	1500 Pattison Ave.	10/5/2023	39.89971	-75.18608	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	160	PAGS WWI ELECTRONIC				
686437		City of Philadelphia	1500 Pattison Ave.	10/5/2023	39.89902	-75.18566	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	161	PAGS WWI ELECTRONIC				
687657		PES		6/16/2020	39.90471	-75.19722	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	162	PAGS WWI ELECTRONIC				
687658		PES		7/13/2020	39.9056	-75.19478	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	163	PAGS WWI ELECTRONIC				
687691		PES		6/16/2020	39.90739	-75.194	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	164	PAGS WWI ELECTRONIC				
687925		PES		8/10/2000	39.9046	-75.19443	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	165	PAGS WWI ELECTRONIC				
687976		PES		8/12/2020	39.90461	-75.19443	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	166	PAGS WWI ELECTRONIC				
691267		Sunoco		12/2/2020	39.92002	-75.19354	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	167	PAGS WWI ELECTRONIC				
691484		Sunoco		12/3/2020	39.91996	-75.19312	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	168	PAGS WWI ELECTRONIC				
701444		United States Navy	2121 Constitution Ave	12/14/2021	39.89222	-75.18742	PHILADELPHIA	Commercial Street Atlas Program	19112	WELL	OTHER	MONITORING	169	PAGS WWI ELECTRONIC				1082MW03 - 2-inch PVC x 13-Feet Deep with 10-foot .020 Screen. Flush Mount Protective Casing Completion
704537		PES		2/9/2022	39.90396	-75.19502	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	170	PAGS WWI ELECTRONIC				

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
683076	241722	FMR PASSYUNK HOMES - PHILA HOUSING A	OFF FMR BASH ST - STREET NO LONGER EXISTS	2/16/1999	39.91218	-75.18221	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	171	PAGS WWI PAPER	MINIMAL DATA		MWS-13	MWS-13.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EX
686423		City of Philadelphia	1500 Pattison Ave.	7/22/2024	39.9009	-75.18558	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	172	PAGS WWI ELECTRONIC				
687779		PES		7/1/2020	39.90653	-75.19399	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	173	PAGS WWI ELECTRONIC				
687979		PES		7/17/2020	39.90551	-75.19532	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	174	PAGS WWI ELECTRONIC				
693420		PES		2/19/2021	39.91068	-75.20436	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	175	PAGS WWI ELECTRONIC				
693429		PES		2/24/2021	39.91073	-75.20517	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	176	PAGS WWI ELECTRONIC				
623478		Evergreen Resources Group, LLC	3144 Passyunk Avenue	2/27/2015	39.91957	-75.19125	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	177	PAGS WWI ELECTRONIC				
623780		Evergreen Resources Group, LLC	3144 Passyunk Avenue	3/3/2015	39.91948	-75.19126	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	178	PAGS WWI ELECTRONIC				
641637		Septa	20th and Johnston Sts	4/8/2015	39.91415	-75.18027	PHILADELPHIA	GPS - Global Positioning System	19145	WELL	OTHER	MONITORING	179	PAGS WWI ELECTRONIC		MW-2		Located in Philadelphia, From Schuylkill Expressway - Rt 76 get off at exit 349, go left onto S. Broad St and then left onto Bigler St. Right on 18th St and left onto Johnston St and the left onto 2
642905		Evergreen Resources Group, LLC		8/8/2016	39.92402	-75.20774	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	180	PAGS WWI ELECTRONIC				
658681		Philaelphia Naval Yard	4807 S 16th St	11/15/2015	39.89274	-75.17871	PHILADELPHIA	Commercial Street Atlas Program	19112	WELL	OTHER	MONITORING	181	PAGS WWI ELECTRONIC				MW-14 2-inch PVC x 13-foot deep w/10-foot .010 screen
679605		PES	3144 Passyunk Avenue	8/28/2019	39.92349	-75.20041	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	182	PAGS WWI ELECTRONIC				
680039		PES	3144 Passyunk Ave	9/19/2019	39.92362	-75.19996	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	183	PAGS WWI ELECTRONIC				
603982		Naval Yard Philadelphia	4700 S 15th St	4/2/2015	39.89338	-75.17812	PHILADELPHIA	Commercial Street Atlas Program	19112	WELL		MONITORING	184	PAGS WWI ELECTRONIC				MW10 located in Tank Farm 950 - 2-inch PVC x 13-Feet Deep w/10-Feet .010 Screen
605227	218179	FMR EXXON - DiDONATO'S AUTO REPAIR	2601 SNYDER AVE	3/1/1990	39.9272	-75.18988	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	185	PAGS WWI PAPER	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)			SEPT 2018 GOOGLE STREET IMAGERY SHOWS SITE REDEVELOPED INTO A BUSINESS BY THE NAME OF DiDONATO'S AUTO REPAIR.
673563		Philadelphia Authority for Industrial Develop	700 Pattison Avenue	1/9/2019	39.90067	-75.16379	PHILADELPHIA	Commercial Street Atlas Program	19148	WELL		MONITORING	186	PAGS WWI ELECTRONIC				Installation of 2 inch monitoring well.
679254		PES	3144 Passyunk Ave	8/19/2019	39.92315	-75.20146	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	187	PAGS WWI ELECTRONIC				
679549		PES	3144 Passyunk Avenue	8/26/2019	39.92331	-75.20097	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	188	PAGS WWI ELECTRONIC				
680917		PES	3144 Passyunk Ave	10/17/2019	39.9307	-75.20149	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	189	PAGS WWI ELECTRONIC				
680919		PES	3144 Passyunk Ave	10/17/2019	39.93021	-75.20193	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	190	PAGS WWI ELECTRONIC				
683066	241712	FMR PASSYUNK HOMES - PHILA HOUSING A	OFF FMR TAYLOR TERRACE	2/26/1999	39.91311	-75.18901	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	191	PAGS WWI PAPER	MINIMAL DATA		PH-1A	PH-1A.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EXI
683073	241719	FMR PASSYUNK HOMES - PHILA HOUSING A	OFF FMR HULSEMAN TERRACE	2/24/1999	39.91125	-75.18951	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	192	PAGS WWI PAPER	MINIMAL DATA		HPS-6	HPS-6.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EXI
683075	241721	FMR PASSYUNK HOMES - PHILA HOUSING A	ON FMR BASH ST - NO LONGER EXISTS	2/16/1999	39.91218	-75.18221	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	193	PAGS WWI PAPER	MINIMAL DATA		MWS-11	MWS-11.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EX
686408		City of Philadelphia	1500 Pattison Ave.	10/5/2023	39.89962	-75.19017	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	194	PAGS WWI ELECTRONIC				
693401		Sunoco		3/2/2021	39.92035	-75.19564	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	195	PAGS WWI ELECTRONIC				
701573		United States Navy	2121 Constitution Ave	12/15/2021	39.89233	-75.18644	PHILADELPHIA	Commercial Street Atlas Program	19112	WELL	OTHER	MONITORING	196	PAGS WWI ELECTRONIC				1081MW02 - 2-inch PVC x 14-Feet Deep with 10-foot .020 Screen. Flush Mount Protective Casing Completion
656553	226163	PHILLIES STADIUM PARKING LOT	NEAR CNR PATTISON AVE and 7TH ST	9/16/2002	39.90581	-75.16301	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	197	PAGS WWI PAPER	MINIMAL DATA			PW-7S. LAT AND LONG APPROX
667599		Philadelphia Energy Solutions		9/19/2018	39.91048	-75.2053	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	198	PAGS WWI ELECTRONIC				
672963	238660	DANBRO L.P. - DANBRO DISTRIBUTORS	3700 S 26TH ST, PHILA	7/2/2004	39.9031	-75.19455	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	199	PAGS WWI PAPER	MINIMAL DATA			LAT AND LONG ARE FOR LOCATION OF OFFICE BLDG ASSOCIATED WITH THIS BUSINESS ADDRESS; WELL SHOULD BE LOCATED IN CLOSE PROXIMITY BUT SHOULD BE FIELD VERIFIED. WELL LOCATION ALSO ASSOCIATED WITH D'ANGELO
678981		PES	3144 Passyunk Avenue	8/12/2019	39.92307	-75.20178	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	200	PAGS WWI ELECTRONIC	UNKNOWN		PW3	
679715		PES	3144 Passyunk Avenue	9/10/2019	39.9238	-75.19933	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	201	PAGS WWI ELECTRONIC				
680042		PES	3144 Passyunk Ave	9/18/2019	39.92383	-75.19936	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	202	PAGS WWI ELECTRONIC				
691990		Sunoco		12/29/2020	39.92116	-75.19126	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	203	PAGS WWI ELECTRONIC				
623779		Evergreen Resources Group, LLC	3144 Passyunk Avenue	2/20/2015	39.91906	-75.19562	PHILADELPHIA	Commercial Street Atlas Program	Not F	WELL		MONITORING	204	PAGS WWI ELECTRONIC				
641636		Septa	20th and Johnston Sts	4/8/2015	39.91422	-75.18151	PHILADELPHIA	GPS - Global Positioning System	19145	WELL	OTHER	MONITORING	205	PAGS WWI ELECTRONIC		MW-1		Located in Philadelphia, From Schuylkill Expressway - Rt 76 get off at exit 349, go left onto S. Broad St and then left onto Bigler St. Right on 18th St and left onto Johnston St and the left onto 2
552529		Evergreen Resource Management		2/27/2014	39.91752	-75.19219	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	206	PAGS WWI ELECTRONIC				
552528		Evergreen Resource Management		2/25/2014	39.92107	-75.19153	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	207	PAGS WWI ELECTRONIC				

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
641638		Septa	20th and Johnston Sts	4/8/2015	39.91644	-75.17987	PHILADELPHIA	GPS - Global Positioning System	19145	WELL	OTHER	MONITORING	208	PAGS WWI ELECTRONIC		MW-3		Located in Philadelphia, From Schuylkill Expressway - Rt 76 get off at exit 349, go left onto S. Broad St and then left onto Bigler St. Right on 18th St and left onto Johnston St and the left onto 2
656547	226155	PHILLIES STADIUM PARKING LOT	NEAR CNR PATTISON AVE and 11TH ST	9/11/2002	39.90508	-75.16885	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	209	PAGS WWI PAPER	MINIMAL DATA			PW-3S. LAT AND LONG APPROX.
658620		Philadelphia Naval Yard	1536 Intrepid Ave	11/15/2015	39.89348	-75.17837	PHILADELPHIA	Commercial Street Atlas Program	19112	WELL	OTHER	MONITORING	210	PAGS WWI ELECTRONIC				MW-13 2-inch PVC x 13-foot deep w/10-foot .010 screen
658718	227661	FMR CITY SANITATION DEPT	7TH ST AND PATTISON AVE	6/1/1990	39.90522	-75.16202	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	211	PAGS WWI PAPER	MINIMAL DATA			LAT AND LONG APPROX. BASED ON 2017 GOOGLE STREET IMAGERY, THIS IS NOW THE SITE OF A SYSCO TRUCKING TERMINAL.
679576		PES	3144 Passyunk Avenue	9/3/2019	39.92363	-75.19987	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	212	PAGS WWI ELECTRONIC				
484808		Sunoco REFINERY AREA	S OF W PASSYUNK	4/15/2011	39.91472	-75.20708	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	213	PAGS WWI ELECTRONIC	UNKNOWN		W-31	
488537		ARCO		6/29/2011	39.91215	-75.19235	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	214	PAGS WWI ELECTRONIC				
496791		SUNOCO REFINERY AREA	E OF SCHUYLKILL AVE	5/11/2010	39.91556	-75.20143	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	215	PAGS WWI ELECTRONIC	UNKNOWN		S-314	
500068		City of Philadelphia	1515 Arch St, Philadelphia	7/6/2006	39.90479	-75.1773	PHILADELPHIA	GPS - Global Positioning System	19102	WELL		MONITORING	216	PAGS WWI ELECTRONIC				Well tremmie grouted, surface restored to match existing
512485		Danbro, L.P.	26th Street	6/13/2013	39.90114	-75.19694	PHILADELPHIA	GPS - Global Positioning System	19145	WELL		MONITORING	217	PAGS WWI ELECTRONIC				
512486		Danbro, L.P.	26th Street	6/13/2013	39.90158	-75.19606	PHILADELPHIA	GPS - Global Positioning System	19145	WELL		MONITORING	218	PAGS WWI ELECTRONIC				
512467		Danbro, L.P.	26th Street	6/13/2013	39.90161	-75.19622	PHILADELPHIA	GPS - Global Positioning System	19145	WELL		MONITORING	219	PAGS WWI ELECTRONIC				
594712		Evergreen Resource Management	3102 S 26th St	1/9/2015	39.9192	-75.19123	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	220	PAGS WWI ELECTRONIC				
594159		Evergreen Resource Management		12/9/2014	39.91919	-75.19563	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	221	PAGS WWI ELECTRONIC				
594710		Evergreen Resource Management	3100 S 26th St	1/7/2015	39.9193	-75.1912	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	222	PAGS WWI ELECTRONIC				
603971		Naval Yard Philadelphia	4716 S 15th St	3/30/2015	39.89292	-75.178	PHILADELPHIA	Commercial Street Atlas Program	19112	WELL		MONITORING	223	PAGS WWI ELECTRONIC				MW11 located in Tank Farm 950 - 2-inch PVC x 13-Feet Deep w/10-Feet .010 Screen
642893		Evergreen Resources Group, LLC		8/9/2016	39.92394	-75.20592	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	224	PAGS WWI ELECTRONIC				
656546	226154	PHILLIES STADIUM PARKING LOT	NEAR CNR PATTISON AVE and 11TH ST	9/11/2002	39.90508	-75.16885	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	225	PAGS WWI PAPER	MINIMAL DATA			PW-3D. LAT AND LONG APPROX.
656548	226156	PHILLIES STADIUM PARKING LOT	NEAR CNR PATTISON AVE and 11TH ST	9/16/2002	39.90553	-75.17101	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	226	PAGS WWI PAPER	MINIMAL DATA			PW-4S. LAT AND LONG APPROX.
683068	241714	FMR PASSYUNK HOMES - PHILA HOUSING A	BETWEEN FMR 23RD AND BEMBERGER TERRACES	2/22/1999	39.91367	-75.18606	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	227	PAGS WWI PAPER	MINIMAL DATA		PH-3	PH-3.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EXIS
667576		Philadelphia Energy Solutions		9/18/2018	39.9097	-75.20368	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	228	PAGS WWI ELECTRONIC	UNKNOWN		S-428	
679575		PES	3144 Passyunk Avenue	9/4/2019	39.92368	-75.19964	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	229	PAGS WWI ELECTRONIC				
679742		PES	3144 Passyunk Ave	9/11/2019	39.92383	-75.1998	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	230	PAGS WWI ELECTRONIC				
683219		PES		1/7/2020	39.90807	-75.20354	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	231	PAGS WWI ELECTRONIC				
475168		VERIZON PA LLC - S DISTRICT WORK CTR 2	1851 S 34TH ST.	5/23/2011	39.93166	-75.20069	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	232	PAGS WWI ELECTRONIC	MINIMAL DATA		MW5	MW5. LAT-LONG COORDINATES AS PROVIDED FOR THIS RECORD PLOT ON 34TH ST - MAY BE AN OFF-SITE WELL.
485077		Sunoco REFINERY AREA	S OF W PASSYUNK	4/6/2011	39.91878	-75.20344	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	233	PAGS WWI ELECTRONIC	UNKNOWN		W-1D	
552527		Evergreen Resource Management		2/4/2014	39.9208	-75.19148	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	234	PAGS WWI ELECTRONIC				
680416		PES	3144 Passyunk Ave	9/24/2019	39.92392	-75.19885	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	235	PAGS WWI ELECTRONIC				
683072	241718	FMR PASSYUNK HOMES - PHILA HOUSING A	OFF FMR TAYLOR TERRACE	2/25/1999	39.91441	-75.19002	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	236	PAGS WWI PAPER	MINIMAL DATA		HP-1	HP-1.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EXIS
683224		PES		1/8/2020	39.91034	-75.20476	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	237	PAGS WWI ELECTRONIC				
686375		City of Philadelphia	1500 Pattison Ave.	10/5/2023	39.89773	-75.19037	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	238	PAGS WWI ELECTRONIC				
688006		PES		7/27/2020	39.90512	-75.19591	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	239	PAGS WWI ELECTRONIC				
691482		Sunoco		12/10/2020	39.92034	-75.19257	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	240	PAGS WWI ELECTRONIC				
701442		United States Navy	2121 Constitution Ave	12/16/2021	39.89199	-75.18677	PHILADELPHIA	Commercial Street Atlas Program	19112	WELL	OTHER	MONITORING	241	PAGS WWI ELECTRONIC				1081MW03 - 2-inch PVC x 14-Feet Deep with 10-foot .020 Screen. Flush Mount Protective Casing Completion
488006		Sunoco REFINERY AREA	BETWEEN SCHUYLKILL AVE AND RIVER	8/25/2011	39.91698	-75.20149	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	242	PAGS WWI ELECTRONIC	UNKNOWN		MW6	
481790		SUNOCO	REFINERY AREA - E OF SCHUYLKILL AVE	5/25/2010	39.91783	-75.19931	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	243	PAGS WWI ELECTRONIC	UNKNOWN		S-298	
496787		SUNOCO REFINERY AREA	OFF LANIER NEAR RIVER	6/3/2010	39.90966	-75.21112	PHILADELPHIA	Digital Quadrangle Map		WELL		MONITORING	244	PAGS WWI ELECTRONIC	UNKNOWN		C-142	
512483		Danbro, L.P.	26th Street	6/13/2013	39.90214	-75.19578	PHILADELPHIA	GPS - Global Positioning System	19145	WELL		MONITORING	245	PAGS WWI ELECTRONIC				
552339		Evergreen Resource Management		2/20/2014	39.9209	-75.19156	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	246	PAGS WWI ELECTRONIC				
605762	218768	FMR PASSYUNK HOMES	FMR BIGLER TERRACE NEAR 23RD ST	11/24/1998	39.91377	-75.18776	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	247	PAGS WWI PAPER	MINIMAL DATA		PH-13	PH-13.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EXI
642820		Evergreen Resources Group, LLC		8/5/2016	39.9235	-75.2056	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	248	PAGS WWI ELECTRONIC				
656558	226169	PHILLIES STADIUM PARKING LOT	NEAR CNR PATTISON AVE and 7TH ST	9/18/2002	39.90406	-75.16245	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	249	PAGS WWI PAPER	MINIMAL DATA			PW-10D. LAT AND LONG APPROX.

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
673499		Philadelphia Authority for Industrial Develop	700 Pattison Avenue	1/10/2019	39.90299	-75.16282	PHILADELPHIA	Commercial Street Atlas Program	19148	WELL		MONITORING	250	PAGS WWI ELECTRONIC				Installation of 2 inch monitoring well.
679065		PES	3144 Passyunk Avenue	8/14/2019	39.92363	-75.20041	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	251	PAGS WWI ELECTRONIC				
679538		PES	3144 Passyunk Avenue	8/29/2019	39.92356	-75.20023	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	252	PAGS WWI ELECTRONIC				
679572		PES	3144 Passyunk Avenue	9/5/2019	39.92374	-75.19942	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	253	PAGS WWI ELECTRONIC				
680040		PES	3144 Passyunk Ave	9/18/2019	39.92367	-75.19979	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	254	PAGS WWI ELECTRONIC				
680415		PES	3144 Passyunk Avene	9/25/2019	39.924	-75.19946	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	255	PAGS WWI ELECTRONIC				
686435		City of Philadelphia	1500 Pattison Ave.	5/20/2020	39.90223	-75.18672	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	256	PAGS WWI ELECTRONIC				
686335		City of Philadelphia	1500 Pattison Ave.	7/22/2024	39.9017	-75.1853	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	257	PAGS WWI ELECTRONIC				
687760		PES		6/25/2020	39.90523	-75.1958	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	258	PAGS WWI ELECTRONIC				
701443		United States Navy	2121 Constitution Ave	12/14/2021	39.89239	-75.18716	PHILADELPHIA	Commercial Street Atlas Program	19112	WELL	OTHER	MONITORING	259	PAGS WWI ELECTRONIC				1082MW02 - 2-inch PVC x 14-Feet Deep with 10-foot .020 Screen. Flush Mount Protective Casing Completion
759056		Eco Materials, LLC	6110-6130 W Passyunk Ave	2/5/2024	39.9171	-75.21006	PHILADELPHIA		19153			MONITORING	260					
643617		Philadelphia Gas Works	W. Porter Street	9/12/2016	39.92252	-75.19415	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	261	PAGS WWI ELECTRONIC				MW-B 2-inch PVC x 34-Feet Deep w/ 20-Feet .010 Screen
656551	226160	PHILLIES STADIUM PARKING LOT	NEAR CNR PATTISON AVE and 7TH ST	9/17/2002	39.90561	-75.1623	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	262	PAGS WWI PAPER	MINIMAL DATA			PW-8D. LAT AND LONG APPROX.
594711		Evergreen Resource Management	3100 S 26th St	1/8/2015	39.91923	-75.19124	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	263	PAGS WWI ELECTRONIC				
594160		Evergreen Resource Management		12/8/2014	39.91953	-75.19478	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	MONITORING	264	PAGS WWI ELECTRONIC				
641639		Septa	20th & Johnston Sts	4/8/2015	39.91634	-75.18079	PHILADELPHIA	GPS - Global Positioning System	19145	WELL	OTHER	MONITORING	265	PAGS WWI ELECTRONIC		MW-4		Located in Philadelphia, From Schuylkill Expressway - Rt 76 get off at exit 349, go left onto S. Broad St and then left onto Bigler St. Right on 18th St and left onto Johnston St and the left onto 2
658621		Naval Shipyard Philadelphia	1528 Intrepid Ave	12/1/2015	39.89373	-75.17824	PHILADELPHIA	Commercial Street Atlas Program	19112	WELL	OTHER	MONITORING	266	PAGS WWI ELECTRONIC				MW-15 2-inch PVC x 13-foot deep w/10-foot .010 screen
679712		PES	3144 Passyunk Avenue	9/11/2019	39.92308	-75.20233	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	267	PAGS WWI ELECTRONIC				
683069	241715	FMR PASSYUNK HOMES - PHILA HOUSING A	OFF FMR BEMBERGER TERRACE	2/22/1999	39.91359	-75.18533	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	268	PAGS WWI PAPER	MINIMAL DATA		PH-4	PH-4.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EXIS
683070	241716	FMR PASSYUNK HOMES - PHILA HOUSING A	BETWEEN PENROSE FERRY AND S 22ND ST	2/23/1999	39.91137	-75.18618	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	269	PAGS WWI PAPER	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH5	PH-5.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EXIS
683071	241717	FMR PASSYUNK HOMES - PHILA HOUSING A	BETWEEN PENROSE FERRY AND S 22ND ST	2/26/1999	39.91137	-75.18618	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	270	PAGS WWI PAPER	MINIMAL DATA		PH-5A	PH-5A.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EXI
692645		Sunoco		1/20/2021	39.9207	-75.19097	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	271	PAGS WWI ELECTRONIC				
683252		PES		1/9/2020	39.91069	-75.2042	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	272	PAGS WWI ELECTRONIC				
693431		PES		2/25/2021	39.90981	-75.20556	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	273	PAGS WWI ELECTRONIC				
693532		Sunoco		2/23/2021	39.91991	-75.19506	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	274	PAGS WWI ELECTRONIC				
704547		PES		4/26/2022	39.90396	-75.19502	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	275	PAGS WWI ELECTRONIC				
704697		PES		2/8/2022	39.90417	-75.19448	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	276	PAGS WWI ELECTRONIC				
656550	226158	PHILLIES STADIUM PARKING LOT	NEAR CNR PATTISON AVE and 7TH ST	9/17/2002	39.90508	-75.16242	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	277	PAGS WWI PAPER	MINIMAL DATA			PW-9S. LAT AND LONG APPROX.
656552	226162	PHILLIES STADIUM PARKING LOT	NEAR CNR PATTISON AVE and 7TH ST	9/17/2002	39.90545	-75.16235	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	278	PAGS WWI PAPER	MINIMAL DATA			PW-8S. LAT AND LONG APPROX.
668750		Philadelphia Energy Solutions	3542 Schuylkill Ave	9/28/2018	39.91078	-75.20545	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	279	PAGS WWI ELECTRONIC				Monitoring well is located between river and Schuylkill Ave., within the PES refining complex and about 4000 feet south from the intersection of Frontage Road and Schuylkill Avenue.
680666		PES	3144 Passyunk Avenue	9/30/2019	39.9239	-75.19954	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	280	PAGS WWI ELECTRONIC				
680684		PES	3144 Passyunk Ave	10/7/2019	39.92385	-75.1998	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	281	PAGS WWI ELECTRONIC				
680920		PES	3144 Passyunk Ave	10/18/2019	39.92959	-75.2001	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	282	PAGS WWI ELECTRONIC				
683267		PES		1/6/2020	39.91036	-75.20424	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	283	PAGS WWI ELECTRONIC				
692861		Sunoco		2/8/2021	39.92128	-75.19189	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	284	PAGS WWI ELECTRONIC				
696335		CONOCO PHILLIPS	WEST MOYAMENSING AVENUE	6/10/2021	39.91655	-75.17341	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	285	PAGS WWI ELECTRONIC				MW-9 2-INCH PVC X 23-FEET WITH 15-FEET .0.0 SCREEN
700547		PEs		11/29/2021	39.90766	-75.21241	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	286	PAGS WWI ELECTRONIC				
754234		PIDC Philadelphia Industrial Development Co	CRESCENT DRIVE	6/4/2023	39.89604	-75.17523	PHILADELPHIA		19112		OTHER	MONITORING	287			46MW01		46SB01/46MW01 - 2" PVC X 14' BGS W/10' .0.0 SCREEN MONITORING WELL
678982		PES	3144 Passyunk Ave	8/8/2019	39.92299	-75.20204	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	288	PAGS WWI ELECTRONIC	UNKNOWN		PW-2	
678983		PES	3144 Passyunk Ave	8/7/2019	39.9229	-75.20236	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	289	PAGS WWI ELECTRONIC	UNKNOWN		PW1	

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
683077	241723	FMR PASSYUNK HOMES - PHILA HOUSING A	OFF FMR BASH ST - STREET NO LONGER EXISTS	2/19/1999	39.91218	-75.18221	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	290	PAGS WWI PAPER	MINIMAL DATA		MWS-14	MWS-14.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EX
683078	241711	FMR PASSYUNK HOMES - PHILA HOUSING A	BETWEEN FMR BASH AND ROGERS STS - STS NO LONGER EXIST	2/24/1999	39.91218	-75.18221	PHILADELPHIA	Digital Quadrangle Map		WELL	OTHER	MONITORING	291	PAGS WWI PAPER	MINIMAL DATA		MWS-15	MWS-15.LOCATED WITHIN FMR PASSYUNK HOMES NEIGHBORHOOD BUILT AFTER WW2 AS HOUSING FOR SERVICEMEN.NEIGHBORHOOD REDEVELOPED IN EARLY 2000s.MANY STREETS WHICH EXISTED AT TIME OF WELL DRILLING NO LONGER EX
708630		Wheeler Real Estate Investment Trust	2113 W Oregon Ave	9/22/2022	39.91909	-75.18356	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	292	PAGS WWI ELECTRONIC				
708631		Wheeler Real Estate Investment Trust	2119 W Oregon Ave	9/22/2022	39.91861	-75.18365	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	293	PAGS WWI ELECTRONIC				
708632		Wheeler Real Estate Investment Trust	2129 W Oregon Ave	9/22/2022	39.91878	-75.18401	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL		MONITORING	294	PAGS WWI ELECTRONIC				
754238		PIDC Philadelphia Industrial Development Co	CRESCENT DRIVE	6/17/2023	39.89635	-75.17502	PHILADELPHIA		19112		OTHER	MONITORING	295			46MW03		46SB03/46MW03 - 2" PVC X 14' BGS W/10' .0.0 SCREEN MONITORING WELL
680474		PES	3144 Passyunk Aveneu	9/24/2019	39.92303	-75.2024	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	296	PAGS WWI ELECTRONIC				
680667		PES	3144 Passyunk Ave	10/2/2019	39.92317	-75.20204	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	297	PAGS WWI ELECTRONIC				
680683		PES	3144 Passyunk Ave	10/3/2019	39.92383	-75.19999	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	298	PAGS WWI ELECTRONIC				
683232		PES		1/9/2020	39.9103	-75.20546	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	299	PAGS WWI ELECTRONIC				
692860		Sunoco		2/10/2021	39.91928	-75.19126	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	300	PAGS WWI ELECTRONIC				
693417		Sunoco		3/9/2021	39.91937	-75.19125	PHILADELPHIA	Commercial Street Atlas Program		WELL		MONITORING	301	PAGS WWI ELECTRONIC				
696334		CONOCO PHILLIPS	2700 SOUTH 15TH STREET	6/10/2021	39.9167	-75.17362	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	302	PAGS WWI ELECTRONIC				MW-8 2-INCH PVC X 23-FEET WITH 15-FEET .0.0 SCREEN
696336		CONOCO PHILLIPS	WEST MOYAMENSING AVENUE	6/10/2021	39.91656	-75.17335	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	OTHER	MONITORING	303	PAGS WWI ELECTRONIC				MW-10 2-INCH PVC X 23-FEET WITH 15-FEET .0.0 SCREEN
754235		PIDC Philadelphia Industrial Development Co	CRESCENT DRIVE	6/4/2023	39.89601	-75.17512	PHILADELPHIA		19112		OTHER	MONITORING	304			46MW02		46SB02/46MW02 - 2" PVC X 14' BGS W/10' .0.0 SCREEN MONITORING WELL
635716		SUNOCO	2601 PENROSE AVE.	2/6/2003	39.90778	-75.18929	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OBSERVATION	305	PAGS WWI ELECTRONIC				WELL ID: MW17
48203		SUN COMPANY		3/4/1994	39.91944	-75.19972	PHILADELPHIA			WELL	UNUSED	OBSERVATION	306	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 868	
29875		ATLANTIC RICHFIELD C		7/1/1979	39.92694	-75.205	PHILADELPHIA			WELL	UNUSED	OBSERVATION	307	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 778	
29877		ATLANTIC RICHFIELD C		1/1/1977	39.92722	-75.20667	PHILADELPHIA			WELL	UNUSED	OBSERVATION	308	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 779	
48199		SUN COMPANY		3/14/1994	39.90667	-75.19444	PHILADELPHIA			WELL	UNUSED	OBSERVATION	309	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 866	
30388		U S NAVY		11/15/1944	39.895	-75.1725	PHILADELPHIA			WELL	UNUSED	OBSERVATION	310	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 12	
596905		SUN COMPANY INC.	2601 PENROSE AVE.	10/15/2012	39.90765	-75.18933	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OBSERVATION	311	PAGS WWI ELECTRONIC				
636003		SUNOCO	2601 PENROSE AVE.	2/6/2003	39.90769	-75.18922	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OBSERVATION	312	PAGS WWI ELECTRONIC				WELL ID: MW19
636002		SUNOCO	2601 PENROSE AVE.	2/6/2003	39.90769	-75.18922	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OBSERVATION	313	PAGS WWI ELECTRONIC				WELL ID: MW18
48200		SUN COMPANY		3/2/1994	39.90889	-75.20528	PHILADELPHIA			WELL	UNUSED	OBSERVATION	314	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 867	
620038		Philadelphia Gas Works	2830 Ernest St	6/23/2015	39.92197	-75.19494	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	1	PAGS WWI ELECTRONIC				Air Sparge Well AS-09 2 Inch PVC x 30.5 Feet Deep w/3 Feet .020 V-Wire Screen
619970		Philadelphia Gas Works	2818 W Porter St	6/17/2015	39.92263	-75.19419	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	2	PAGS WWI ELECTRONIC				Air Sparge Well AS-28 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
619979		Philadelphia Gas Works	2521 S Newkirk St	6/15/2015	39.92138	-75.1951	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	3	PAGS WWI ELECTRONIC				Air Sparge Well AS-01 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
619980		Philadelphia Gas Works	2519 S Newkirk St	6/16/2015	39.92146	-75.19508	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	4	PAGS WWI ELECTRONIC				Air Sparge Well AS-02 2 Inch PVC x 35 Feet Deep w/3 Feet .020 V-Wire Screen
620349		Philadelphia Gas Works	2818 W Porter St	6/22/2015	39.92257	-75.19422	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	5	PAGS WWI ELECTRONIC				Soil Vapor Extraction Well SVE-06 2 Inch PVC x 20 Deep w/5 Deep .020 V-Wire Screen
620070		Philadelphia Gas Works	2401 S 28th St	6/10/2015	39.92333	-75.19389	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	6	PAGS WWI ELECTRONIC				Air Sparge Well AS-38 2 Inch PVC x 34 Feet Deep w/3 Feet .020 V-Wire Screen
620050		Philadelphia Gas Works	2830 Ernest St	6/23/2015	39.9219	-75.19499	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	7	PAGS WWI ELECTRONIC				Air Sparge Well AS-08 2 Inch PVC x 31.5 Feet Deep w/3 Feet .020 V-Wire Screen
619960		Gas Works Philadelphia	2830 Ernest St	6/22/2015	39.92187	-75.19497	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	8	PAGS WWI ELECTRONIC				Air Sparge Well - AS-07 2" PVC x 31'' Deep w/3'' .020 V-Wire Screen
619967		Philadelphia Gas Works	2822 W Porter St	6/23/2015	39.92257	-75.1944	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	9	PAGS WWI ELECTRONIC				Air Sparge Well AS-24 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
620292		Philadelphia Gas Works	2822 W Porter St	6/25/2015	39.92259	-75.19439	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	10	PAGS WWI ELECTRONIC				Air Sparge Well AS-23 2 Inch PVC x 32 Feet Deep w/3 Feet .020 V-Wire Screen
620294		Philadelphia Gas Works	2822 W Porter St	6/30/2015	39.9226	-75.19474	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	11	PAGS WWI ELECTRONIC				Air Sparge Well AS-18 2 Inch PVC x 35.5 Feet Deep w/3 Feet .020 V-Wire Screen
620056		Philadelphia Gas Works	2830 Ernest St	6/19/2015	39.92175	-75.195	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	12	PAGS WWI ELECTRONIC				Air Sparge Well AS-06 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
620090		Philadelphia Gas Works	2822 W Porter St	6/29/2015	39.92262	-75.19458	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	13	PAGS WWI ELECTRONIC				Air Sparge Well AS-20 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
620055		Philadelphia Gas Works	2830 Ernest St	6/18/2015	39.9216	-75.19504	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	14	PAGS WWI ELECTRONIC				Air Sparge Well AS-04 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
620057		Philadelphia Gas Works	2830 Ernest St	6/26/2015	39.92217	-75.19492	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	15	PAGS WWI ELECTRONIC				Air Sparge Well AS-13 2 Inch PVC x 31 Feet Deep w/3 Feet .020 V-Wire Screen
619973		Philadelphia Gas Works	2401 S 28th St	6/17/2015	39.92304	-75.19408	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	16	PAGS WWI ELECTRONIC				Air Sparge Well AS-34 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
620291		Philadelphia Gas Works	2818 W Porter St	6/25/2015	39.92258	-75.19427	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	17	PAGS WWI ELECTRONIC				Air Sparge Well AS-22 2 Inch PVC x 34 Feet Deep w/3 Feet .020 V-Wire Screen
620278		Philadelphia Gas Works	2830 Ernest St	6/25/2015	39.92219	-75.19492	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	18	PAGS WWI ELECTRONIC				Soil Vapor Extraction Well SVE-03 2 Inch PVC x 18.5 Feet Deep w/5 Feet .020 V-Wire Screen
620342		Philadelphia Gas Works	2830 Ernest St	6/16/2015	39.92171	-75.19509	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	19	PAGS WWI ELECTRONIC				Soil Vapor Extraction Well SVE-01 2 Inch PVC x 19 Feet Deep w/5 Feet .020 V-Wire Screen
620059		Philadelphia Gas Works	2830 Ernest St	6/26/2015	39.92227	-75.19492	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	20	PAGS WWI ELECTRONIC				Air Sparge Well AS-14 2 Inch PVC x 31 Feet Deep w/3 Feet .020 V-Wire Screen
620068		Philadelphia Gas Works	2818 W Porter St	6/12/2015	39.92297	-75.19414	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	21	PAGS WWI ELECTRONIC				Air Sparge Well AS-32 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
620327		Philadelphia Gas Works	2822 W Porter St	6/30/2015	39.92257	-75.19477	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	22	PAGS WWI ELECTRONIC				Air Sparge Well AS-17 2 Inch PVC x 35.5 Feet Deep w/3 Feet .020 V-Wire Screen
643400		Evergreen Resources Group, LLC		8/23/2016	39.92419	-75.19915	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	OTHER	23	PAGS WWI ELECTRONIC				
620051		Philadelphia Gas Works	2822 W Porter St	6/30/2015	39.92266	-75.19467	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	24	PAGS WWI ELECTRONIC				Air Sparge Well AS-19 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
620069		Philadelphia Gas Works	2401 S 28th St	6/10/2015	39.92336	-75.19383	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	25	PAGS WWI ELECTRONIC				Air Sparge Well AS-37 2 Inch PVC x 34 Feet Deep w/3 Feet .020 V-Wire Screen
620078		Philadelphia Gas Works	2511 S Newkirk St	6/17/2015	39.92154	-75.19506	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	26	PAGS WWI ELECTRONIC				Air Sparge Well AS-03 2 Inch PVC x 34 Feet Deep w/3 Feet .020 V-Wire Screen
620301		Philadelphia Gas Works	2822 W Porter St	6/26/2015	39.92265	-75.1946	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	27	PAGS WWI ELECTRONIC				Soil Vapor Extraction Well SVE-05 2 Inch PVC x 21 Feet Deep w/5 Feet .020 V-Wire Screen
620071		Philadelphia Gas Works	2822 W Porter St	6/26/2015	39.92262	-75.19447	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	28	PAGS WWI ELECTRONIC				Air Sparge Well AS-21 2 Inch PVC x 35.5 Feet Deep w/3 Feet .020 V-Wire Screen
619971		Philadelphia Gas Works	2822 W Porter St	6/16/2015	39.92279	-75.19445	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	29	PAGS WWI ELECTRONIC				Air Sparge Well AS-31 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
619974		Philadelphia Gas Works	2401 S 28th St	6/11/2015	39.92314	-75.19405	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	30	PAGS WWI ELECTRONIC				Air Sparge Well AS-35 2 Inch PVC x 33 Deep Deep w/3 Deep .020 V-Wire Screen
619972		Philadelphia Gas Works	2401 S 28th St	6/12/2015	39.92298	-75.19397	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	31	PAGS WWI ELECTRONIC				Air Sparge Well AS-33 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
619968		Philadelphia Gas Works	2820 W Porter St	6/23/2015	39.92255	-75.19433	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	32	PAGS WWI ELECTRONIC				Air Sparge Well AS-25 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
619959		Philadelphia Gas Works	2822 W Porter St	6/29/2015	39.92249	-75.19487	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	33	PAGS WWI ELECTRONIC				Air Sparge Well AS-16 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
620002		Philadelphia Gas Works	2830 Ernest St	6/24/2015	39.92203	-75.19494	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	34	PAGS WWI ELECTRONIC				Air Sparge Well AS-10 2 Inch PVC x 32 Feet Deep w/3 Feet .020 V-Wire Screen
619975		Philadelphia Gas Works	2401 S 28th St	6/11/2015	39.92321	-75.19385	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	35	PAGS WWI ELECTRONIC				Air Sparge Well AS-36 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
620277		Philadelphia Gas Works	2830 Ernest St	6/22/2015	39.92199	-75.19494	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	36	PAGS WWI ELECTRONIC				Soil Vapor Extraction Well SVE-02 2 Inch PVC x 20 Feet Deep w/5 Feet .020 V-Wire Screen
620293		Philadelphia Gas Works	2818 W Porter St	6/22/2015	39.92258	-75.19419	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	37	PAGS WWI ELECTRONIC				Air Sparge Well AS-26 2 Inch PVC x 35.5 Feet Deep w/3 Feet .020 V-Wire Screen
620300		Philadelphia Gas Works	2822 W Porter St	6/30/2015	39.92242	-75.19491	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	38	PAGS WWI ELECTRONIC				Soil Vapor Extraction Well SVE-04 2 Inch PVC x 22 Feet Deep w/5 Feet .020 V-Wire Screen
643399		Evergreen Resources Group, LLC		8/17/2016	39.9217	-75.20739	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	OTHER	39	PAGS WWI ELECTRONIC				
620003		Philadelphia Gas Works	2830 Ernest St	6/25/2015	39.92225	-75.19493	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	40	PAGS WWI ELECTRONIC				Air Sparge Well AS-12 2 Inch PVC x 32 Feet Deep w/3 Feet .020 V-Wire Screen
619958		Philadelphia Gas Works	2822 W Porter St	6/29/2015	39.92231	-75.1949	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	41	PAGS WWI ELECTRONIC				Air Sparge Well AS-15 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
619969		Philadelphia Gas Works	2820 W Porter St	6/18/2015	39.92258	-75.1943	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	42	PAGS WWI ELECTRONIC				Air Sparge Well AS-27 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
620351		Philadelphia Gas Works	2401 S 28th St	6/15/2015	39.9232	-75.19409	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	43	PAGS WWI ELECTRONIC				Soil Vapor Extraction Well SVE-08 2 Inch PVC x 20 Feet Deep w/5 Feet .020 V-Wire Screen
642822		Evergreen Resources Group, LLC		8/4/2016	39.92395	-75.2059	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	OTHER	44	PAGS WWI ELECTRONIC				
620328		Philadelphia Gas Works	2830 Ernest St	6/22/2015	39.92193	-75.19496	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	45	PAGS WWI ELECTRONIC				Air Sparge Well AS-07 2 Inch PVC x 31 Feet Deep w/3 Feet .020 V-Wire Screen
620350		Philadelphia Gas Works	2818 W Porter St	6/18/2015	39.92268	-75.19418	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	46	PAGS WWI ELECTRONIC				Soil Vapor Extraction Well SVE-07 2 Inch PVC x 20 Feet Deep w/5 Feet .020 V-Wire Screen
620064		Philadelphia Gas Works	2830 Ernest St	6/19/2015	39.92169	-75.19503	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	47	PAGS WWI ELECTRONIC				Air Sparge Well AS-05 2 Inch PVC x 34 Feet Deep w/3 Feet .020 V-Wire Screen
620080		Philadelphia Gas Works	2814 W Porter St	6/16/2015	39.92271	-75.19409	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	48	PAGS WWI ELECTRONIC				Air Sparge Well AS-30 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
620348		Philadelphia Gas Works	2401 S 28th St	6/29/2015	39.92336	-75.19393	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	49	PAGS WWI ELECTRONIC				Soil Vapor Extraction Well SVE-09 2 Inch PVC x 21 Feet Deep w/5 Feet .020 V-Wire Screen
653505		Evergreen Resources Group LLC		8/29/2017	39.93021	-75.20081	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	OTHER	50	PAGS WWI ELECTRONIC				
620079		Philadelphia Gas Works	2814 W Porter St	6/17/2015	39.92274	-75.1941	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	51	PAGS WWI ELECTRONIC				Air Sparge Well AS-29 2 Inch PVC x 33 Feet Deep w/3 Feet .020 V-Wire Screen
620048		Philadelphia Gas Works	2830 Ernest St	6/24/2015	39.92216	-75.19493	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	OTHER	52	PAGS WWI ELECTRONIC				Air Sparge Well AS-11 2 Inch PVC x 30 Feet Deep w/3 Feet. 020 V-Wire Screen
643401		Evergreen Resources Group, LLC		7/25/2016	39.92517	-75.20346	PHILADELPHIA	Commercial Street Atlas Program		WELL	OTHER	OTHER	53	PAGS WWI ELECTRONIC				
650855		USACE	S 20th and Hartranft Streets	4/21/2017	39.90863	-75.18284	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	TEST	1	PAGS WWI ELECTRONIC				NOVA DW-14
650469		USACE	Pattison Avenue and S 20th Street	4/6/2017	39.90686	-75.1852	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	TEST	2	PAGS WWI ELECTRONIC				FDR DW-15
30431		PHILA GAS WORKS		1/1/1915	39.92278	-75.19972	PHILADELPHIA			WELL	UNUSED	UNUSED	1	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 32	
29825		COLONIAL THEATER		6/3/1936	39.91972	-75.16528	PHILADELPHIA			WELL	UNUSED	UNUSED	2	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 475	

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
29771		ROOSEVELT PARK		1/1/1919	39.90222	-75.17778	PHILADELPHIA			WELL	UNUSED	UNUSED	3	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 63	
30391		U S NAVY		6/20/1942	39.89667	-75.18306	PHILADELPHIA			WELL	UNUSED	UNUSED	4	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 6	
30392		U S NAVY		10/6/1952	39.89694	-75.17167	PHILADELPHIA			WELL	UNUSED	UNUSED	5	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 28	
30439		ATLANTIC REFINING CO		2/15/1946	39.92583	-75.2025	PHILADELPHIA			WELL	UNUSED	UNUSED	6	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 83	
30422		GEORGE YOUNG CO		1/1/1912	39.9175	-75.18222	PHILADELPHIA			WELL	UNUSED	UNUSED	7	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 87	
637492		City of Phila	1800 Bigler Street	2/3/2016	39.91594	-75.17836	PHILADELPHIA	Commercial Street Atlas Program	19145	WELL	UNUSED	UNUSED	8	PAGS WWI ELECTRONIC				3 wells, each 505 feet deep for closed loop geothermal system for new building in the Barry Playground. Depth to Bedrock is the same on wells two and three. Steel Casing was installed to 146 feet on
30442		PRESIDENT CATERERS		6/1/1936	39.92611	-75.185	PHILADELPHIA			WELL	UNUSED	UNUSED	9	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 124	
424470		SUNOCO	REFINERY AREA	5/15/2008	39.92361	-75.21	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	1	PAGS WWI ELECTRONIC	UNKNOWN		N-136	
424471		SUNOCO	REFINERY AREA	5/16/2008	39.92306	-75.20389	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	2	PAGS WWI ELECTRONIC	UNKNOWN		N-130	
424487		SUNOCO	REFINERY AREA	6/16/2008	39.92889	-75.19917	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	3	PAGS WWI ELECTRONIC	UNKNOWN		N-101	
424503		SUNOCO	REFINERY AREA	5/13/2008	39.92472	-75.20667	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	4	PAGS WWI ELECTRONIC	UNKNOWN		N-132	
424504		SUNOCO	REFINERY AREA - OFF VARE AVE	5/22/2008	39.92583	-75.19444	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	5	PAGS WWI ELECTRONIC	UNKNOWN		N-134	
424505		SUNOCO	REFINERY AREA	5/29/2008	39.92806	-75.20222	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	6	PAGS WWI ELECTRONIC	UNKNOWN		N-108	
424570		SUNOCO	REFINERY AREA	6/18/2008	39.92833	-75.20111	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	7	PAGS WWI ELECTRONIC	UNKNOWN		N-104	
424571		SUNOCO	REFINERY AREA	6/18/2008	39.9275	-75.20111	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	8	PAGS WWI ELECTRONIC	UNKNOWN		N-105	
478852		SUNOCO	REFINERY AREA - OFF S 26TH ST	7/30/2008	39.91917	-75.19167	PHILADELPHIA	Commercial Street Atlas Program		WELL		WITHDRAWAL	9	PAGS WWI ELECTRONIC	UNKNOWN		S-272	
478853		SUNOCO	REFINERY AREA - OFF S 26TH ST	7/31/2008	39.91917	-75.19167	PHILADELPHIA	Commercial Street Atlas Program		WELL		WITHDRAWAL	10	PAGS WWI ELECTRONIC	UNKNOWN		S-273	
48362		SUN COMPANY		8/9/1995	39.915	-75.20306	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	11	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 883	
424461		SUNOCO	REFINERY AREA	5/14/2008	39.92722	-75.2075	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	12	PAGS WWI ELECTRONIC	UNKNOWN		N-112	
424478		SUNOCO	REFINERY AREA - ALONG RR W OF VARE AVE	6/6/2008	39.92611	-75.20139	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	13	PAGS WWI ELECTRONIC	UNKNOWN		N-121	
424479		SUNOCO	REFINERY AREA	6/9/2008	39.92778	-75.20056	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	14	PAGS WWI ELECTRONIC	UNKNOWN		N-103	
424512		SUNOCO	REFINERY AREA	6/5/2008	39.92861	-75.20194	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	15	PAGS WWI ELECTRONIC	UNKNOWN		N-106	
424513		SUNOCO	REFINERY AREA	6/5/2008	39.92833	-75.19972	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	16	PAGS WWI ELECTRONIC	UNKNOWN		N-102	
48202		SUN COMPANY		8/10/1995	39.91556	-75.20278	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	17	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 880	
48368		SUN COMPANY		8/9/1995	39.91556	-75.20278	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	18	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 881	
424473		SUNOCO	REFINERY AREA	5/20/2008	39.92417	-75.20139	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	19	PAGS WWI ELECTRONIC	UNKNOWN		N-128	
478648		SUNOCO	REFINERY AREA - OFF S 26TH ST	7/29/2008	39.91944	-75.19167	PHILADELPHIA	Commercial Street Atlas Program		WELL		WITHDRAWAL	20	PAGS WWI ELECTRONIC	UNKNOWN		S-271	
48367		SUN COMPANY		5/9/1994	39.91556	-75.20111	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	21	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 876	
48201		SUN COMPANY		8/18/1995	39.91556	-75.20278	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	22	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 879	
48383		SUN COMPANY			39.92361	-75.20028	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	23	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 891	
48385		SUN COMPANY		5/11/1994	39.92694	-75.20056	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	24	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 897	
424472		SUNOCO	REFINERY AREA	5/20/2008	39.925	-75.20333	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	25	PAGS WWI ELECTRONIC	UNKNOWN		N-116	
424490		SUNOCO	REFINERY AREA	7/9/2008	39.92722	-75.20722	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	26	PAGS WWI ELECTRONIC	UNKNOWN		N-109	
424506		SUNOCO	REFINERY AREA	5/29/2008	39.92528	-75.20167	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	27	PAGS WWI ELECTRONIC	UNKNOWN		N-126	
424572		SUNOCO	REFINERY AREA - W OF VARE AVE	6/20/2008	39.92833	-75.20194	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	28	PAGS WWI ELECTRONIC	UNKNOWN		N-107	
48374		SUN COMPANY		5/26/1994	39.91972	-75.19056	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	29	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 902	
48390		SUN COMPANY		5/10/1994	39.92694	-75.20333	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	30	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 898	
478667		SUNOCO	REFINERY AREA - OFF S 26TH ST	8/27/2008	39.91583	-75.19528	PHILADELPHIA	Commercial Street Atlas Program		WELL		WITHDRAWAL	31	PAGS WWI ELECTRONIC	UNKNOWN		S-269	
30398		GULF OIL CORP		1/1/1946	39.90278	-75.20194	PHILADELPHIA			WELL	INDUSTRIA	WITHDRAWAL	32	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 43	
48364		SUN COMPANY		5/10/1994	39.91528	-75.20028	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	33	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 877	
48380		SUN COMPANY		10/19/1994	39.92306	-75.20167	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	34	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 889	

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
424477		SUNOCO	REFINERY AREA	5/22/2008	39.92639	-75.19889	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	35	PAGS WWI ELECTRONIC	UNKNOWN		N-120	
424511		SUNOCO	REFINERY AREA	6/4/2008	39.92667	-75.2025	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	36	PAGS WWI ELECTRONIC	UNKNOWN		N-117	
424577		SUNOCO	REFINERY AREA	5/13/2008	39.92611	-75.20778	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	37	PAGS WWI ELECTRONIC	UNKNOWN		N-114	
48366		SUN COMPANY		8/3/1995	39.91528	-75.20278	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	38	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 882	
291859	243039	THE PREPARATORY CHARTER HIGH SCHOOL	1928 POINT BREEZE AVE	10/1/1994	39.92849	-75.18673	PHILADELPHIA	Digital Quadrangle Map	19145	WELL	OTHER	WITHDRAWAL	39	PAGS WWI PAPER	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)			DRILLER'S RECORD INDICATES WELL IS USED FOR ON-SITE LAUNDRY. LAT-LONG IS FOR THE SCHOOL BLDG ITSELF. WELL WOULD NEED TO BE FIELD LOCATED FOR ITS PRECISE LOCATION.
424457		SUNOCO	REFINERY AREA	6/18/2008	39.92472	-75.20917	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	40	PAGS WWI ELECTRONIC	UNKNOWN		N-131	
424475		SUNOCO	REFINERY AREA	5/21/2008	39.925	-75.19639	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	41	PAGS WWI ELECTRONIC	UNKNOWN		N-124	
424507		SUNOCO	REFINERY AREA	5/29/2008	39.9275	-75.2	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	42	PAGS WWI ELECTRONIC	UNKNOWN		N-119	
48360		SUN COMPANY		8/2/1995	39.91444	-75.20306	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	43	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 884	
48376		SUN COMPANY		6/1/1995	39.92194	-75.20778	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	44	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 909	
48392		SUN COMPANY		5/11/1994	39.92722	-75.20222	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	45	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 894	
424565		SUNOCO	REFINERY AREA	7/1/2008	39.92361	-75.20167	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	46	PAGS WWI ELECTRONIC	UNKNOWN		N-129	
479415		SUNOCO	REFINERY AREA - OFF S 26TH ST	8/12/2008	39.91889	-75.19167	PHILADELPHIA	Commercial Street Atlas Program		WELL		WITHDRAWAL	47	PAGS WWI ELECTRONIC	UNKNOWN		S-276	
48371		SUN COMPANY		7/1/1994	39.91778	-75.19167	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	48	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 905	
48373		SUN COMPANY		9/9/1993	39.91833	-75.19167	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	49	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 903	
48387		SUN COMPANY		5/13/1994	39.92694	-75.20111	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	50	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 896	
48389		SUN COMPANY		6/2/1995	39.92694	-75.20222	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	51	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 899	
424468		SUNOCO	REFINERY AREA	5/15/2008	39.92194	-75.20944	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	52	PAGS WWI ELECTRONIC	UNKNOWN		N-133	
479770		SUNOCO	REFINERY AREA - OFF S 26TH ST	8/5/2008	39.91889	-75.19167	PHILADELPHIA	Commercial Street Atlas Program		WELL		WITHDRAWAL	53	PAGS WWI ELECTRONIC	UNKNOWN		S-274	
478886		SUNOCO	REFINERY AREA - OFF S 26TH ST	8/27/2008	39.91556	-75.19361	PHILADELPHIA	Commercial Street Atlas Program		WELL		WITHDRAWAL	54	PAGS WWI ELECTRONIC	UNKNOWN		S-270	
48372		SUN COMPANY		5/24/1994	39.91806	-75.19139	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	55	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 904	
424509		SUNOCO	REFINERY AREA	5/23/2008	39.92667	-75.20167	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	56	PAGS WWI ELECTRONIC	UNKNOWN		N-118	
48370		SUN COMPANY		8/25/1994	39.91722	-75.19167	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	57	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 906	
48386		SUN COMPANY		6/5/1995	39.92694	-75.20083	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	58	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 901	
48388		SUN COMPANY		6/5/1995	39.92694	-75.20139	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	59	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 900	
424469		SUNOCO	REFINERY AREA	5/15/2008	39.92278	-75.20972	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	60	PAGS WWI ELECTRONIC	UNKNOWN		N-135	
510374		Geosyntec Consultants		5/8/2013	39.90555	-75.19301	PHILADELPHIA	Commercial Street Atlas Program		WELL		WITHDRAWAL	61	PAGS WWI ELECTRONIC				Installed two additional wells at this site with similar geologics (MW-2 to 20' and MW-3 to 20')
29801		ARCO PETROLEUM PROD CO		5/28/1987	39.90944	-75.19861	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	62	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 840	PETROLEUM PRODUCT RECOVERY WELL
29808		ARCO PETROLEUM PROD CO		6/24/1987	39.91083	-75.19583	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	63	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 838	
48369		SUN COMPANY		5/20/1994	39.91639	-75.19167	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	64	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 907	
48378		SUN COMPANY		5/17/1994	39.92278	-75.20278	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	65	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 887	
48394		SUN COMPANY		11/5/1981	39.9275	-75.20667	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	66	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 892	
478889		SUNOCO	REFINERY AREA - OFF S 26TH ST	8/13/2008	39.91806	-75.19167	PHILADELPHIA	Commercial Street Atlas Program		WELL		WITHDRAWAL	67	PAGS WWI ELECTRONIC	UNKNOWN		S-277	
424467		SUNOCO	REFINERY AREA	5/15/2008	39.92528	-75.20417	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	68	PAGS WWI ELECTRONIC	UNKNOWN		N-115	
424474		SUNOCO	REFINERY AREA	5/21/2008	39.92583	-75.20139	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	69	PAGS WWI ELECTRONIC	UNKNOWN		N-122	
424508		SUNOCO	REFINERY AREA	5/28/2008	39.92361	-75.20278	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	70	PAGS WWI ELECTRONIC	UNKNOWN		N-127	
424576		SUNOCO	REFINERY AREA	6/17/2008	39.92417	-75.20028	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	71	PAGS WWI ELECTRONIC	UNKNOWN		N-125	
692600		Sunoco		1/7/2021	39.9206	-75.19285	PHILADELPHIA	Commercial Street Atlas Program		WELL		WITHDRAWAL	72	PAGS WWI ELECTRONIC				
692601		Sunoco		1/26/2021	39.92082	-75.19175	PHILADELPHIA	Commercial Street Atlas Program		WELL		WITHDRAWAL	73	PAGS WWI ELECTRONIC				
30399		GULF OIL CORP		3/1/1946	39.90278	-75.20194	PHILADELPHIA			WELL	INDUSTRIA	WITHDRAWAL	74	USGS - GWSI	FIELD CHECKED BY REPORTING AGENCY (PaDAg pest. survey)		PH 44	
48363		SUN COMPANY		5/9/1994	39.91528	-75.19972	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	75	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 878	

Appendix F
PAGWIS Database Search
Search date: 25 August 2025
Search Radius: One-mile from Site Boundary

PA Well ID	Paper Record ID (if available)	Original Owner	Well Address	Date Drilled	Latitude (DD)	Longitude (DD)	County / Municipality	Location Method	Well Zip Code	Site Type	Water Use	Site Use	Count per Site Use	Data Source	Data Reliability	Permit #	Local Well ID	Remarks
48365		SUN COMPANY		5/5/1994	39.91528	-75.20139	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	76	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 875	
48379		SUN COMPANY		5/18/1994	39.92278	-75.20333	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	77	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 886	
48381		SUN COMPANY		5/19/1994	39.92306	-75.20222	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	78	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 888	
424476		SUNOCO	REFINERY AREA	5/21/2008	39.925	-75.1975	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	79	PAGS WWI ELECTRONIC	UNKNOWN		N-123	
424510		SUNOCO	REFINERY AREA - OFF MAIDEN LANE	6/2/2008	39.93	-75.20028	PHILADELPHIA	GPS - Global Positioning System		WELL		WITHDRAWAL	80	PAGS WWI ELECTRONIC	UNKNOWN		N-98	
48382		SUN COMPANY		10/11/1994	39.92333	-75.20083	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	81	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 890	
474515		SUNOCO	REFINERY AREA - OFF S 26TH ST	8/5/2008	39.91889	-75.19167	PHILADELPHIA	Commercial Street Atlas Program		WELL		WITHDRAWAL	82	PAGS WWI ELECTRONIC	UNKNOWN		S-275	
29802		ARCO PETROLEUM PROD CO		5/27/1987	39.90944	-75.19917	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	83	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 839	
48391		SUN COMPANY		5/12/1994	39.92722	-75.20167	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	84	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 895	
48393		SUN COMPANY		5/12/1994	39.92722	-75.20278	PHILADELPHIA			WELL	OTHER	WITHDRAWAL	85	USGS - GWSI	NOT FLD CHECKED, RPRTING AGENCY CONSIDERS IT OK (DEP WSM, WWI web)		PH 893	
692563		Sunoco		1/13/2021	39.92068	-75.19178	PHILADELPHIA	Commercial Street Atlas Program		WELL		WITHDRAWAL	86	PAGS WWI ELECTRONIC				
692636		Sunoco		1/12/2021	39.92061	-75.1914	PHILADELPHIA	Commercial Street Atlas Program		WELL		WITHDRAWAL	87	PAGS WWI ELECTRONIC				
756848		PES Owner		6/29/2023	39.90897	-75.20484	PHILADELPHIA		19145				1					
760959		Sun Company LLC	2601 Penrose Avenue		39.90779	-75.18928	PHILADELPHIA		19145				2					
770346		CITY OF PHILA, DEPT OF PUBLIC PROP		4/11/2025	39.93411	-75.17997	PHILADELPHIA		19146				3			MW004		
754229		Sunoco Evergreen Subsidiary		6/26/2023	39.92186	-75.19346	PHILADELPHIA		19145				4					Roto Sonic Drilling Sand from 19' to 50'
756846	250512	PES Owner		7/23/2024	39.90965	-75.20435	PHILADELPHIA		19145				5			s-509		Well was tremie grouted in place
774226		PES		12/12/2024	39.91411	-75.19251	PHILADELPHIA		19145				6					
774213		PES		12/3/2024	39.91356	-75.19258	PHILADELPHIA		19145				7					
754223		Sunoco Evergreen Subsidiary		6/16/2023	39.92131	-75.19146	PHILADELPHIA		19145				8					Roto Sonic Drilling Sand from 18' to 55'
774217		PES		12/9/2024	39.9135	-75.19258	PHILADELPHIA		19145				9					
774224		PES		12/12/2024	39.91251	-75.1932	PHILADELPHIA		19145				10					
754264		Sunoco Evergreen Subsidiary		6/21/2023	39.92194	-75.19251	PHILADELPHIA		19145				11					Roto Sonic Drilling Sand from 23' to 50'
759060		Eco Materials, LLC	6110-6130 W Passyunk Ave	2/5/2024	39.91744	-75.20949	PHILADELPHIA		19153				12					
754182		US Government	CRESCENT DRIVE		39.89656	-75.17488	PHILADELPHIA		19112				13			46MW01		
754232		Sonoco Evergreen Subsidiary			39.92185	-75.19342	PHILADELPHIA		19145				14					
774209		PES		12/16/2024	39.91469	-75.19585	PHILADELPHIA		19145				15					
774214		PES		12/6/2024	39.91351	-75.19258	PHILADELPHIA		19145				16					
756843		PES Owner		6/27/2023	39.91035	-75.20523	PHILADELPHIA		19145				17					
759042		Eco Materials, LLC	6110-6130 W Passyunk Ave		39.91713	-75.21002	PHILADELPHIA		19153				18					
760996		Sun Company Inc.	2601 Penrose Avenue	4/15/2024	39.90766	-75.18902	PHILADELPHIA		19145				19					Monitoring well abandonment, restore surface to match existing. Original well installed by Eichelbergers, Inc. Refer to PA Well ID 636003 for the 2-6-2003 installation report.
760987		Sun Company Inc.	2601 Penrose Avenue	4/15/2024	39.90784	-75.18909	PHILADELPHIA		19145				20					Monitoring well abandonment, restore surface to match existing. Original well installed by BL Myers.
774218		PES		12/11/2024	39.91341	-75.1926	PHILADELPHIA		19145				21					
760968		Sun Company Inc	2601 Penrose Avenue	4/15/2024	39.90805	-75.18894	PHILADELPHIA		19145				22					Monitoring well abandonment, restore surface to match existing. Original well installed by BL Myers Inc.
760995		Sun Company Inc	2601 Penrose Avenue	4/15/2024	39.90784	-75.18905	PHILADELPHIA		19145				23					Monitoring well abandonment, restore surface to match existing. Original well installed by Eichelbergers Inc. Refer to PA Well ID 636002 for 2-6-2003 installation report.
760963		Sun Company Inc	2601 Penrose Avenue	4/15/2024	39.90758	-75.18914	PHILADELPHIA		19145				24					Monitoring well abandonment, restore surface to match existing. Original well installed by BL Myers Inc.
760972		Sun Company Inc	2601 Penrose Avenue	4/15/2024	39.90779	-75.18943	PHILADELPHIA		19145				25					Monitoring well abandonment, restore surface to match existing. Original well installed by Lutz Environmental.
760986		Sun Company Inc	2601 Penrose Avenue	4/15/2024	39.90786	-75.18933	PHILADELPHIA		19145				26					Monitoring well abandonment, restore surface to match existing. Original well installed by BL Myers Inc.
760988		Sun Company Inc	2601 Penrose Avenue	4/15/2024	39.9078	-75.18942	PHILADELPHIA		19145				27					Monitoring well abandonment, restore surface to match existing. Original well installed by BL Myers Inc.
760961		Sun Company Inc	2601 Penrose Avenue	4/15/2024	39.90774	-75.18932	PHILADELPHIA		19145				28					Monitoring well abandonment, restore surface to match existing. Original well installed by BL Myers Inc.
754225		Sunoco Evergreen Subsidiary		6/20/2023	39.92157	-75.19227	PHILADELPHIA		19145				29					Roto Sonic Drilling Sand from 66' to 100'
760975		Sun Company Inc	2601 Penrose Avenue	4/15/2024	39.90781	-75.18928	PHILADELPHIA		19145				30					Monitoring well abandonment, restore surface to match existing. Original well installed by BL Myers Inc. in 1999 and overdrilled by Eichelbergers in 2012. Refer to PA Well ID 596905 for 10-15-2012 installation report.
760960		Sun Company Inc	2601 Penrose Avenue		39.90773	-75.18933	PHILADELPHIA		19145				31					
760973		Sun Company Inc	2601 Penrose Avenue	4/15/2024	39.90768	-75.18941	PHILADELPHIA		19145				32					Monitoring well abandonment, restore surface to match existing. Original well installed by Lutz Environmental.
760974		Sun Company Inc	2601 Penrose Avenue	4/15/2024	39.90769	-75.18926	PHILADELPHIA		19145				33					Monitoring well abandonment, restore surface to match existing. Original well installed by BL Myers Inc.
760967		Sun Company Inc	2601 Penrose Avenue		39.90805	-75.18896	PHILADELPHIA		19145				34					
760985		Sun Company Inc	2601 Penrose Avenue		39.90786	-75.18933	PHILADELPHIA		19145				35					
754262		Sunoco Evergreen Subsidiary		6/22/2023	39.92148	-75.19289	PHILADELPHIA		19145				36					Roto Sonic Drilling Sand from 18' to 50'
760994		Sun Company Inc	2601 Penrose Avenue	4/15/2024	39.90793	-75.18897	PHILADELPHIA		19145				37					Monitoring well abandonment, restore surface to match existing. Original well installed by Eichelbergers. Refer to PA Well ID 635716 for 2-6-2003 installation report.
760962		Sun Company Inc	2601 Penrose Avenue	4/15/2024	39.90791	-75.18924	PHILADELPHIA		19145				38					Monitoring well abandonment, restore surface to match existing. Original well installed by BL Myers Inc.
760969		Sun Company Inc	2601 Penrose Avenue		39.90779	-75.18943	PHILADELPHIA		19145				39					
766712		PES owner		7/23/2024	39.90968	-75.20467	PHILADELPHIA		19145				40			s-485		demolition

Appendix G

Hydrocarbon-Impacted Soils
Memo

VERINA Consulting Group, LLC | PARS ENVIRONMENTAL a Montrose Environmental Group company

A JOINT VENTURE

RIR/CP Response to Comments
PADEP Deficiency #1 - Hydrocarbon-Impacted Soils
Former Defense Supply Center Philadelphia (DSCP)
Philadelphia, Pennsylvania

Prepared for: **United States Army Corps of Engineers, Philadelphia District**

Prepared by: [redacted]

Contract/TO: [redacted]

June 2025

[redacted]

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1.0 INTRODUCTION AND SCOPE OF WORK

This technical memorandum presents a consolidated view of available historical and recent analytical data collected from soils at the Former Defense Supply Center, Philadelphia (DSCP, the "Site") as it relates to characterization of the soil media in support of the Site's progress through the Pennsylvania Department of Environmental Protection (PADEP) Land Recycling Program (Act 2). The memo was prepared in response to Deficiency #1 provided by the PADEP in its "Disapproval of Combined Remedial Investigation Report/Cleanup Plan Defense Supply Center Philadelphia" memorandum, dated 13 September 22, 2022 (Arcadis, 2022). Deficiency #1 reads:

> ***Section 6.5.1.3 Hydrocarbon-Impacted Soils****. Vadose zone contamination (both the smear zone and above) has not been adequately characterized. Soil analytical data, soil sample locations, comparison of soil analytical data to present Statewide health standard medium specific concentrations (MSCs), and soil boring logs are absent. Graphical presentation of the extent of soil contamination was not included. The conceptual site model must include a description of the sources and the contamination in all media of concern. (25 Pa. Code § 250.408(b)(1) and (2), (c), and (d)).*

The Verina-PARS Joint Venture (the JV) was contracted by the United States Army Corps of Engineers – Philadelphia District (CENAP) to "…review historic files, hardcopy and electronic, to obtain reports containing soil analytical data, soil boring and well logs, and well completion reports…" to address Deficiency #1, as part of The Performance Work Statement (PWS) Task Order W912BU22D0003, contract W912BU23F0058, dated 07 July 2023.

As part of a separate contract action, the JV was tasked with collecting soil samples from a series of subsurface soil borings being drilled at the site ("recent data" or "2024 data"). A summary and review of both the historical data and soil data collected in 2024 are presented herein and discussed with respect to PADEP medium-specific concentrations (MSCs) and United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) as directed by the PADEP.

2.0 DATA REVIEW APPROACH

Historical DSCP reports were reviewed to identify soil data that would support characterizing vadose zone soil contamination related to the petroleum hydrocarbon light non-aqueous phase liquid (LNAPL) plume beneath the site. The team reviewed these reports and files with the primary focus on identifying those documents that contained laboratory analytical data from soil samples collected from soil borings, monitoring well installation borings, test pits, and direct-push (DP) borings such as membrane interface probe (MIP), cone penetrometer test (CPT) logs, electrical conductivity (EC) borings, and hydraulic profile tests (MiHPT); logs are included in **Appendix A**. The analytical data reviewed included results for regulated compounds (e.g., benzene, toluene, ethylbenzene, xylenes (total) [BTEX], methyl-tert-butyl-ether [MTBE], and lead) and non-regulated petroleum analytes (e.g., total petroleum hydrocarbons [TPH]-diesel range organics [TPH-DRO] and TPH-gasoline range organics [TPH-GRO). Most of these data were not in digital format; therefore, the data tables and corresponding sample locations were digitized onto the figures and into the tables presented within this technical memorandum.

In 2024, a Site-wide vapor intrusion (VI) investigation was completed which included collecting soil samples from "near-source" vapor sampling locations both on- and off-Site of the Former DSCP. These

soil samples were analyzed for BTEX and lead, and the results were combined with the historical information gathered during document review to generate a composite dataset of all soil-related investigative results. That dataset is presented herein and is meant to illustrate the extent to which soil impacts are delineated at the Former DSCP Site with respect to progress through the Act 2 program.

Historic analytical data identified during the report review were transcribed onto **Table 1** through **Table 10**. **Table 11** presents the analytical data from near source soil samples collected during the 2024 VI investigation.

Figure 1 is a composite of all drilling locations identified in the reports reviewed and includes the 2024 VI borings. Of note, soil samples were not collected from most of the DP-type locations; however, there are several CPT borings from which soil samples were collected, which are included on **Figure 2**.

Figure 2 shows the subset of locations on **Figure 1** from which soil laboratory analytical data were available. Locations are color-coded by whether soil analytical results from each location either (1) returned an exceedance of a current MSCs (without being specific to which chemical caused the exceedance), (2) did not return an exceedance of any current MSC, or (3) did not undergo chemical-specific analysis for a compound that has a current MSC (e.g., TPH).

Consistent with the related on-going Act 2 work addressing groundwater, the Act 2 soil MSCs referenced above were selected to provide a metric against which to compare the analytical results identified in historical reports. The contaminants of interest for the Former DSCP are PADEP Short List of Petroleum Products for Leaded Gasoline, Aviation Gasoline, and Jet Fuel (PADEP Storage Tank Program Guidance, Table IV-9). The criteria used to evaluate soil analytical results were the PADEP non-residential soil-to-groundwater MSCs for used aquifers with total dissolved solids (TDS) ≤ 2,500 milligrams per liter (mg/L) (Act 2 TGM, Appendix A, Tables 3b [VOCs] and 4b [lead]). The project-specific MSCs were then established by selecting the higher of either the 100x groundwater MSC or the generic value listed. Of note, the MSCs for the applicable short list compounds are the same for residential and non-residential.

In addition, the current (November 2024) United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs), protection of groundwater risk-based soil screening levels (SSLs), were included for comparison to available laboratory analytical results to further evaluate the extent of impact to soil at the Site.

The table below summarizes the 100x groundwater and generic MSCs, and the selected project MSC value, together with risk-based SSL identified in the right-hand column.

PADEP MSCs for Residential/Non-Residential Soil-to-Groundwater; Used Aquifers, TDS ≤ 2,500, and USEPA RSL protection of groundwater risk-based SSLs. (units are in mg/kg)				
Analyte	**100x GW MSC**	**Generic Value**	**Selected MSC**	**RSL Risk-based SSL**
Benzene	0.5	0.13	0.5	2.3E-04
Toluene	100	44	100	7.6E-02
Ethylbenzene	70	46	70	1.7E-03
Xylenes (total)	1000	990	1000	1.9E-02
Cumene	350	2500	2500	7.4E-02
Naphthalene	10	25	25	3.8E-04
1,2-Dichloroethane	0.5	0.1	0.5	4.8E-05
1,2,4-trimethylbenzene	53	300	300	8.1E-03
1,3,5-trimethylbenzene	53	93	93	8.7E-03
MTBE*	53	93	93	3.2E-03
Lead	0.5	450	450	--

***for comparison purposes only, MTBE is not a Leaded Gasoline, Aviation Gasoline, and Jet Fuel short list compound.**

3.0 ASSESSMENT OF HISTORICAL INFORMATION

In October 2023, the JV reviewed available reports in boxes stored on the mezzanine level of the remediation building motor control room. The team evaluated which boxes, files and reports contained information related to historical soil borings and samples collected during earlier investigations at the Former DSCP Site. Five reports were found to contain relevant data with respect to laboratory analytical results from soil samples collected at the Site. From most to least recent, these reports include:

- Aquiver, 2008. Data Summary Report for Activities Performed in Accordance with: "Work Plan for Data Collection in the Area of the Sunoco Point Breeze Refinery and the Former DSCP Facility, South Philadelphia Pennsylvania. September.
- TetraTech FW, 2003. Soil Boring-Well Install Report Former Defense Supply Center Philadelphia.
- Louis Berger, 1998. Phase II Expanded Site Investigation Report, Text, Tables & Figures for the Defense Personnel Support Center, Philadelphia, Pennsylvania. February.
- Dames & Moore, 1997. FINAL Off-Site Free-Phase Hydrocarbon Delineation (Draft Final) Report. Sun Company, Inc., Defense Personnel Support Center, Philadelphia, Pennsylvania. August.
- Kemron/Versar, 1995. FINAL Phase I Remedial Investigation/Feasibility Study Report, Defense Personnel Support Center Philadelphia, Pennsylvania Volume I. July.

Information extracted from these reports are presented in **Table 1** through **Table 10c** and shown on **Figures 1** and **2**. The logs for borings from which soil samples were collected are included in **Appendix A**. In the summaries below, references are made to regulated parameters exceeding their respective MSCs (tabulated above), exceedances of the RSLs (SSL) are not noted on a case-by case basis because all detections exceed the SSL. The SSL values are tabulated with the analytical results in **Tables 1** through **11**.

The following is a summary of information obtained from the reviewed reports.

Aquiver, 2008. Data Summary Report for Activities Performed in Accordance with: "Work Plan for Data Collection in the Area of the Sunoco Point Breeze Refinery and the Former DSCP Facility, South Philadelphia Pennsylvania. September.

The Aquiver Data Summary Report contained data collected to better define the distribution of LNAPL throughout the soil column at the former Sunoco Point Breeze Refinery and the Former DSCP Property. This included the Former DSCP property, the properties east of 26th Street (e.g., Steen) and on the [now] Philadelphia Housing Authority (PHA) and Siena Place properties. The investigation included cone penetrometer testing (CPT) together with laser-induced fluorescence (LIF) capabilities, continuous soil coring and soil sampling at discrete depths, groundwater sampling from wells and from Hydropunch® borings.

Soil samples from 16 of the 47 CPT points advanced by Aquiver in 2008 were analyzed for TPH and benzene. Twelve of those 16 samples exceeded the current benzene MSC. Most of the detections and all of the exceedances were from samples collected at depths greater than 22 feet below grade. Exceedances were observed to depths of 35 feet below grade; most of the samples were collected from between 25 and 35 feet below grade. Data are presented in **Table 1**.

Those locations with benzene MSC exceedances are shown on **Figure 2**; apart from those few locations to the southwest along the CSX railway and the former refinery, all are located within the historical inferred extent of product (October 2002) that is the center of the "breach" described in the RIR/CP. The off-Site exceedances were located further to the west, closer to the former refinery.

TetraTech FW, 2003. Soil Boring-Well Install Report Former Defense Supply Center Philadelphia.

The objectives of this soil boring investigation and monitoring well installation effort were to evaluate soil conditions in the northeast corner of the Former Passyunk Homes area (now PHA), on the CSX property and on the Steen property. Twenty-three (23) soil samples were collected from 14 individual soil borings across the three Site areas. Most of these samples were collected from depths greater than 23 feet below grade while two samples were collected between 16 and 20 feet below grade (PHSB12[16-18] and STSB02[19-20]).

Short List parameters were detected at concentrations that exceeded their respective MSCs in 10 of the 23 samples, including the shallower depths noted above. Benzene and 1,2,4-Trimethylbenzene were detected and exceeded MSCs most frequently. TPH and GRO (C3 – C10) values ranged from 150 to 16,000 milligrams per kilogram (mg/kg) with the highest values of both parameters observed in sample PHSB12(16-18).

Of note, two of the soil borings were located on the western edge of the now Siena Place residential townhome complex (PHSB03 and PHSB04, **Figure 2**). By way of comparison of those analytical results to the residential soil to groundwater MSCs, no exceedances were noted.

TPH data are presented in **Table 2a**, PADEP Act 2 Short List data are presented in **Tables 2b** and **2c**. Soil sample locations are depicted in **Figure 2**.

Louis Berger, 1998. Phase II Expanded Site Investigation Report, Text, Tables & Figures for the Defense Personnel Support Center, Philadelphia, Pennsylvania. February.

The focus of the 1998 Phase II ESI was to evaluate the absence or presence of contaminants which may have been related to known or suspected discharges from underground storage tanks (USTs). The stored products were limited to petroleum products including gasoline, diesel fuel, waste oil and Number 6 fuel oil. The specific purposes of the Phase II ESI were:

- to gather necessary data needed to support either a no further action status or remedial design.
- to fast-track the investigation and design process to expedite turnover of the property; and
- to determine if potential point sources have contributed to the known free-product plume

Six previously investigated areas of the Site contained data pertaining to the soil media. These included: (1) the Building 8 UST area, (2) the Building 9 (Bash St) gas station, (3) the Building 28 USTs/piping area, (4) the Building 46 USTs, (5) the bulk storage ASTs/utility area, and the (6) Oregon Ave UST area.

Building 8 UST Area: Drilling and soil sampling efforts were conducted to address at the location of a previously removed 550-gallon waste oil UST after PADEP determined the UST closure report to be incomplete. The goal was to assess the potential impact to soils and/or groundwater in the area if evidence of UST source contamination was found.

Four soil borings were drilled in the vicinity of the former waste oil tank each to a depth of 16 feet, and 16 samples (including QA/QC) were analyzed for BTEX, naphthalene, lead, and TPH-DRO. BTEX and naphthalene were not detected above laboratory sample quantitation limits. The highest lead concentration was 7.79 mg/kg. TPH-DRO concentrations ranged from 1.5 mg/kg to 110 mg/kg. None of the analytical results exceed a current MSC. Based on the results of the sample analyses further evaluation of this area was not recommended.

Data are presented in **Table 3**. Soil sample locations are depicted in **Figure 2**.

Building 9 Gas Station Area: Drilling and soil sampling work was completed to assess the existence or confirm the removal of suspected USTs adjacent to the north wall of Building 9 on Bash Street.

Seventeen soil samples were collected from four borings drilled to a depth of 16 feet and analyzed for naphthalene, lead, TPH-GRO, and MTBE. Naphthalene and MTBE were not detected above laboratory sample quantitation limits. Lead concentrations ranged from 3.69 mg/kg to 146 mg/kg (does not exceed the MSC). DRO concentrations ranged from 2.1 mg/kg to 20 mg/kg. There are no MSC values for TPH-GRO or TPH-DRO. Based on the results of these analyses, further evaluation of this area was not recommended.

Data are presented in **Table 4**. Soil sample locations are depicted in **Figure 2**.

Building 28 USTs piping Area: This area was historically used as a fueling location for Former DSCP activities and included three 10,000-gallon USTs, associated piping and two pump islands. The tanks and piping originally installed in 1941 were replaced in-kind in 1971 and were reported to have held gasoline and diesel fuel for facility vehicles and locomotives. The Louis Berger report (1998) referenced earlier investigations by USACE in 1987 (source report not found) that identified TPH concentrations in soil in concentrations as high as 18,673 mg/kg. Free product was also noted at depths of greater than 17 feet below grade, but BTEX was not detected between 14 and 17 feet bgs. The USACE (1987) report also noted that review of DSCP records by USACE indicated that no significant diesel fuel inventory discrepancy had been documented that would account for the occurrence of free product. It was also concluded that the contaminated soil detected at a depth of 17 feet may represent an older, separate· spill from the one being investigated, and the free product encountered in groundwater may be from off-site sources.

The Louis Berger Report also summarized a follow-on soil investigation by ESE in 1991 that identified TPH and BTEX in the area, but no free product was identified. In 1994, the tanks, piping and fueling infrastructure were excavated and closed (and replaced with ASTs); however, PADEP later found the closure report to be deficient.

The 1998 The Louis Berger investigation included the collection and analysis of 37 soil samples from in and around the abandoned fuel lines associated with the USTs and fueling islands from 29 soil borings and nine test pits. Soil samples were collected from depths between 5 and 16 feet below grade and analyzed for TPH-GRO and TPH-DRO. Concentrations of TPH-GRO ranged from 1.4 mg/kg to 110 mg/kg; the one sample analyzed for TPH-DRO yielded a concentration of 15 mg/kg. There are no MSC values for GRO or DRO. Of note, boiling point distillations were performed on a limited number of samples from test pits, the results of which represented weathered JP-4. Based on the results of sample analyses from the drilling and test pit excavation program, further evaluation of this area was not recommended.

Data are presented in **Table 5**. Soil sample locations are depicted in **Figure 2**.

Building 46 UST Area: This was the location of two USTs for which there were few usage records and no records of their size or closure. The referenced BRAC Cleanup Plan recommended their removal but no records document that work occurring. A GPR survey demonstrated that they had been removed and revealed the former excavation from which they were removed, suggesting any impacted soil would have been removed; it is likely that additional soil removal occurred during redevelopment of the area.

Eight samples were collected from 2 borings (4 depths each) and analyzed for lead, DRO, and MTBE. The maximum lead concentration observed was 72.7 mg/kg, which does not exceed the project-selected MSC of 450 mg/kg. Low-level concentrations of TPH-DRO were identified, and MTBE detections were measured below current MSC concentrations, but higher than SSLs. Based on these results additional evaluation of the Building 46 UST area was not recommended.

Data are presented in **Table 6**. Soil sample locations are depicted in **Figure 2**.

Bulk Storage ASTs Utility Trench Area: In 1998, there were five active 25,000-gallon Number 6 fuel oil USTs located between Building 18 (the pump house) and two 200,000-gallon above ground storage tanks (ASTs). A piping network connected the USTs with the ASTs and the pump house. The ASTs were contained within a concrete basin and were connected to a series of supply ports located in the adjacent rail siding (as noted in the Versar, 1995 report below). This investigation focused on the immediate vicinity of the two ASTs on the south side of the facility, and the potential fuel oil release area along the fuel/steam pipe utility trench and fill lines on the west side of the area. The investigation included eight soil borings advanced to 16 feet below ground surface, and six hand-augered borings.

Thirty-three samples (33) were analyzed for naphthalene, lead, and DRO. Naphthalene was not detected above laboratory sample quantitation limits. Lead concentrations ranged between 32.1 mg/kg and 829 mg/kg. TPH-DRO concentrations ranged between 3.4 mg/kg and 300 mg/kg. No further investigation was recommended at this area.

Data are presented in **Table 7**. Soil sample locations are depicted in **Figure 2**.

Oregon Avenue UST Area: The Oregon Avenue UST area had reportedly been the site of two 6,000-gallon USTs and one 10,000-gallon UST installed on the north side of the Former DSCP adjacent to Oregon Avenue in 1922. These tanks were removed in the 1990's; the two 6,000-gallon tanks were removed while the 10,000-gallon tank was closed-in-place via foam filling. Some hydrocarbons were observed during closure action but were limited to the upper 8 feet below grade and was concluded to not be associated with LNAPL plume present at the time. The purpose of the 1998 investigation was to locate the closed-in-place UST, determine its size and perimeter extent, and to assess potential impacts to soil and groundwater from the former tanks.

Forty-eight (48) samples were collected from 20 borings and analyzed for BTEX, lead, and TPH-DRO. Benzene was not detected above laboratory sample quantitation limits. Most of the samples collected contained detectable levels of TPH-DRO with concentration ranging between 610 mg/kg and 3,300 mg/kg. Of the few samples tested for BTEX, the maximum ethylbenzene concentration was 1.23 mg/kg, the highest toluene concentration was 0.0113 mg/kg, and the highest total xylene concentration was 4.61 mg/kg. None of these results exceed a current MSC. No additional investigation was recommended.

Data are presented in **Table 8**. Soil sample locations are depicted in **Figure 2**.

Dames & Moore, 1997. FINAL OffSite Free-Phase Hydrocarbon Delineation (Draft Final) Report. Sun Company, Inc., Defense Personnel Support Center, Philadelphia, Pennsylvania. August.

The overall objective of the Phase I RI was to determine if free-phase hydrocarbon (FPH) existed south and southwest of the Former DSCP Site (referred to as Defense Personnel Support Center [DPSC] within the RI Report) in the vicinity of the Passyunk Homes, now Siena Place). Four borings were advanced to 80 feet below grade, and five soil samples were collected from the four borings at depths between 12 and 36 feet below grade and analyzed for TPH-DRO and TPH-GRO. TPH-DRO concentrations ranged from 0.374 mg/kg to 2.38 mg/kg; TPH-GRO concentrations ranged from 237 mg/kg to 1,360 mg/kg.

Data are presented in **Table 9**. Soil sample locations are depicted in **Figure 2**.

Kemron/Versar, 1995. FINAL Phase I Remedial Investigation/Feasibility Study Report, Defense Personnel Support Center Philadelphia, Pennsylvania Volume I. July.

The objective of 1995 Phase I Remedial Investigation/Feasibility Study (RI/FS) was to delineate the extent of petroleum hydrocarbon contaminated media at the Former DSCP and along the CSX railway. In addition to file review, a soil gas survey, and hydropunch sampling, sixteen soil borings were advanced during the investigation for the collection of soil samples and or the installation of groundwater monitoring wells. From these borings, 34 samples were collected from areas spanning the Former DSCP and analyzed for BTEX, naphthalene, GRO, DRO, and TPH.

Benzene concentrations ranged from non-detect to 26 mg/kg, ethylbenzene concentration ranged between non-detect and 120 mg/kg, while naphthalene concentrations ranged from non-detect to 51 mg/kg. Toluene and total xylenes were also detected, but at concentrations that did not exceed MSC values. The highest BTEX concentrations were observed at depths of 6 to 12 feet below grade and decreased significantly from 12 to 20 feet below grade. TPH-GRO values were as high as 16,000 mg/kg and TPH-DRO reached a maximum of 10,000 mg/kg which were the greatest deeper than 22 feet below grade. Lead exceeded its MSC in two samples, while benzene, ethylbenzene and naphthalene exceeded in two other samples.

Data are presented in **Table 10**. None of these analytes exceeded its respective MSC. Soil sample locations are depicted in **Figure 2**.

4.0 2024 SOIL INVESTIGATION

As part of a Site-wide Vapor Intrusion investigation, soil samples were collected from 28 borings drilled to install near source soil vapor probes (**Figures 1** and **2**) within the Former DSCP at Building 6, Building 12, Building 9, Building 30, and the remediation control building, and south of I-76 at the Holiday Inn Hotel, the Penrose Ave P. Agnes Building, the PHA gym, Building E (Jim's Ice), and the Steen property. Locations were selected in accordance with the *Vapor Intrusion Sampling Work Plan for the Commercial/Industrial Buildings, Residential Properties and Sewer - Former Defense Supply Center Philadelphia* (Arcadis, 2023). Near source locations were drilled to maximum total depths of approximately 15' (top of the water table) using a Geoprobe 7822DT drill rig with a 2" diameter direct push tool. Boring logs are included in **Appendix B**. At each near source location, a soil grab sample was collected from the half-foot interval nearest the bottom of the boring and submitted to ALS Global analytical laboratories in Middletown, PA for laboratory

analysis of the PADEP Short List of Petroleum Products for Leaded Gasoline, Aviation Gasoline, and Jet Fuel (PADEP Storage Tank Program Guidance, Table IV-9). The soil analytical results were tabulated and compared to the non-residential soil to groundwater MSCs (**Table 11**). Laboratory analytical reports are included in **Appendix C**.

Of the 28 samples collected across the DSCP Site, only the concentrations of lead exceeded MSC values at four (4) of the locations (**Table 11**). These included samples from Building 9-NS-E-14.5 and Building 9-NS-K-14.5, and from Hotel-NS-A-7.5 and Hotel-NS-B-7.5 (**Figure 2**). No VOC results exceeded their respective soil-to-groundwater MSCs. Results summaries for each sampling area/Buildings are included below.

- Two samples were collected from the vicinity of Building 12. Volatile organic compounds were not detected in either sample. Lead was detected at concentrations of 2.5 mg/kg and 3.9 mg/kg in samples Building 12-NS-A-14.5 and Building 12-NS-B-14.5, respectively, both less than the MSC.
- Two samples were collected from the vicinity of Building 6. VOCs were not detected in either sample. Lead was detected at concentrations of 4.2 mg/kg and 3.4 mg/kg in samples Building 6-NS-A-13.5 and Building 6-NS-B-14.5, respectively, below the MSC.
- Two samples were collected from the vicinity of Building 30. Benzene was detected at a concentration of 0.0524 mg/kg in sample Building 30-NS-A-14.5, below the MSC. Lead was detected at concentrations of 7.6 mg/kg and 3.7mg/kg in samples Building 30-NS-A-14.5 and Building 30-NS-B-14.5, respectively, below the non-residential soil-to-groundwater MSC.
- One sample was collected from the VES building. VOCs were not detected in sample VES Building-NS-A-14.5. Lead was detected at concentrations of 6.8 mg/kg, below the non-residential soil-to-groundwater MSC.
- Eleven samples were collected from the vicinity of Building 9. Benzene and naphthalene were detected at concentrations of 0.0912 mg/kg and 4.98 mg/kg in samples Building 9-NS-J-14.5 and Building 9-NS-K-14.5, respectively, below the non-residential soil-to-groundwater used aquifers standard. Lead was detected at concentrations of 493 mg/kg and 592 mg/kg in samples Building 9-NS-E-14.5 and Building 9-NS-K-14.5, respectively, exceeding the MSC for lead.
- Two samples were collected from the Steen property. 1,3,5-Trimethylbenzene was detected at concentrations of 0.0455 mg/kg and 0.112 mg/kg in samples STEEN-NS-A-13 and STEEN-NS-B-14.5, respectively, both below the non-residential soil-to-groundwater MSC. Lead was detected at concentrations of 5.1 mg/kg and 10.3 mg/kg in samples STEEN-NS-A-13 and STEEN-NS-B-14.5, respectively, both below the MSC.
- Two samples were collected from the vicinity of Building E. VOCs were not detected in either sample. Lead was detected at concentrations of 1.4 mg/kg and 2.9 mg/kg in samples Building E-NS-A-9.5 and Building E-NS-B-10.5, respectively, both below the MSC.
- Two samples were collected from the vicinity of the Holiday Inn Hotel. VOCs were not detected in either sample. Lead was detected at concentrations of 570 mg/kg and 724 mg/kg in samples Hotel-NS-A-7.5 and Hotel-NS-B-7.5, respectively, both above the MSC.
- Two samples were collected from the vicinity of the Penrose Ave P. Agnes Building. VOCs were not detected in either sample. Lead was detected at concentrations of 11 mg/kg and 73.8 mg/kg in samples PAgnesS-NS-A-13.5 and PAnesS-NS-B-7.5, respectively, both below the MSC.

5.0 COLLECTIVE ASSESSMENT OF SOIL INVESTIGATIONS

As reported in the documents reviewed herein, most of the footprint of the historical maximum extent of LNAPL has been sampled at some point between 1995 and 2024. As shown on **Figure 1**, the spatial coverage of historical drilling and sampling at the Site spans north to south from Oregon Avenue to below Hartranft Street, and from west to east from the former refinery to east of 20th Street. This distribution includes both direct-push borings and soil sampling locations that were sampled for short-list chemicals such BTEX and lead, as well as for TPH, DRO, and GRO. In many cases, the direct-push data serve as a proxy for total aggregate VOCs in the subsurface, but to not include chemical specific analysis. **Figure 2** illustrates the spatial distribution across where regulated chemical MSC exceedances were identified at some point since 1995. As shown, a large majority of those exceedances are co-incident with the historical inferred extent of product (LNAPL), or on/just downgradient of the former refinery. In general, the highest concentrations of BTEX, and most MSC exceedances were found in samples from the core of the LNAPL coincident with the "breach" described in various reports. These observations demonstrate that the aerial extent of soil impacts is delineated (which align closely with LNAPL distribution) and constrained to areas of the Site where active remediation is ongoing and/or where land use controls are in place to minimize potential exposure.

Some of the earlier historical soil investigations presented herein were performed between 1995 and 1998 coinciding with the implementation of the PADEP Act 2 program. Consequently, the laboratory analyses performed on samples collected as part of the earlier investigations were not fully consistent with the parameters in the current PADEP Short List of Petroleum Products for Leaded Gasoline, Aviation Gasoline, and Jet Fuel (PADEP Storage Tank Program Guidance, Table IV-9) identified as the Site's COCs in the 2017 Notice of Intent to Remediate (NIR). Additionally, there are several instances where the laboratory reporting limit at the time was greater than the current MSC. In these instances, it is possible that a detection or exceedance was "missed" because the reporting limit was too high. This occurred mostly with Benzene where the MSC is one of the lowest considered at 0.5 mg/kg. This occurred with nearly all of the samples collected in 2003 (**Tables 2b** and **2c**) where reporting limits ranging between 0.1 mg/kg and 5.0 mg/kg; most were 0.5 mg/kg. This same elevated reporting limit for benzene also occurred a few times in the Versar 2008 (Site Wide) data (**Table 8**); leaving an uncertainty regarding the actual concentrations of benzene in those samples with respect to the MCS. Recognizing that this occurred on a limited basis, it does not appear to further limit the utility of the historical data.

Of the approximately 128 locations from which soils samples were collected, only 22 contained exceedances, primarily for benzene and lead. With the exceptions of the four (4) lead exceedances identified in the 2024 VI investigation near source samples, all other VOC exceedances are from pre-2008, and most of these locations are close to, or being addressed directly by, the Site's vacuum-enhanced skimming system (VES) remediation system. A limited number of benzene, ethylbenzene, and naphthalene concentrations exceeded current MSCs which could be associated with the former Bash Street Gas Station or the bulk fuel storage area. Each of these were at depths that are now beneath the groundwater table and are in locations that are being actively remediated through the remediation system.

From the historical data, benzene exceeded its MSC in five of the 23 samples collected (maximum of 201 mg/kg), while nine samples exceeded the MSC for 1,2,4-Trimethylbenzene maximum of 190 mg/kg.

Naphthalene also exceeded its MSC in one of the samples collected from the former Steen property at a concentration of 29 mg/kg. The highest measured benzene concentration was found along the northeast corner of what is now the PHA service building from CPT-09 (20.3') at 201 mg/kg.

In 2024, benzene was only detected in two samples collected at 14.5' below grade near Building 30 and Building 9. Naphthalene was detected in one sample collected at Building 9 at a depth of 14.5'. 1,3,5-Trimethylbenzene was detected in 2 samples collected from the Steen property at depths of 13' and 14.5'.

From the historical data, the highest lead concentration was found in the Bulk Storage ASTs Utility Trench Area at 829 mg/kg at a depth of only 0.5 feet below grade. This area has subsequently been redeveloped as part of quartermaster Plaza and soils from that depth have likely been removed and replaced with clean fill. During the 2024 soil sampling event, the highest lead concentrations were noted in the vicinity of Building 9 at depths of 14.5' and the hotel at depths of 7.5'.

A common theme of the historical reports reviewed was when short list compounds were detected or exceeded MSCs, they were at shallow depths between 6 and approximately 15 feet below grade, with a consistent decrease or absence thereof from depths between former USTs and the water table. Higher TPH and BTEX concentrations in soils were noted at depths greater than 20 feet whish were commonly attributed to "off-Site sources". Many authors pointed to the more regional occurrence of the underlying LNAPL as the source of soil contamination.

With respect to the 2024 soil sampling effort, sampling was focused on the core areas of the Site and in areas south of I-76 as part of a Site-Wide Vapor Intrusion Investigation. Most of the locations were around Building 9 and 30, with a few samples collected from adjacent to Buildings 6 and 12. South of I-76, samples were collected from near five buildings that were also included in the VI Investigation. Of those samples collected, only lead exceeded the project-selected MSC of 450 mg/kg at four locations around 2 buildings (east end of Building 9 and from the Hotel property). The sample depths around Building 9 were 14.5 feet below grade and the sample depth around the hotel were 7.5 feet below grade.

The two Building 9 soil sample locations do not appear to be associated with any historically high detections of tested chemicals. At sample location Building 9-NS-K on the southeast corner of Building 9, the nearest historical borings, MW-9 and MW-10, did not show exceedances of tested compounds compared to current MSCs. No historical soil borings were co-located with Building 9-NS-E located near the northeast corner of Building 9 with which to compare historical information.

In summary, the key exceedances of non-residential soil-to-groundwater MSCs are:

- **Benzene:** Exceedances of the 100x GW MSC from the Aquiver (2008) investigation and from "Site-wide" data (with the caveat of high detection limits noted above).
- **Ethylbenzene:** Exceedances of its MSC in "Site-wide" data.
- **Naphthalene:** Exceedance of its 100x GW MSC (and generic value) in "Site-wide" data.
- **Lead:** Exceedance of the 100x GW MSC (and generic value) in the Building 9 Gas Station and Bulk Storage AST Areas.

6.0 CONCLUSIONS

Through the historical and 2024 soil investigations, all potential source areas for soil-related impacts on the former DSCP property have been addressed. Most areas showed contaminant levels below current Act 2 MSCs, while a select few areas showed residual lead impacts in subsurface soils. The few remaining areas where minor MSC exceedances were observed can effectively be managed by implementing the Site Soil Management Plan proposed in the Act 2 Cleanup Plan.

Furthermore, the lateral and vertical impacts from former fuel tanks and associated piping were limited in spatial extent, not reaching the water table or the underlying LNAPL, as documented in several reports. This demonstrates that the operations at the former DSCP likely did not contribute to the LNAPL or to groundwater impacts.

Deficiency #1 (Section 6.5.1.3 Hydrocarbon-Impacted Soils) provided in PADEP's Disapproval Letter dated September 13, 2022, has been addressed in that the vadose zone contamination (both the smear zone and above) has been adequately characterized in accordance with PADEP Act 2.

Tables

TABLE 1. Benzene Soil Analytical Results (Aquiver, 2008)

Benzene Analytical Results from Aquiver, 2008						
Sample ID	**Date**	**Depth (ft)**	**Risk-based SSL**	**MSC**	**Result (mg/kg)**	**Detection Limit for ND**
CPT-01 (28.5'-28.7')	2008-10-22	28.6	2.3E-04	0.5	0.027	
CPT-01 (34.75'-34.95')	2008-10-22	34.85			0.628	
CPT-01 (36-36.2')	2008-10-22	36.1			0.382	
CPT-03-SO (28.4-28.6)	2008-11-14	28.5			5.53	
CPT-03-SO (37.7-37.9)	2008-11-14	37.8			1.01	
CPT-05-SO (17.0-17.2)	2008-10-28	17.1			ND	0.116
CPT-05-SO (2.8-3.0)	2008-10-28	2.9			ND	0.286
CPT-05-SO (31.0-31.2)	2008-10-28	31.1			10.9	
CPT-08-SO (23.0-23.4)	2008-11-18	23.2			14.1	
CPT-08-SO (35.0-35.2)	2008-11-18	35.1			6.61	
CPT-09-SO (20.2-20.4)	2008-10-29	20.3			201	
CPT-09-SO (31.8-32.0)	2008-10-29	31.9			11.1	
CPT-09-SO (35.2-35.4)	2008-10-29	35.3			5.83	
CPT-10-SO (27.8-28.0)	2008-10-28	27.9			ND	0.132
CPT-10-SO (31.8-32.0)	2008-10-28	31.9			ND	0.131
CPT-12-SO (26.0-26.5)	2008-11-10	26.25			11.6	
CPT-12-SO (37.5-37.7)	2008-11-10	37.6			2.71	
CPT-19-SO (20.5-20.7)	2008-11-20	20.6			8.78	
CPT-19-SO (24.0-24.2)	2008-11-20	24.1			15.7	
CPT-19-SO (34.0-34.2)	2008-11-20	34.1			0.272	
CPT-27-SO (21.0-21.2)	2008-11-12	21.1			3.99	
CPT-27-SO (32.2-32.4)	2008-11-12	32.3			5.30	
CPT-27-SO (35-35.2)	2008-11-12	35.1			46.5	
CPT-30-SO (17.2-17.4)	2008-11-19	17.3			ND	0.115
CPT-30-SO (27.8-28.0)	2008-11-19	27.9			ND	0.511
CPT-30-SO (3.0)	2008-11-18	3			0.035	
CPT-36-SO (22.0-22.3)	2008-11-21	22.15			9.85	
CPT-36-SO (24.0-24.2)	2008-11-21	24.1			13.0	
CPT-36-SO (35.0-35.2)	2008-11-21	35.1			13.3	
CPT-38-SO (27.3-27.5)	2008-11-13	27.4			0.320	
CPT-38-SO (34.2-34.4)	2008-11-13	34.3			0.480	
CPT-39-SO (18.4-18.6)	2008-11-11	18.5			0.014	
CPT-39-SO (22.2-22.4)	2008-11-11	22.3			0.378	
CPT-39-SO (34.4-34.6)	2008-11-11	34.5			0.601	
CPT-40-SO (21.75-21.95)	2008-11-20	21.85			ND	0.133
CPT-40-SO (31.8-32.0)	2008-11-20	31.9			ND	0.606
CPT-43-SO (19.8-20.0)	2008-11-24	19.9			0.296	
CPT-43-SO (25.0-25.2)	2008-11-24	25.1			7.24	
CPT-43-SO (36.5-36.7)	2008-11-24	36.6			0.250	
CPT-45-SO (21.6-21.8)	2008-11-25	21.7			14.9	
CPT-45-SO (25.5-25.7)	2008-11-25	25.6			35.7	
CPT-45-SO (33.5-33.7)	2008-11-25	33.6			8.87	

TABLE 2a. Total Petroleum Hydrocarbon (TPH) (C8-C40) Concentrations in Soils
(TetraTech FW, 2003)

Sample #	Risk-based SSL	Used Aquifers TDS ≤ 2500 Non-Residential	PHSB02 (26-27')	PHSB03 (30-33')	PHSB04 (31-32')	PHSB12 (16-18)	STSB02 (19-20)	STSB03 (23-24)	STSB03 (31-32)
Depth			26-27'	30-33'	31-32'	16-18'	19-20'	23-24'	31-32'
Date Collected			7/11/2003	7/15/2003	7/15/2003	9/3/2003	9/5/2003	9/5/2003	9/5/2003
Media			Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units	mg/kg	mg/kg	mg/Kg	mg/Kg	mg/kg	mg/Kg	mg/kg	mg/Kg	mg/kg
Comments									
TPH	Not Established	Not Established	570	1200	1800	8100	990	980	1100
GRO (C3 - C10)	Not Established	Not Established	2300	150	260	16000	1100	4500	2000

Sample #	Risk-based SSL	Used Aquifers TDS ≤ 2500 Non-Residential	STSB05 (23-24)	STSB05 (31-32)	STSB06 (27-28)	STSB07 (24-26)	CSXSB02 (46-47)	CSXSB02 (53-54)	CSXSB02 (56-58)
Depth			23-24'	31-32'	27-28'	24-26'	46-47'	53-54'	56-58'
Date Collected			9/8/2003	9/8/2003	9/10/2003	9/10/2003	8/29/2003	9/22/2003	9/22/2003
Media			Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/Kg	mg/Kg	mg/Kg
Comments									
TPH	Not Established	Not Established	1000	1600	2400	3200	53	1200	500
GRO (C3 - C10)	Not Established	Not Established	1700	3800	7600	3200	130	1100	980

Sample #	Risk-based SSL	Used Aquifers TDS ≤ 2500 Non-Residential	CSXSB02 (56-58)-O	CSXSB03 (51')	CSXSB03 (56')	CSXSB03 (60')	CSXSB04 (48-49)	CSXSB04 (54-56)	CSXSB04 (56-58)
Depth			56-58'	51'	56'	60'	48-49'	54-56'	56-58'
Date Collected			9/22/2003	9/17/2003	9/17/2003	9/17/2003	8/28/2003	8/28/2003	8/28/2003
Media			Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units	mg/kg	mg/kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
Comments			Duplicate						
TPH	Not Established	Not Established	940	910	2700	3100	1700	750	890
GRO (C3 - C10)	Not Established	Not Established	1200	6600	4200	3700	1100	1800	3000

Sample #	Risk-based SSL	Used Aquifers TDS ≤ 2500 Non-Residential	CSXSB05 (47-48)	CSXSB05 (54-56)
Depth			47-48'	54-56'
Date Collected			9/16/2003	9/16/2003
Media			Soil	Soil
Units	mg/kg	mg/kg	mg/kg	mg/kg
Comments				
TPH	Not Established	Not Established	820	350
GRO (C3 - C10)	Not Established	Not Established	290	340

TABLE 2b. Volatile Organic Compound (VOC) Concentrations in Soils
(TetraTech FW, 2003)

Sample #	Risk-based SSL	Used Aquifers TDS ≤ 2500 Non-Residential	PHSB02 (26-27')		PHSB03 (30-33')		PHSB04 (31-32')		PHSB12 (16-18)		STSB02 (19-20)		STSB03 (23-24)	
Depth			26-27'		30-33'		31-32'		16-18'		19-20'		23-24'	
Date Collected			7/11/2003		7/15/2003		7/15/2003		9/3/2003		9/5/2003		9/5/2003	
Media			Soil		Soil		Soil		Soil		Soil		Soil	
Units	mg/kg	mg/kg	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Comments				PQL		PQL		PQL		PQL		PQL		PQL
Benzene	2.3E-04	0.5	ND	5.0	ND	1.0	ND	1.0	19.0	10.0	1.1	0.5	ND	5.0
Toluene	7.6E-02	100	ND	5.0	ND	1.0	ND	1.0	ND	10.0	ND	0.5	ND	5.0
Ethylbenzene	1.7E-03	70	15.0	5.0	1.0	1.0	ND	1.0	46.0	10.0	ND	0.5	30.0	5.0
Xylenes	1.9E-02	1,000	63.0	5.0	ND	1.0	1.3	1.0	86.0	10.0	ND	0.5	110.0	5.0
Cumene (Isopropylbenzene)	7.4E-02	2,500	ND	5.0	ND	1.0	ND	1.0	22.0	10.0	1.1	0.5	5.3	5.0
Naphthalene	3.8E-04	25	14.0	5.0	2.7	1.0	1.0	1.0	ND	10.0	ND	0.5	11.0	5.0
1,2,4-Trimethylbenzene	8.1E-03	25	61.0	5.0	ND	1.0	ND	1.0	94.0	10.0	ND	0.5	100.0	5.0
1,3,5-Trimethylbenzene	8.7E-03	300	23.0	5.0	ND	1.0	1.7	1.0	36.0	10.0	ND	0.5	35.0	5.0
1,2-Dichloroethane (EDC)	4.8E-05	0.5	ND	5.0	ND	1.0	ND	1.0	ND	10.0	ND	0.5	ND	5.0

Sample #	Risk-based SSL	Used Aquifers TDS ≤ 2500 Non-Residential	STSB03 (31-32)		STSB05 (23-24)		STSB05 (31-32)		STSB06 (27-28)		STSB07 (24-26)		CSXSB02 (46-47)	
Depth			31-32'		23-24'		31-32'		27-28'		24-26'		46-47'	
Date Collected			9/5/2003		9/8/2003		9/8/2003		9/10/2003		9/10/2003		8/29/2003	
Media			Soil		Soil		Soil		Soil		Soil		Soil	
Units	mg/kg	mg/kg	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Comments				PQL		PQL		PQL		PQL		PQL		PQL
Benzene	2.3E-04	0.5	4.0	0.5	0.7	0.5	20.0	0.5	ND	5.0	ND	2.0	ND	0.1
Toluene	7.6E-02	100	1.0	0.5	1.6	0.5	9.9	0.5	ND	5.0	ND	2.0	ND	0.1
Ethylbenzene	1.7E-03	70	20.0	0.5	13.0	0.5	62.0	0.5	61.0	5.0	7.9	2.0	ND	0.1
Xylenes	1.9E-02	1,000	43.0	0.5	49.0	0.5	290.0	0.5	170.0	5.0	17.0	2.0	ND	0.1
Cumene (Isopropylbenzene)	7.4E-02	2,500	2.2	0.5	2.2	0.5	4.4	0.5	8.0	5.0	2.9	2.0	ND	0.1
Naphthalene	3.8E-04	25	13.0	0.5	8.2	0.5	17.0	0.5	29.0	5.0	20.0	2.0	ND	0.1
1,2,4-Trimethylbenzene	8.1E-03	25	93.0	0.5	52.0	0.5	130.0	0.5	190.0	5.0	68.0	2.0	ND	0.1
1,3,5-Trimethylbenzene	8.7E-03	300	31.0	0.5	16.0	0.5	52.0	0.5	72.0	5.0	25.0	2.0	ND	0.1
1,2-Dichloroethane (EDC)	4.8E-05	0.5	ND	0.5	ND	0.5	ND	0.5	ND	5.0	ND	2.0	ND	0.1

Sample #	Risk-based SSL	Used Aquifers TDS ≤ 2500 Non-Residential	CSXSB02 (53-54)		CSXSB02 (56-58)		CSXSB02 (56-58)-O		CSXSB03 (51')		CSXSB03 (56')		CSXSB03 (60')	
Depth			53-54'		56-58'		56-58'		51'		56'		60'	
Date Collected			9/22/2003		9/22/2003		9/22/2003		9/17/2003		9/17/2003		9/17/2003	
Media			Soil		Soil		Soil		Soil		Soil		Soil	
Units	mg/kg	mg/kg	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Comments				PQL		PQL	Duplicate	PQL		PQL		PQL		PQL
Benzene	2.3E-04	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
Toluene	7.6E-02	100	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
Ethylbenzene	1.7E-03	70	0.7	0.5	1.0	0.5	1.7	0.5	2.2	0.5	1.7	0.5	1.5	0.5
Xylenes	1.9E-02	1,000	1.8	0.5	2.0	0.5	3.2	0.5	12	0.5	13	0.5	7.7	0.5
Cumene (Isopropylbenzene)	7.4E-02	2,500	1.7	0.5	1.2	0.5	1.8	0.5	8.8	0.5	9.3	0.5	9.7	0.5
Naphthalene	3.8E-04	25	9.6	0.5	1.5	0.5	1.9	0.5	ND	0.5	17	0.5	15	0.5
1,2,4-Trimethylbenzene	8.1E-03	25	12	0.5	4.0	0.5	6.2	0.5	18	0.5	27	0.5	13	0.5
1,3,5-Trimethylbenzene	8.7E-03	300	6.8	0.5	1.7	0.5	2.6	0.5	17	0.5	21	0.5	24	0.5
1,2-Dichloroethane (EDC)	4.8E-05	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5

Sample #	Risk-based SSL	Used Aquifers TDS ≤ 2500 Non-Residential	CSXSB04 (48-49)		CSXSB04 (54-56)		CSXSB04 (56-58)		CSXSB05 (47-48)		CSXSB05 (54-56)	
Depth			48-49'		54-56'		56-58'		47-48'		54-56'	
Date Collected			8/28/2003		8/28/2003		8/28/2003		9/16/2003		9/16/2003	
Media			Soil		Soil		Soil		Soil		Soil	
Units	mg/kg	mg/kg	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Comments				PQL		PQL		PQL		PQL		PQL
Benzene	2.3E-04	0.5	ND	0.1	ND	0.1	ND	1.0	ND	0.5	ND	0.2
Toluene	7.6E-02	100	ND	0.1	ND	0.1	ND	1.0	ND	0.5	ND	0.2
Ethylbenzene	1.7E-03	70	0.7	0.1	ND	0.1	ND	1.0	1.0	0.5	ND	0.2
Xylenes	1.9E-02	1,000	3.3	0.1	0.4	0.1	1.7	1.0	1.7	0.5	ND	0.2
Cumene (Isopropylbenzene)	7.4E-02	2,500	1.4	0.1	1.8	0.1	7.8	1.0	0.6	0.5	0.8	0.2
Naphthalene	3.8E-04	25	1.6	0.1	ND	0.1	ND	1.0	5.2	0.5	ND	0.2
1,2,4-Trimethylbenzene	8.1E-03	25	23	0.1	ND	0.1	ND	1.0	14.0	0.5	ND	0.2
1,3,5-Trimethylbenzene	8.7E-03	300	3.3	0.1	0.2	0.1	ND	1.0	3.9	0.5	1.1	0.2
1,2-Dichloroethane (EDC)	4.8E-05	0.5	ND	0.1	ND	0.1	ND	1.0	ND	0.5	ND	0.2

PQL-practical quantitation limit

TABLE 2c. GC/MS Full Scan Concentrations in Soils
(TetraTech FW, 2003)

Sample #	Risk-based SSL	Used Aquifers TDS ≤ 2500 Non-Residential	PHSB02 (26-27')		PHSB03 (30-33')		PHSB04 (31-32')		PHSB12 (16-18)		STSB02 (19-20)		STSB03 (23-24)	
Depth			26-27'		30-33'		31-32'		16-18'		19-20'		23-24'	
Date Collected			7/11/2003		7/15/2003		7/15/2003		9/3/2003		9/5/2003		9/5/2003	
Media			Soil		Soil		Soil		Soil		Soil		Soil	
Units	mg/kg	mg/kg	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Comments				PQL		PQL		PQL		PQL		PQL		PQL
Benzene	2.3E-04	0.5	ND	0.5	ND	0.5	ND	0.5	21.0	5.0	ND	0.5	ND	0.5
Toluene	7.6E-02	100	ND	0.5	ND	0.5	ND	0.5	ND	5.0	ND	0.5	0.7	0.5
Ethylbenzene	1.7E-03	70	7.5	0.5	8.3	0.5	3.6	0.5	43.0	5.0	ND	0.5	11.0	0.5
m,p-Xylenes		1,000	36.0	0.5	1.1	0.5	4.1	0.5	74.0	5.0	ND	0.5	35.0	0.5
o-Xylene			1.3	0.5	ND	0.5	ND	0.5	ND	5.0	ND	0.5	6.0	0.5
Cumene (Isopropylbenzene)	7.4E-02	2,500	1.3	0.5	3.1	0.5	3.8	0.5	20.0	5.0	1.2	0.5	3.0	0.5
Naphthalene	3.8E-04	25	18.0	0.5	ND	0.5	4.5	0.5	23.0	5.0	1.3	0.5	8.5	0.5
1,2,4-Trimethylbenzene	8.1E-03	25	73.0	0.5	ND	0.5	ND	0.5	90.0	5.0	0.9	0.5	60.0	0.5
1,3,5-Trimethylbenzene	8.7E-03	300	26.0	0.5	ND	0.5	11.0	0.5	35.0	5.0	ND	0.5	18.0	0.5
1,2-Dichloroethane (EDC)	4.8E-05	0.5	ND	0.5	ND	0.5	ND	0.5	ND	5.0	ND	0.5	ND	0.5
1,2-Dibromoethane (EDB)	2.1E-06	0.005	ND	0.5	ND	0.5	ND	0.5	ND	5.0	ND	0.5	ND	0.5

Sample #	Risk-based SSL	Used Aquifers TDS ≤ 2500 Non-Residential	STSB03 (31-32)		STSB05 (23-24)		STSB05 (31-32)		STSB06 (27-28)		STSB07 (24-26)		CSXSB02 (46-47)	
Depth			31-32'		23-24'		31-32'		27-28'		24-26'		46-47'	
Date Collected			9/5/2003		9/8/2003		9/8/2003		9/10/2003		9/10/2003		8/29/2003	
Media			Soil		Soil		Soil		Soil		Soil		Soil	
Units	mg/kg	mg/kg	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Comments				PQL		PQL		PQL		PQL		PQL		PQL
Benzene	2.3E-04	0.5	1.7	0.5	0.6	0.5	19.0	1.0	5.5	0.5	ND	0.5	ND	0.1
Toluene	7.6E-02	100	0.8	0.5	1.7	0.5	7.6	1.0	1.9	0.5	ND	0.5	ND	0.1
Ethylbenzene	1.7E-03	70	21.0	0.5	14.0	0.5	17.0	1.0	7.0	0.5	21.0	0.5	ND	0.1
m,p-Xylenes		1,000	45.0	0.5	41.0	0.5	47.0	1.0	99.0	0.5	38.0	0.5	ND	0.1
o-Xylene			5.4	0.5	10.0	0.5	6.5	1.0	2.6	0.5	3.0	0.5	ND	0.1
Cumene (Isopropylbenzene)	7.4E-02	2,500	2.8	0.5	2.8	0.5	1.3	1.0	5.1	0.5	4.6	0.5	ND	0.1
Naphthalene	3.8E-04	25	13.0	0.5	8.6	0.5	ND	1.0	15.0	0.5	9.5	0.5	ND	0.1
1,2,4-Trimethylbenzene	8.1E-03	25	47.0	0.5	35.0	0.5	92.0	1.0	100.0	0.5	96.0	0.5	ND	0.1
1,3,5-Trimethylbenzene	8.7E-03	300	28.0	0.5	19.0	0.5	26.0	1.0	33.0	0.5	24.0	0.5	ND	0.1
1,2-Dichloroethane (EDC)	4.8E-05	0.5	ND	0.5	ND	0.5	ND	1.0	ND	0.5	ND	0.5	ND	0.1
1,2-Dibromoethane (EDB)	2.1E-06	0.005	ND	0.5	ND	0.5	ND	1.0	ND	0.5	ND	0.5	ND	0.1

Sample #	Risk-based SSL	Used Aquifers TDS ≤ 2500 Non-Residential	CSXSB02 (53-54)		CSXSB02 (56-58)		CSXSB02 (56-58)-O		CSXSB03 (51')		CSXSB03 (56')		CSXSB03 (60')	
Depth			53-54'		56-58'		56-58'		51'		56'		60'	
Date Collected			9/22/2003		9/22/2003		9/22/2003		9/17/2003		9/17/2003		9/17/2003	
Media			Soil		Soil		Soil		Soil		Soil		Soil	
Units	mg/kg	mg/kg	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Comments				PQL		PQL	Duplicate	PQL		PQL		PQL		PQL
Benzene	2.3E-04	0.5	ND	0.2	ND	0.2	ND	0.5	ND	5.0	ND	5.0	ND	5.0
Toluene	7.6E-02	100	ND	0.2	ND	0.2	ND	0.5	ND	5.0	ND	5.0	ND	5.0
Ethylbenzene	1.7E-03	70	ND	0.2	ND	0.2	0.6	0.5	ND	5.0	0.4	5.0	0.3	5.0
m,p-Xylenes		1,000	ND	0.2	ND	0.2	1.3	0.5	ND	5.0	2.8	5.0	1.6	5.0
o-Xylene			ND	0.2	ND	0.2	ND	0.5	ND	5.0	ND	5.0	ND	5.0
Cumene (Isopropylbenzene)	7.4E-02	2,500	ND	0.2	ND	0.2	1.1	0.5	ND	5.0	3.6	5.0	2.7	5.0
Naphthalene	3.8E-04	25	3.5	0.2	1.0	0.2	1.7	0.5	ND	5.0	5.6	5.0	3.5	5.0
1,2,4-Trimethylbenzene	8.1E-03	25	ND	0.2	1.7	0.2	5.0	0.5	9.8	5.0	12	5.0	5.2	5.0
1,3,5-Trimethylbenzene	8.7E-03	300	ND	0.2	0.7	0.2	2.0	0.5	7.5	5.0	9.1	5.0	9.8	5.0
1,2-Dichloroethane (EDC)	4.8E-05	0.5	ND	0.2	ND	0.2	ND	0.5	ND	5.0	ND	5.0	ND	5.0
1,2-Dibromoethane (EDB)	2.1E-06	0.005	ND	0.2	ND	0.2	ND	0.5	ND	5.0	ND	5.0	ND	5.0

Sample #	Risk-based SSL	Used Aquifers TDS ≤ 2500 Non-Residential	CSXSB04 (48-49)		CSXSB04 (54-56)		CSXSB04 (56-58)		CSXSB05 (47-48)		CSXSB05 (54-56)	
Depth			48-49'		54-56'		56-58'		47-48'		54-56'	
Date Collected			8/28/2003		8/28/2003		8/28/2003		9/16/2003		9/16/2003	
Media			Soil		Soil		Soil		Soil		Soil	
Units	mg/kg	mg/kg	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Comments				PQL		PQL		PQL		PQL		PQL
Benzene	2.3E-04	0.5	ND	1.0	ND	0.5	1.9	1.0	ND	0.5	0.8	0.5
Toluene	7.6E-02	100	ND	1.0	ND	0.5	2.0	1.0	ND	0.5	0.8	0.5
Ethylbenzene	1.7E-03	70	ND	1.0	ND	0.5	1.7	1.0	3.1	0.5	0.6	0.5
m,p-Xylenes		1,000	3.6	1.0	ND	0.5	4.7	1.0	3.9	0.5	1.5	0.5
o-Xylene			ND	1.0	ND	0.5	1.4	1.0	ND	0.5	ND	0.5
Cumene (Isopropylbenzene)	7.4E-02	2,500	1.5	1.0	1.8	0.5	7.3	1.0	1.1	0.5	1.2	0.5
Naphthalene	3.8E-04	25	3.4	1.0	ND	0.5	ND	1.0	3.5	0.5	0.6	0.5
1,2,4-Trimethylbenzene	8.1E-03	25	18	1.0	ND	0.5	1.5	1.0	12.0	0.5	0.8	0.5
1,3,5-Trimethylbenzene	8.7E-03	300	3.9	1.0	ND	0.5	1.3	1.0	3.9	0.5	1.3	0.5
1,2-Dichloroethane (EDC)	4.8E-05	0.5	ND	1.0	ND	0.5	ND	1.0	ND	0.5	ND	0.5
1,2-Dibromoethane (EDB)	2.1E-06	0.005	ND	1.0	ND	0.5	ND	1.0	ND	0.5	ND	0.5

PQL-practical quantitation limit

Table 3. Building 8 UST Soil Analytical Results
(Louis Berger, 1998)

Sample ID:						08WOT-01-01-08	08WOT-01-03-12	08WOT-01-04-16	08WOT-02-03-10	08WOT-02-04-16	08WOT-03-01-08	08WOT-03-02-08	08WOT-03-03-10
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		BUILDING 8 UST	BUILDING 8 UST	BUILDING 8 UST	BUILDING 8 UST	BUILDING 8 UST	BUILDING 8 UST	BUILDING 8 UST	BUILDING 8 UST
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	8	12	16	10	16	8	8	10
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	7/20/1996	7/20/1996	7/20/1996	7/20/1996	6/7/1996	6/7/1996	6/7/1996	6/7/1996
Concentration													
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	0.002	NA	NA	NA	NA	0.002	0.002	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	0.002	NA	NA	NA	NA	0.002	0.002	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	NA	0.38	NA	NA	NA	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	0.002	NA	NA	NA	NA	0.002	0.002	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	0.002	NA	NA	NA	NA	0.002	0.002	NA
Lead (mg/kg)		0.5	450	0.5	450	NA	7.79						
GRO (mg/kg)						NA	NA	NA	NA	NA	NA	NA	NA
DRO (mg/kg)						2.5	3.3	2.7	1.5	.88 U	NA	NA	50
MTBE (mg/kg)	3.2E-03	13	23	53	93	NA	NA	NA	NA	NA	NA	NA	NA

Sample ID:						08WOT-03-04-12	08WOT-03-06-16	08WOT-04-02-08	08WOT-04-04-16	08WOT-02-01-06	08WOT-02-02-06	08WOT-04-01-04	08WOT-04-03-08
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		BUILDING 8 UST	BUILDING 8 UST	BUILDING 8 UST	BUILDING 8 UST	BUILDING 8 UST	BUILDING 8 UST	BUILDING 8 UST	BUILDING 8 UST
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	12	16	8	16	6	6	4	8
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	7/20/1996	7/20/1996	6/7/1996	7/20/1996	7/20/1996	7/20/1996	7/20/1996	7/20/1996
Concentration													
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	NA	NA	NA				
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA	NA				
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	NA	NA				
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	NA	NA	NA				
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	NA	NA	NA				
Lead (mg/kg)		0.5	450	0.5	450		6.72	NA	NA	5.81	6.14	NA	NA
GRO (mg/kg)						NA	NA	NA	NA				
DRO (mg/kg)						110	.86 U	,96 U	.87 U				
MTBE (mg/kg)	3.2E-03	13	23	53	93	NA	NA	NA	NA				

Table 4. Building 9 Gas Station Soil Analytical Results
(Louis Berger, 1998)

Sample ID:						GSUST-01-01-08	GSUST-01-03-10	GSUST-01-04-12	GSUST-01-06-14	GSUST-01-08-20	GSUST-02-01-10
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		BUILDING 9 GAS STATION	BUILDING 9 GAS STATION	BUILDING 9 GAS STATION	BUILDING 9 GAS STATION	BUILDING 9 GAS STATION	BUILDING 9 GAS STATION
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	8	10	12	14	20	10
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/26/1996	6/26/1996	6/26/1996	6/26/1996	6/26/1996	6/27/1996
Concentration											
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	NA	NA	NA	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA	NA	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	NA	NA	NA	0.4
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	NA	NA	NA	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	NA	NA	NA	NA	NA
Lead (mg/kg)		0.5	450	0.5	450	NA	NA	7.84	NA	NA	146
GRO (mg/kg)						NA	NA	NA	1.1	1.1	5.6
DRO (mg/kg)						NA	NA	NA	NA	NA	NA
MTBE (mg/kg)	3.2E-03	13	23	53	93	0.0006	0.0006	0.0006	NA	NA	0.0006

Sample ID:						GSUST-02-03-16	GSUST-02-05-16	GSUST-03-01-10	GSUST-03-02-12	GSUST-04-01-06	GSUST-04-02-08
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		BUILDING 9 GAS STATION	BUILDING 9 GAS STATION	BUILDING 9 GAS STATION	BUILDING 9 GAS STATION	BUILDING 9 GAS STATION	BUILDING 9 GAS STATION
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	16	16	10	12	6	8
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/27/1996	6/27/1996	6/27/1996	6/27/1996	6/27/1996	6/27/1996
Concentration											
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	NA	NA	NA	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA	NA	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	NA	NA	NA	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	NA	NA	NA	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	NA	NA	NA	NA	NA
Lead (mg/kg)		0.5	450	0.5	450	8.66	NA	NA	15.3	NA	38.3
GRO (mg/kg)						3.8	NA	2.1	NA	1.2	5.8
DRO (mg/kg)						NA	NA	NA	NA	NA	NA
MTBE (mg/kg)	3.2E-03	13	23	53	93	0.00057	0.00054	0.0006	NA	NA	NA

Sample ID:						GSUST-04-03-08	GSUST-04-04-10	GSUST-04-05-12	GSUST-04-06-16	GSUST-04-07-16
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		BUILDING 9 GAS STATION	BUILDING 9 GAS STATION	BUILDING 9 GAS STATION	BUILDING 9 GAS STATION	BUILDING 9 GAS STATION
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	8	10	12	16	16
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/27/1996	6/27/1996	6/27/1996	6/27/1996	6/27/1996
Concentration										
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	NA	NA	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	NA	NA	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	NA	NA	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	NA	NA	NA	NA
Lead (mg/kg)		0.5	450	0.5	450	NA	NA	NA	3.69	NA
GRO (mg/kg)						7.3	NA	20	1.1	NA
DRO (mg/kg)						NA	NA	NA	NA	NA
MTBE (mg/kg)	3.2E-03	13	23	53	93	NA	0.00061	NA	0.00061	0.00056

Table 5. Building 28 USTs/Piping Soil Analytical Results
(Louis Berger, 1998)

Sample ID:						28UST-01-01-08	28UST-01-03-16	28UST-02-01-06	28UST-02-03-16	28UST-03-01-08
Boring Location:	*Risk-Based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	8	16	6	16	8
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/19/1996	6/19/1996	6/19/1996	6/19/1996	6/19/1996
Concentration										
GRO (mg/kg)						1.2	1.1	1.2	1.1	1.2
DRO (mg/kg)						NA	NA	NA	NA	NA
MTBE (mg/kg)	3.2E-03	13	23	53	93	NA	NA	NA	NA	NA

Sample ID:						28UST-03-02-14	28UST-04-02-14	28UST-04-01-08	28UST-05-02-14	28UST-06-01-08
Boring Location:	*Risk-Based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	14	14	8	14	8
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/19/1996	6/20/1996	6/20/1996	6/20/1996	6/20/1996
Concentration										
GRO (mg/kg)						1.5	1.1	5.4	110	45
DRO (mg/kg)						NA	NA	NA	NA	NA
MTBE (mg/kg)	3.2E-03	13	23	53	93	NA	NA	NA	NA	NA

Sample ID:						28UST-06-03-16	28UST-07-01-08	28UST-07-02-08	28UST-07-03-14	28UST-08-01-08
Boring Location:	*Risk-Based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	16	8	8	14	8
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/20/1996	6/20/1996	6/20/1996	6/20/1996	6/20/1996
Concentration										
GRO (mg/kg)						8.9	2.9	1.9	1.1	1.2
DRO (mg/kg)						NA	NA	NA	NA	NA
MTBE (mg/kg)	3.2E-03	13	23	53	93	NA	NA	NA	NA	NA

Sample ID:						28UST-08-02-16	28UST-09-01-06	28UST-10-01-08	28UST-10-02-16	28UST-12-01-08
Boring Location:	*Risk-Based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	16	6	8	16	8
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/20/1996	6/20/1996	6/21/1996	6/21/1996	6/21/1996
Concentration										
GRO (mg/kg)						1.4	5.9	3.1	120	18
DRO (mg/kg)						NA	NA	NA	NA	NA
MTBE (mg/kg)	3.2E-03	13	23	53	93	NA	NA	NA	NA	NA

Table 5. Building 28 USTs/Piping Soil Analytical Results
(Louis Berger, 1998)

Sample ID:						28UST-13-01-16	28UST-16-01-8.5	28UST-17-01-08	28UST-23-01-08	28UST-24-01-16
Boring Location:		*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	16	8.5	8	8	16
Date:		*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/24/1996	6/24/1996	6/24/1996	6/25/1996	6/25/1996
Concentration										
GRO (mg/kg)						2.2	17	27	1.4	3.6
DRO (mg/kg)						NA	NA	NA	NA	NA
MTBE (mg/kg)		13	23	53	93	NA	NA	NA	NA	NA

Sample ID:						28UST-25-01-12	28UST-26-01-06	28UST-26-03-12	28TP-02-01-03	28TP-03-01-03
Boring Location:		*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	12	6	12	3	3
Date:		*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/25/1996	6/25/1996	6/25/1996	6/20/1996	6/20/1996
Concentration										
GRO (mg/kg)						1.1	1.1	1.1	1.2	1.2
DRO (mg/kg)						NA	NA	NA	NA	NA
MTBE (mg/kg)		13	23	53	93	NA	NA	NA	NA	NA

Sample ID:						28TP-04-01-03	28TP-05-04-04	28TP-06-01-2.8	28TP-07-01-3.9	28TP-07-02-3.9
Boring Location:		*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	3	4	2.8	3.9	3.9
Date:		*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/20/1996	6/20/1996	6/21/1996	6/21/1996	6/21/1996
Concentration										
GRO (mg/kg)						1.5	NA	1.4	3.2	13
DRO (mg/kg)						NA	15	NA	NA	NA
MTBE (mg/kg)		13	23	53	93	NA	NA	NA	NA	NA

Sample ID:						28TP-08-01-3.2	28TP-09-01-04
Boring Location:		*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		BUILDING 28 USTs/PIPING	BUILDING 28 USTs/PIPING
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	3.2	4
Date:		*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/21/1996	6/21/1996
Concentration							
GRO (mg/kg)						66	9.4
DRO (mg/kg)						NA	NA
MTBE (mg/kg)		13	23	53	93	NA	NA

Table 6. Building 46 UST Soil Analytical Results
(Louis Berger, 1998)

Sample ID:						**46UST 01-2.0**	**46UST 02-12**	**46UST 03-14**	**46UST 04-16**	**46UST 05-2.0**	**46UST 06-8.0**	**46UST 07-12**	**46UST 08-16**
Boring Location:	***Risk-based SSL***	***Used Aquifers TDS ≤ 2500 Residential***		***Used Aquifers TDS ≤ 2500 Non-Residential***		**Building 46 UST**	**Building 46 UST**	**Building 46 UST**	**Building 46 UST**	**Building 46 UST**	**Building 46 UST**	**Building 46 UST**	**Building 46 UST**
Depth (ft):		***100 X GW MSC***	***Generic Value***	***100 X GW MSC***	***Generic Value***	**2**	**12**	**14**	**16**	**2**	**8**	**12**	**16**
Date:		***(MG/KG)***	***(MG/KG)***	***(MG/KG)***	***(MG/KG)***	**6/7/1996**	**6/7/1996**	**6/7/1996**	**6/7/1996**	**6/7/1996**	**6/7/1996**	**6/7/1996**	**6/7/1996**
Concentration													
Lead (mg/kg)		0.5	450	0.5	450	72.7	6.84	7.7	7.4	37	20.5	11.9	6.43
DRO (mg/kg)						5	0.85	0.84	0.86	8.2	0.94	0.89	0.85
MTBE (mg/kg)	3.2E-03	13	23	53	93	0.00054	0.00053	0.00053	0.00054	0.00058	0.00059	0.00056	0.00053

Table 7. Bulk Storage ASTs/Utility Trench Soil Analytical Results
(Louis Berger, 1998)

Sample ID:						BSUT-01-01-08	BSUT-01-02-08	BSUT-01-03-14	BSUT-01-04-14	BSUT-02-01-08
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	8	8	14	14	8
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/13/1996	6/13/1996	6/13/1996	6/13/1996	6/13/1996
Concentration										
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	NA	NA	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	0.36	0.36	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	NA	NA	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	NA	NA	NA	NA
Lead (mg/kg)	-	0.5	450	0.5	450	NA	NA	NA	NA	NA
DRO (mg/kg)	-					300	280	NA	NA	600

Sample ID:						BSUT-02-03-12	BSUT-03-01-08	BSUT-03-03-10	BSUT-03-04-12	BSUT-04-01-08
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	12	8	10	12	8
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/13/1996	6/18/1996	6/18/1996	6/18/1996	6/18/1996
Concentration										
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	NA	NA	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	0.4	NA	NA	0.4	0.41
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	NA	NA	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	NA	NA	NA	NA
Lead (mg/kg)		0.5	450	0.5	450	NA	NA	NA	NA	NA
DRO (mg/kg)						NA	0.99	1.2	NA	NA

Sample ID:						BSUT-04-02-08	BSUT-04-03-08	BSUT-04-04-14	BSUT-04-06-16	BSUT-04-07-16
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	8	8	14	16	16
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/18/1996	6/18/1996	6/18/1996	6/18/1996	6/18/1996
Concentration										
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	NA	NA	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	0.41	NA	NA	NA	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	NA	NA	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	NA	NA	NA	NA
Lead (mg/kg)		0.5	450	0.5	450	NA	NA	NA	NA	NA
DRO (mg/kg)						NA	2.7	0.88	0.85	0.85

Sample ID:						BSUT-05-03-12	BSUT-05-04-12	BSUT-05-05-14	BSUT-05-06-14	BSUT-06-01-08
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	12	12	14	14	8
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/18/1996	6/18/1996	6/18/1996	6/18/1996	6/18/1996
Concentration										
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	NA	NA	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	0.38	0.4	NA	NA	0.4
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	NA	NA	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	NA	NA	NA	NA
Lead (mg/kg)		0.5	450	0.5	450	NA	NA	NA	NA	NA
DRO (mg/kg)						NA	NA	0.87	0.86	NA

Table 7. Bulk Storage ASTs/Utility Trench Soil Analytical Results
(Louis Berger, 1998)

Sample ID:						BSUT-07-01-08	BSUT-08-01-08	BSAST-01-0.5	BSAST-01-2.6	BSAST-02-0.5
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	8	8	0.5	2.6	0.5
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/18/1996	6/18/1996	6/7/1996	6/7/1996	6/7/1996
Concentration										
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	NA	NA	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	0.4	0.42	NA	0.37	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	NA	NA	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	NA	NA	NA	NA
Lead (mg/kg)	-	0.5	450	0.5	450	NA	NA	829		275
DRO (mg/kg)	-					NA	NA	NA	0.98	NA

Sample ID:						BSAST-02-05	BSAST-03-2.8	BSAST-04-01-05	BSAST-05-01-0.5	BSAST-05-01-05
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	5	2.8	5	0.5	5
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/7/1996	6/7/1996	6/26/1996	6/26/1996	6/26/1996
Concentration										
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	NA	NA	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	0.44	NA	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	NA	NA	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	NA	NA	NA	NA
Lead (mg/kg)	-	0.5	450	0.5	450				217	
DRO (mg/kg)	-					2.4	0.99	3.4		0.96

Sample ID:						BSAST-06-01-0.5	BSAST-06-03-0.5	BSAST-06-04-05
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench	Bulk Storage ASTs/Utility Trench
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	0.5	0.5	5
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/26/1996	6/26/1996	6/26/1996
Concentration								
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	NA	NA
Lead (mg/kg)	-	0.5	450	0.5	450	109	32.1	
DRO (mg/kg)	-					NA	NA	.88 U

Table 8. Oregon Avenue UST Area Soil Analytical Results
(Louis Berger, 1998)

Sample ID:						OTUST-01-01-14	OTUST-01-02-20	OTUST-02-01-14	OTUST-02-02-20	OTUST-03-01-12	OTUST-03-02-16
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	14	20	14	20	12	16
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/10/1996	6/10/1996	6/10/1996	6/10/1996	6/10/1996	6/10/1996
Concentration											
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	0.002	NA	NA	NA	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	0.002	NA	NA	NA	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	NA	NA	NA	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	0.002	NA	NA	NA	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	0.002	NA	NA	NA	NA	NA
Lead (mg/kg)		0.5	450	0.5	450	NA	NA	NA	NA	NA	NA
GRO (mg/kg)								NA	NA	NA	NA
DRO (mg/kg)						0.88	0.89	0.87	0.9	0.83	0.88

Sample ID:						OTUST-04-01-12	OTUST-04-02-16	OTUST-05-01-12	OTUST-05-02-16	OTUST-05-03-16	OTUST-06-01-08
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	12	16	12	16	16	8
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/10/1996	6/10/1996	6/10/1996	6/10/1996	6/10/1996	6/11/1996
Concentration											
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	0.002	NA	NA	0.01	0.02
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	0.002	NA	0.0257	0.024	1.23
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	NA	NA		NA
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	0.0078	NA	0.0113	0.01	0.02
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	0.0508	NA	0.112	0.101	4.61
Lead (mg/kg)		0.5	450	0.5	450	NA	NA	NA	NA	NA	NA
GRO (mg/kg)						NA	NA	NA	NA	NA	NA
DRO (mg/kg)						4	150	8.7	170	160	750

Sample ID:						OTUST-06-02-12	OTUST-07-01-12	OTUST-07-02-16	OTUST-08-01-12	OTUST-08-02-16	OTUST-09-01-13
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	12	12	16	12	16	13
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/11/1996	6/11/1996	6/11/1996	6/11/1996	6/11/1996	6/11/1996
Concentration											
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	NA	NA	NA	NA	0.01
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA	NA	NA	0.01
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	NA	NA	NA	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	NA	NA	NA	NA	0.01
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	NA	NA	NA	NA	0.01
Lead (mg/kg)		0.5	450	0.5	450	NA	NA	NA	NA	NA	NA
GRO (mg/kg)						NA	NA	NA	NA	NA	NA
DRO (mg/kg)						610	13	0.85	0.89	0.89	580

Table 8. Oregon Avenue UST Area Soil Analytical Results
(Louis Berger, 1998)

Sample ID:						OTUST-09-02-17	OTUST-10-01-12	OTUST-10-02-16	OTUST-11-01-10	OTUST-11-02-14	OTUST-11-03-16
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	17	12	16	10	14	16
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/11/1996	6/11/1996	6/11/1996	6/11/1996	6/11/1996	6/11/1996
Concentration											
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	NA	NA	NA	NA	0.01
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA	NA	NA	0.01
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	NA	NA	NA	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	NA	NA	NA	NA	0.01
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	NA	NA	NA	NA	0.0572
Lead (mg/kg)		0.5	450	0.5	450	NA	NA	NA	NA	NA	NA
GRO (mg/kg)						NA	NA	NA	NA	NA	
DRO (mg/kg)						0.89	34	950	51	14	NA
Sample ID:						OTUST-12-01-08	OTUST-12-02-16	OTUST-12-03-16	OTUST-13-01-08	OTUST-13-02-12	OTUST-14-02-10
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	8	16	16	8	12	10
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996
Concentration											
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	0.002	NA	NA	0.02	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA	0.02	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	NA	NA	NA	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	0.002	NA	NA	0.02	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	0.002	NA	NA	0.02	NA	NA
Lead (mg/kg)		0.5	450	0.5	450	NA	NA	NA	NA	NA	NA
GRO (mg/kg)								NA	NA	NA	NA
DRO (mg/kg)						130	110	100	NA	91	17

Sample ID:						OTUST-14-03-12	OTUST-14-04-16	OTUST-15-01-10	OTUST-15-02-10	OTUST-16-01-10	OTUST-16-02-10
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	12	16	10	10	10	10
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/12/1996
Concentration											
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	0.002	NA	NA	NA	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	0.002	NA	NA	NA	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	NA	NA	NA	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	0.002	NA	NA	NA	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	0.002	NA	NA	NA	NA	NA
Lead (mg/kg)		0.5	450	0.5	450	NA	NA	NA	NA	NA	NA
GRO (mg/kg)						NA	NA	NA	NA	NA	NA
DRO (mg/kg)						NA	32	0.89	0.89	28	27

Table 8. Oregon Avenue UST Area Soil Analytical Results
(Louis Berger, 1998)

Sample ID:						OTUST-16-03-16	OTUST-16-04-16	OTUST-17-01-10	OTUST-17-02-10	OTUST-18-03-12	OTUST-18-04-16
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	16	16	10	10	12	16
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/12/1996	6/12/1996	6/12/1996	6/12/1996	6/13/1996	6/13/1996
Concentration											
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	NA	NA	NA	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	NA	NA	NA	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	NA	NA	NA	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	NA	NA	NA	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	NA	NA	NA	NA	NA
Lead (mg/kg)	-	0.5	450	0.5	450	NA	NA	NA	NA	NA	NA
GRO (mg/kg)	-					NA	NA	NA	NA	NA	NA
DRO (mg/kg)	-					2.4	2.5	0.86	1.1	3300	750

Sample ID:						OTUST-18-05-16	OTUST-18-06-20	OTUST-19-02-14	OTUST-19-03-18	OTUST-20-02-12	OTUST-20-03-20
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area	Oregon Avenue UST Area
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	16	20	14	18	12	20
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	6/13/1996	6/13/1996	6/13/1996	6/13/1996	6/13/1996	6/13/1996
Concentration											
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	NA	0.02	NA	NA	NA	NA
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	NA	0.0356	NA	NA	NA	NA
naphthalene (mg/kg)	3.8E-04	10	25	10	25	NA	NA	NA	NA	NA	NA
toluene (mg/kg)	7.6E-02	100	44	100	44	NA	0.02	NA	NA	NA	NA
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	NA	0.132	NA	NA	NA	NA
Lead (mg/kg)	-	0.5	450	0.5	450	NA	NA	NA	NA	NA	NA
GRO (mg/kg)	-					NA	NA	NA	NA	NA	NA
DRO (mg/kg)	-					1900	NA	2400	8.5	170	0.89

Table 9. Septa Southern Garage Soil Analytical Results
(Dames and Moore, 1997)

Sample ID:						MW-1	MW-1	MW-1	MW-1	MW-1
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		SEPTA Southern Garage	SEPTA Southern Garage	SEPTA Southern Garage	SEPTA Southern Garage	SEPTA Southern Garage
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	7	12	17	22.5	27
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	4/30/1991	4/30/1991	4/30/1991	4/30/1991	4/30/1991
Concentration										
TPH (mg/kg)						290	110	560	42	1300

Sample ID:						MW-2	MW-2	MW-2	MW-2	MW-2
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		SEPTA Southern Garage	SEPTA Southern Garage	SEPTA Southern Garage	SEPTA Southern Garage	SEPTA Southern Garage
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	7	11	17	22	27
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	4/30/1991	4/30/1991	4/30/1991	4/30/1991	4/30/1991
Concentration										
TPH (mg/kg)						ND	290	ND	ND	ND

Sample ID:						MW-3	MW-3	MW-3	MW-3
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		SEPTA Southern Garage	SEPTA Southern Garage	SEPTA Southern Garage	SEPTA Southern Garage
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	7	12	22	27
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	4/30/1991	4/30/1991	4/30/1991	4/30/1991
Concentration									
TPH (mg/kg)						ND	ND	ND	110

Table 10. Site Wide Soil Analytical Results
(Kemron/Versar, 1995)

Sample ID:						MW-9	MW-9	MW-10	MW-10	MW-11	MW-11	MW-12
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Site Wide	Site Wide	Site Wide	Site Wide	Site Wide	Site Wide	Site Wide
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	20-22	22-24	6-8'	10-12'	18-20'	20-22'	16-18
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*							
Concentration												
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	0.06	0.1	<0.006	<0.0066	<6.8	<6.6	<0.68
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	<0.0077	0.068	<0.006	<0.0066	58	62	<0.68
naphthalene (mg/kg)	3.8E-04	10	25	10	25	<0.25	<0.21	<0.19	0.84	14	24	5.9
toluene (mg/kg)	7.6E-02	100	44	100	44	<0.0077	0.027	<0.006	<0.0066	<6.8	<6.6	<0.68
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	<0.0077	0.49	<0.006	<0.0066	210	190	<0.68
Lead (mg/kg)		0.5	450	0.5	450	71	12	600	1200	5.7	5	4
GRO (mg/kg)						0.31	1.5	<0.12	<0.13	5,400	6,100	100
DRO (mg/kg)						28	16	23	1,300	7,600	7,300	1,500
TPH (mg/kg)						88	110	<30	<33	13,000	16,000	1,900

Sample ID:						MW-12	MW-13	MW-13	MW-14	MW-14	MW-15	MW-15
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Site Wide	Site Wide	Site Wide	Site Wide	Site Wide	Site Wide	Site Wide
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	18-20	16-18	18-20	18-20	20-22	14-16	20-22
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*							
Concentration												
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	<0.67	<0.0056	<0.0056	<0.0055	26	<0.0061	<7.2
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	<0.67	<0.0056	<0.0056	6.3	120	<0.0061	76
naphthalene (mg/kg)	3.8E-04	10	25	10	25	12	<0.18	<0.18	3.6	4.4	<0.2	51
toluene (mg/kg)	7.6E-02	100	44	100	44	<0.67	<0.0056	<0.0056	<0.0055	17	<0.0061	<7.2
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	<0.67	<0.0056	<0.0056	29	690	<0.0061	220
Lead (mg/kg)		0.5	450	0.5	450	3.8	2.6	1.9	4.9	4.5	12	5.5
GRO (mg/kg)						370	<0.11	<0.11	2,400	16,000	<0.12	6,000
DRO (mg/kg)						2800	<11	<11	1,300	9,700	<12	10,000
TPH (mg/kg)						3,600	<28	<28	1500	19000	NA	7300

Sample ID:						MW-16	MW-16	MW-17	MW-17	MW-18	MW-19	MW-19
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Site Wide	Site Wide	Site Wide	Site Wide	Site Wide	Site Wide	Site Wide
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	14-16	20-22	16-18	18-20	14-16	8-10'	18-20
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*							
Concentration												
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	<0.0054	<0.0056	<0.006	<0.0051	<0.0061	<0.0061	<0.006
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	<0.0054	<0.0056	<0.006	<0.0051	<0.0061	<0.0061	<0.006
naphthalene (mg/kg)	3.8E-04	10	25	10	25	<0.17	<0.18	<0.19	<0.16	<0.2	<0.2	<0.19
toluene (mg/kg)	7.6E-02	100	44	100	44	<0.0054	<0.0056	<0.006	<0.0051	<0.0061	<0.0061	<0.006
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	<0.0054	<0.0056	<0.006	<0.0051	<0.0061	<0.0061	<0.006
Lead (mg/kg)		0.5	450	0.5	450	5.1	3.4	6	3.8	8	7.4	4
GRO (mg/kg)						<0.11	<0.11	<0.12	<0.12	<0.12	<0.12	<0.12
DRO (mg/kg)						<11	<11	<12	10	<12	<12	<12
TPH (mg/kg)						<27	<28	<30	<25	<30	<30	300

Table 10. Site Wide Soil Analytical Results
(Kemron/Versar, 1995)

Sample ID:						MW-20	MW-20	MW-6D	MW-6D	CSX-1	CSX-1	CSX-2
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Site Wide	Site Wide	Site Wide	Site Wide	Site Wide	Site Wide	Site Wide
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	4-6'	20-22	18-20	20-22	46-48	48-50	44-46
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*							
Concentration												
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	0.0094	<0.0057	<0.006	<0.029	<0.0056	<0.0056	<0.027
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	<0.0059	<0.0057	<0.006	24	<0.0056	<0.0056	<0.027
naphthalene (mg/kg)	3.8E-04	10	25	10	25	<0.19	<0.18	<0.19	9.5	<0.18	<0.18	0.66
toluene (mg/kg)	7.6E-02	100	44	100	44	<0.0059	<0.0057	<0.006	12	<0.0056	<0.0056	<0.027
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	<0.0059	<0.0057	0.03	150	<0.0056	<0.0056	<0.027
Lead (mg/kg)		0.5	450	0.5	450	74	22	20	13	7.3	6	5.8
GRO (mg/kg)						0.18	<0.11	13	3,400	<0.11	<0.11	230
DRO (mg/kg)						12	24	71	2400	<11	<11	210
TPH (mg/kg)						130	850	110	2700	<28	<28	620

Sample ID:						CSX-2	DB-113	DB-210	DB-217	DB-301	DB-401
Boring Location:	*Risk-based SSL*	*Used Aquifers TDS ≤ 2500 Residential*		*Used Aquifers TDS ≤ 2500 Non-Residential*		Site Wide	Site Wide	Site Wide	Site Wide	Site Wide	Site Wide
Depth (ft):		*100 X GW MSC*	*Generic Value*	*100 X GW MSC*	*Generic Value*	46-48	24-26	18-20	32-34	12-14'	10-12'
Date:	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*		8/20/1996	8/21/1996	8/22/1996	8/27/1996	8/29/1996
Concentration											
Benzene (mg/kg)	2.3E-04	0.5	0.13	0.5	0.13	<0.028					
Ethyl Benzene (mg/kg)	1.7E-03	70	46	70	46	<0.028					
naphthalene (mg/kg)	3.8E-04	10	25	10	25	0.79					
toluene (mg/kg)	7.6E-02	100	44	100	44	<0.028					
Total Xylenes (mg/kg)	1.9E-02	1,000	990	1,000	990	0.037					
Lead (mg/kg)		0.5	450	0.5	450	5.3					
GRO (mg/kg)						180	237	ND	ND	ND	ND
DRO (mg/kg)						150	0.374	ND	2.38	ND	ND
TPH (mg/kg)						460					

Table 11. 2024 Near-Source Soil Analytical Results

							CLIENT ID:	VES Bldg_NS-A_14.5				Bldg30_NS-A_14.5				Bldg30_NS-B_14.5				Bldg6_NS-A_13.5				Bldg6_NS-B_14.5			
							LAB ID:	3346845016				3346845009				3346845015				3346845006				3346845018			
							COLLECTION DATE:	2/21/2024				2/20/2024				2/21/2024				2/16/2024				2/19/2024			
		Used Aquifers TDS ≤ 2500 Residential		*Used Aquifers TDS ≤ 2500 Non-Residential*		*RSL*																					
		100 X GW MSC	*Generic Value*	*100 X GW MSC*	*Generic Value*	*SSL*																					
ANALYTE	***CAS NUMBER***	***(MG/KG)***	***(MG/KG)***	***(MG/KG)***	***(MG/KG)***	***(MG/KG)***	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**
Volatile Organic Compounds (VOCs)																											
BENZENE	71-43-2	0.5	0.13	0.5	0.13	2.3E-04	ND	U	0.0453	0.0104	**0.0524**		0.0486	0.0112	ND	U	0.0473	0.0109	ND	U	0.0537	0.0124	ND	U	0.0525	0.0121
CUMENE (ISOPROPYL BENZENE)	98-82-8	84	600	350	2,500	7.4E-02	ND	U	0.0453	0.01	ND	U	0.0486	0.0107	ND	U	0.0473	0.0104	ND	U	0.0537	0.0118	ND	U	0.0525	0.0116
DIBROMOETHANE, 1,2- (ETHYLENE DIBROMIDE)	106-93-4	0.005	0.0012	0.005	0.0012	2.1E-06	ND	U	0.0453	0.0127	ND	U	0.0486	0.0136	ND	U	0.0473	0.0133	ND	U	0.0537	0.015	ND	U	0.0525	0.0147
DICHLOROETHANE, 1,2-	107-06-2	0.5	0.1	0.5	0.1	4.8E-05	ND	U	0.0453	0.0145	ND	U	0.0486	0.0156	ND	U	0.0473	0.0151	ND	U	0.0537	0.0172	ND	U	0.0525	0.0168
ETHYL BENZENE	100-41-4	70	46	70	46	1.7E-03	ND	U	0.0453	0.0154	ND	U	0.0486	0.0165	ND	U	0.0473	0.0161	ND	U	0.0537	0.0183	ND	U	0.0525	0.0179
TOLUENE	108-88-3	100	44	100	44	7.6E-02	ND	U	0.0453	0.0104	ND	U	0.0486	0.0112	ND	U	0.0473	0.0109	ND	U	0.0537	0.0124	ND	U	0.0525	0.0121
XYLENES (TOTAL)	1330-20-7	1,000	990	1,000	990	1.9E-02	ND	U	0.136	0.0299	ND	U	0.146	0.0321	ND	U	0.142	0.0312	ND	U	0.161	0.0354	ND	U	0.158	0.0347
NAPHTHALENE	91-20-3	10	25	10	25	3.8E-04	ND	U	0.0906	0.0154	ND	U	0.0972	0.0165	ND	U	0.0947	0.0161	ND	U	0.107	0.0183	ND	U	0.105	0.0179
TRIMETHYLBENZENE, 1,2,4- (TRIMETHYLBENZENE, 1,3,4-)	95-63-6	13	73	53	300	8.1E-03	ND	U	0.0453	0.0113	ND	U	0.0486	0.0122	ND	U	0.0473	0.0118	ND	U	0.0537	0.0134	ND	U	0.0525	0.0131
TRIMETHYLBENZENE, 1,3,5-	108-67-8	13	23	53	93	8.7E-03	ND	U	0.0453	0.0091	ND	U	0.0486	0.0097	ND	U	0.0473	0.0095	ND	U	0.0537	0.0107	ND	U	0.0525	0.0105
Total Metals																											
LEAD	7439-92-1	0.5	450	0.5	450	-	**6.8**		1.1	0.36	**7.6**		1.1	0.35	**3.7**		1	0.33	**4.2**		1	0.33	**3.4**		0.96	0.32

							CLIENT ID:	Bldg12_NS-A_14.5				Bldg12_NS-B_14.5				Bldg9_NS-A_14.5				Bldg9_NS-B_14.5				Bldg9_NS-C_12.5			
							LAB ID:	3346845007				3346845008				3346845001				3346845002				3346845003			
							COLLECTION DATE:	2/19/2024				2/19/2024				2/12/2024				2/12/2024				2/12/2024			
		Used Aquifers TDS ≤ 2500 Residential		*Used Aquifers TDS ≤ 2500 Non-Residential*		*RSL*																					
		100 X GW MSC	*Generic Value*	*100 X GW MSC*	*Generic Value*	*SSL*																					
ANALYTE	***CAS NUMBER***	***(MG/KG)***	***(MG/KG)***	***(MG/KG)***	***(MG/KG)***	***(MG/KG)***	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**
Volatile Organic Compounds (VOCs)																											
BENZENE	71-43-2	0.5	0.13	0.5	0.13	2.3E-04	ND	U	0.0492	0.0113	ND	U	0.0723	0.0166	ND	U	0.0578	0.0133	ND	U	0.0656	0.0151	ND	U	0.0468	0.0108
CUMENE (ISOPROPYL BENZENE)	98-82-8	84	600	350	2,500	7.4E-02	ND	U	0.0492	0.0108	ND	U	0.0723	0.0159	ND	U	0.0578	0.0127	ND	U	0.0656	0.0144	ND	U	0.0468	0.0103
DIBROMOETHANE, 1,2- (ETHYLENE DIBROMIDE)	106-93-4	0.005	0.0012	0.005	0.0012	2.1E-06	ND	U	0.0492	0.0138	ND	U	0.0723	0.0202	ND	U	0.0578	0.0162	ND	U	0.0656	0.0184	ND	U	0.0468	0.0131
DICHLOROETHANE, 1,2-	107-06-2	0.5	0.1	0.5	0.1	4.8E-05	ND	U	0.0492	0.0157	ND	U	0.0723	0.0231	ND	U	0.0578	0.0185	ND	U	0.0656	0.021	ND	U	0.0468	0.015
ETHYL BENZENE	100-41-4	70	46	70	46	1.7E-03	ND	U	0.0492	0.0167	ND	U	0.0723	0.0246	ND	U	0.0578	0.0196	ND	U	0.0656	0.0223	ND	U	0.0468	0.0159
TOLUENE	108-88-3	100	44	100	44	7.6E-02	ND	U	0.0492	0.0113	ND	U	0.0723	0.0166	ND	U	0.0578	0.0133	ND	U	0.0656	0.0151	ND	U	0.0468	0.0108
XYLENES (TOTAL)	1330-20-7	1,000	990	1,000	990	1.9E-02	ND	U	0.148	0.0325	ND	U	0.217	0.0477	ND	U	0.173	0.0381	ND	U	0.197	0.0433	ND	U	0.14	0.0309
NAPHTHALENE	91-20-3	10	25	10	25	3.8E-04	ND	U	0.0984	0.0167	ND	U	0.145	0.0246	ND	U	0.116	0.0196	ND	U	0.131	0.0223	ND	U	0.0935	0.0159
TRIMETHYLBENZENE, 1,2,4- (TRIMETHYLBENZENE, 1,3,4-)	95-63-6	13	73	53	300	8.1E-03	ND	U	0.0492	0.0123	ND	U	0.0723	0.0181	ND	U	0.0578	0.0144	ND	U	0.0656	0.0164	ND	U	0.0468	0.0117
TRIMETHYLBENZENE, 1,3,5-	108-67-8	13	23	53	93	8.7E-03	ND	U	0.0492	0.0098	ND	U	0.0723	0.0145	ND	U	0.0578	0.0116	ND	U	0.0656	0.0131	ND	U	0.0468	0.0094
Total Metals																											
LEAD	7439-92-1	0.5	450	0.5	450	-	**2.5**		0.92	0.3	**3.9**		1.1	0.35	**3.9**		1.2	0.39	**2.8**		0.9	0.3	**2.3**		0.95	0.31

6.8 - Detected result (bold)

450 - Selected Standard/exceedance thereof

Table 11. 2024 Near-Source Soil Analytical Results

							CLIENT ID:	Bldg9_NS-D_9.5				Bldg9_NS-E_14.5				Bldg9_NS-F_14.5				Bldg9_NS-G_14.5				Bldg9_NS-H_14.5			
							LAB ID:	3346845004				3346845005				3346845010				3346845011				3346845012			
							COLLECTION DATE:	2/15/2024				2/16/2024				2/20/2024				2/20/2024				2/20/2024			
		Used Aquifers TDS ≤ 2500 Residential		*Used Aquifers TDS ≤ 2500 Non-Residential*		*RSL*																					
		100 X GW MSC	*Generic Value*	*100 X GW MSC*	*Generic Value*	*SSL*																					
ANALYTE	*CAS NUMBER*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**
Volatile Organic Compounds (VOCs)																											
BENZENE	71-43-2	0.5	0.13	0.5	0.13	2.3E-04	ND	U	0.0635	0.0146	ND	U	0.0587	0.0135	ND	U	0.0482	0.0111	ND	U	0.0522	0.012	ND	U	0.0539	0.0124
CUMENE (ISOPROPYL BENZENE)	98-82-8	84	600	350	2,500	7.4E-02	ND	U	0.0635	0.014	ND	U	0.0587	0.0129	ND	U	0.0482	0.0106	ND	U	0.0522	0.0115	ND	U	0.0539	0.0119
DIBROMOETHANE, 1,2- (ETHYLENE DIBROMIDE)	106-93-4	0.005	0.0012	0.005	0.0012	2.1E-06	ND	U	0.0635	0.0178	ND	U	0.0587	0.0164	ND	U	0.0482	0.0135	ND	U	0.0522	0.0146	ND	U	0.0539	0.0151
DICHLOROETHANE, 1,2-	107-06-2	0.5	0.1	0.5	0.1	4.8E-05	ND	U	0.0635	0.0203	ND	U	0.0587	0.0188	ND	U	0.0482	0.0154	ND	U	0.0522	0.0167	ND	U	0.0539	0.0173
ETHYL BENZENE	100-41-4	70	46	70	46	1.7E-03	ND	U	0.0635	0.0216	ND	U	0.0587	0.02	ND	U	0.0482	0.0164	ND	U	0.0522	0.0177	ND	U	0.0539	0.0183
TOLUENE	108-88-3	100	44	100	44	7.6E-02	ND	U	0.0635	0.0146	ND	U	0.0587	0.0135	ND	U	0.0482	0.0111	ND	U	0.0522	0.012	ND	U	0.0539	0.0124
XYLENES (TOTAL)	1330-20-7	1,000	990	1,000	990	1.9E-02	ND	U	0.19	0.0419	ND	U	0.176	0.0387	ND	U	0.145	0.0318	ND	U	0.156	0.0344	ND	U	0.162	0.0356
NAPHTHALENE	91-20-3	10	25	10	25	3.8E-04	ND	U	0.127	0.0216	ND	U	0.117	0.02	ND	U	0.0964	0.0164	ND	U	0.104	0.0177	ND	U	0.108	0.0183
TRIMETHYLBENZENE, 1,2,4- (TRIMETHYLBENZENE, 1,3,4-)	95-63-6	13	73	53	300	8.1E-03	ND	U	0.0635	0.0159	ND	U	0.0587	0.0147	ND	U	0.0482	0.012	ND	U	0.0522	0.013	ND	U	0.0539	0.0135
TRIMETHYLBENZENE, 1,3,5-	108-67-8	13	23	53	93	8.7E-03	ND	U	0.0635	0.0127	ND	U	0.0587	0.0117	ND	U	0.0482	0.0096	ND	U	0.0522	0.0104	ND	U	0.0539	0.0108
Total Metals																											
LEAD	7439-92-1	0.5	450	0.5	450	-	**111**		1.2	0.39	493		1.1	0.37	**11.9**		1.1	0.38	**3.2**		0.93	0.31	**2.6**		1	0.33

							CLIENT ID:	Bldg9_NS-I_11.5				Bldg9_NS-J_14.5				Bldg9_NS-K_14.5					STEEN_NS-A_13				STEEN_NS-B_14.5			
							LAB ID:	3346845013				3346845014				3346845017					3349563003				3349563004			
							COLLECTION DATE:	2/20/2024				2/20/2024				2/21/2024					3/6/2024				3/6/2024			
		Used Aquifers TDS ≤ 2500 Residential		*Used Aquifers TDS ≤ 2500 Non-Residential*		*RSL*																						
		100 X GW MSC	*Generic Value*	*100 X GW MSC*	*Generic Value*	*SSL*																						
ANALYTE	*CAS NUMBER*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	*(MG/KG)*	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Unit**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**
Volatile Organic Compounds (VOCs)																												
BENZENE	71-43-2	0.5	0.13	0.5	0.13	2.3E-04	ND	U	0.0541	0.0124	**0.0912**		0.0529	0.0122	ND	U	0.343	0.0788	MG/KG	ND	U	0.0421	0.0097	ND	U	0.0412	0.0095
CUMENE (ISOPROPYL BENZENE)	98-82-8	84	600	350	2,500	7.4E-02	ND	U	0.0541	0.0119	ND	U	0.0529	0.0116	ND	U	0.343	0.0754	MG/KG	ND	U	0.0421	0.0093	ND	U	0.0412	0.0091
DIBROMOETHANE, 1,2- (ETHYLENE DIBROMIDE)	106-93-4	0.005	0.0012	0.005	0.0012	2.1E-06	ND	U	0.0541	0.0151	ND	U	0.0529	0.0148	ND	U	0.343	0.0959	MG/KG	ND	U	0.0421	0.0118	ND	U	0.0412	0.0115
DICHLOROETHANE, 1,2-	107-06-2	0.5	0.1	0.5	0.1	4.8E-05	ND	U	0.0541	0.0173	ND	U	0.0529	0.0169	ND	U	0.343	0.11	MG/KG	ND	U	0.0421	0.0135	ND	U	0.0412	0.0132
ETHYL BENZENE	100-41-4	70	46	70	46	1.7E-03	ND	U	0.0541	0.0184	ND	U	0.0529	0.018	ND	U	0.343	0.116	MG/KG	ND	U	0.0421	0.0143	ND	U	0.0412	0.014
TOLUENE	108-88-3	100	44	100	44	7.6E-02	ND	U	0.0541	0.0124	ND	U	0.0529	0.0122	ND	U	0.343	0.0788	MG/KG	ND	U	0.0421	0.0097	ND	U	0.0412	0.0095
XYLENES (TOTAL)	1330-20-7	1,000	990	1,000	990	1.9E-02	ND	U	0.162	0.0357	ND	U	0.159	0.0349	ND	U	1.03	0.226	MG/KG	ND	U	0.126	0.0278	ND	U	0.124	0.0272
NAPHTHALENE	91-20-3	10	25	10	25	3.8E-04	ND	U	0.108	0.0184	ND	U	0.106	0.018	**4.98**		0.685	0.116	MG/KG	ND	U	0.0843	0.0143	ND	U	0.0824	0.014
TRIMETHYLBENZENE, 1,2,4- (TRIMETHYLBENZENE, 1,3,4-)	95-63-6	13	73	53	300	8.1E-03	ND	U	0.0541	0.0135	ND	U	0.0529	0.0132	ND	U	0.343	0.0856	MG/KG	ND	U	0.0421	0.0105	ND	U	0.0412	0.0103
TRIMETHYLBENZENE, 1,3,5-	108-67-8	13	23	53	93	8.7E-03	ND	U	0.0541	0.0108	ND	U	0.0529	0.0106	ND	U	0.343	0.0685	MG/KG	**0.0455**		0.0421	0.0084	**0.112**		0.0412	0.0082
Total Metals																												
LEAD	7439-92-1	0.5	450	0.5	450	-	**3.9**		1	0.33	**12.1**		0.99	0.33	592		1.1	0.35	MG/KG	**5.1**		0.96	0.32	**10.3**		1.1	0.36

6.8 - Detected result (bold)

450 - Selected Standard/exceedance thereof

Table 11. 2024 Near-Source Soil Analytical Results

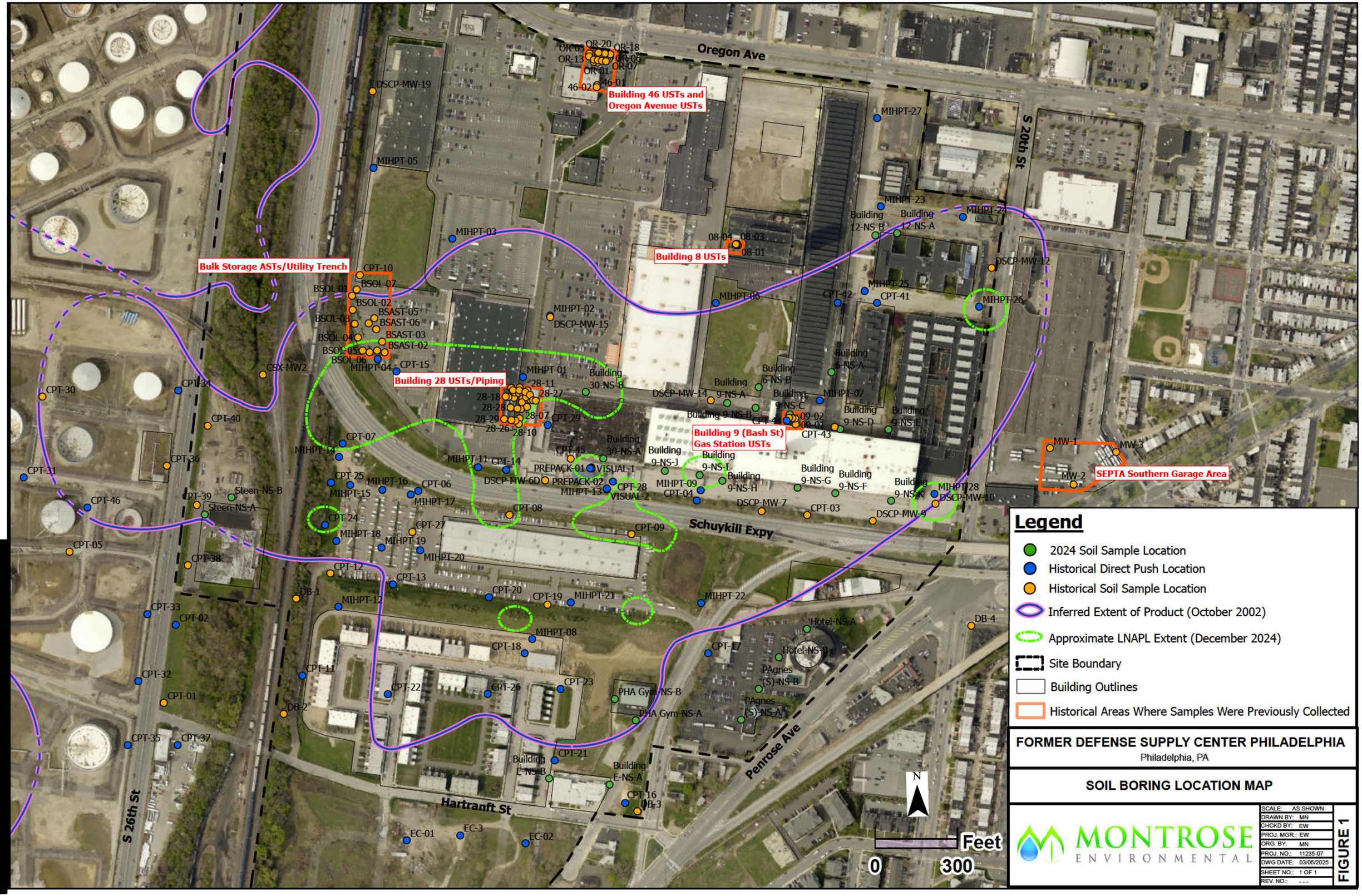
							CLIENT ID:	Bldg E_NS-A_9.5				Bldg E_NS-B_10.5				PHA Gym_NS-A_11.5				PHA Gym_NS-B_12.5				Hotel_NS-A_7.5			
							LAB ID:	3348277005				3348277006				3349563001				3349563002				3348277001			
							COLLECTION DATE:	2/29/2024				3/1/2024				3/1/2024				3/1/2024				2/28/2024			
		Used Aquifers TDS ≤ 2500 Residential		*Used Aquifers TDS ≤ 2500 Non-Residential*		*RSL*																					
		100 X GW MSC	*Generic Value*	*100 X GW MSC*	*Generic Value*	*SSL*																					
ANALYTE	***CAS NUMBER***	***(MG/KG)***	***(MG/KG)***	***(MG/KG)***	***(MG/KG)***	***(MG/KG)***	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**
Volatile Organic Compounds (VOCs)																											
BENZENE	71-43-2	0.5	0.13	0.5	0.13	2.3E-04	ND	U	0.0495	0.0114	ND	U	0.049	0.0113	ND	U	0.0561	0.0129	ND	U	0.0467	0.0107	ND	U	0.0653	0.015
CUMENE (ISOPROPYL BENZENE)	98-82-8	84	600	350	2,500	7.4E-02	ND	U	0.0495	0.0109	ND	U	0.049	0.0108	ND	U	0.0561	0.0123	ND	U	0.0467	0.0103	ND	U	0.0653	0.0144
DIBROMOETHANE, 1,2- (ETHYLENE DIBROMIDE)	106-93-4	0.005	0.0012	0.005	0.0012	2.1E-06	ND	U	0.0495	0.0138	ND	U	0.049	0.0137	ND	U	0.0561	0.0157	ND	U	0.0467	0.0131	ND	U	0.0653	0.0183
DICHLOROETHANE, 1,2-	107-06-2	0.5	0.1	0.5	0.1	4.8E-05	ND	U	0.0495	0.0158	ND	U	0.049	0.0157	ND	U	0.0561	0.0179	ND	U	0.0467	0.0149	ND	U	0.0653	0.0209
ETHYL BENZENE	100-41-4	70	46	70	46	1.7E-03	ND	U	0.0495	0.0168	ND	U	0.049	0.0167	ND	U	0.0561	0.0191	ND	U	0.0467	0.0159	ND	U	0.0653	0.0222
TOLUENE	108-88-3	100	44	100	44	7.6E-02	ND	U	0.0495	0.0114	ND	U	0.049	0.0113	ND	U	0.0561	0.0129	ND	U	0.0467	0.0107	ND	U	0.0653	0.015
XYLENES (TOTAL)	1330-20-7	1,000	990	1,000	990	1.9E-02	ND	U	0.148	0.0326	ND	U	0.147	0.0323	ND	U	0.168	0.037	ND	U	0.14	0.0308	ND	U	0.196	0.0431
NAPHTHALENE	91-20-3	10	25	10	25	3.8E-04	ND	U	0.0989	0.0168	ND	U	0.098	0.0167	ND	U	0.112	0.0191	ND	U	0.0933	0.0159	ND	U	0.131	0.0222
TRIMETHYLBENZENE, 1,2,4- (TRIMETHYLBENZENE, 1,3,4-)	95-63-6	13	73	53	300	8.1E-03	ND	U	0.0495	0.0124	ND	U	0.049	0.0122	ND	U	0.0561	0.014	ND	U	0.0467	0.0117	ND	U	0.0653	0.0163
TRIMETHYLBENZENE, 1,3,5-	108-67-8	13	23	53	93	8.7E-03	ND	U	0.0495	0.0099	ND	U	0.049	0.0098	ND	U	0.0561	0.0112	ND	U	0.0467	0.0093	ND	U	0.0653	0.0131
Total Metals																											
LEAD	7439-92-1	0.5	450	0.5	450	-	**1.4**		0.98	0.32	**2.9**		1	0.33	**7.6**		0.96	0.32	**7.7**		1.1	0.35	570		1.2	0.39

							CLIENT ID:	Hotel_NS-B_7.5				PAgnesS+NS-A_13.5				PAgnesS+NS-B_7.5			
							LAB ID:	3348277002				3348277003				3348277004			
							COLLECTION DATE:	2/28/2024				2/28/2024				2/29/2024			
		Used Aquifers TDS ≤ 2500 Residential		*Used Aquifers TDS ≤ 2500 Non-Residential*		*RSL*													
		100 X GW MSC	*Generic Value*	*100 X GW MSC*	*Generic Value*	*SSL*													
ANALYTE	***CAS NUMBER***	***(MG/KG)***	***(MG/KG)***	***(MG/KG)***	***(MG/KG)***	***(MG/KG)***	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**	**Result**	**Flag**	**PQL**	**MDL**
Volatile Organic Compounds (VOCs)																			
BENZENE	71-43-2	0.5	0.13	0.5	0.13	2.3E-04	ND	U	0.0989	0.0228	ND	U	0.0522	0.012	ND	U	0.0522	0.012
CUMENE (ISOPROPYL BENZENE)	98-82-8	84	600	350	2,500	7.4E-02	ND	U	0.0989	0.0218	ND	U	0.0522	0.0115	ND	U	0.0522	0.0115
DIBROMOETHANE, 1,2- (ETHYLENE DIBROMIDE)	106-93-4	0.005	0.0012	0.005	0.0012	2.1E-06	ND	U	0.0989	0.0277	ND	U	0.0522	0.0146	ND	U	0.0522	0.0146
DICHLOROETHANE, 1,2-	107-06-2	0.5	0.1	0.5	0.1	4.8E-05	ND	U	0.0989	0.0317	ND	U	0.0522	0.0167	ND	U	0.0522	0.0167
ETHYL BENZENE	100-41-4	70	46	70	46	1.7E-03	ND	U	0.0989	0.0336	ND	U	0.0522	0.0177	ND	U	0.0522	0.0178
TOLUENE	108-88-3	100	44	100	44	7.6E-02	ND	U	0.0989	0.0228	ND	U	0.0522	0.012	ND	U	0.0522	0.012
XYLENES (TOTAL)	1330-20-7	1,000	990	1,000	990	1.9E-02	ND	U	0.297	0.0653	ND	U	0.157	0.0344	ND	U	0.157	0.0345
NAPHTHALENE	91-20-3	10	25	10	25	3.8E-04	ND	U	0.198	0.0336	ND	U	0.104	0.0177	ND	U	0.104	0.0178
TRIMETHYLBENZENE, 1,2,4- (TRIMETHYLBENZENE, 1,3,4-)	95-63-6	13	73	53	300	8.1E-03	ND	U	0.0989	0.0247	ND	U	0.0522	0.013	ND	U	0.0522	0.0131
TRIMETHYLBENZENE, 1,3,5-	108-67-8	13	23	53	93	8.7E-03	ND	U	0.0989	0.0198	ND	U	0.0522	0.0104	ND	U	0.0522	0.0104
Total Metals																		
LEAD	7439-92-1	0.5	450	0.5	450	-	*724*		1.3	0.44	**11**		1.2	0.39	**73.8**		1.1	0.36

6.8 - Detected result (bold)

450 - Selected Standard/exceedance thereof

Figures


Oregon Ave
S 20th St
Schuykill Expy
Penrose Ave
Hartranft St
S 26th St
Building 46 USTs and Oregon Avenue USTs
Building 8 USTs
Bulk Storage ASTs/Utility Trench
Building 28 USTs/Piping
Building 9 (Bash St) Gas Station USTs
SEPTA Southern Garage Area
Legend
2024 Soil Sample Location
Historical Direct Push Location
Historical Soil Sample Location
Inferred Extent of Product (October 2002)
Approximate LNAPL Extent (December 2024)
Site Boundary
Building Outlines
Historical Areas Where Samples Were Previously Collected
FORMER DEFENSE SUPPLY CENTER PHILADELPHIA
Philadelphia, PA
SOIL BORING LOCATION MAP
MONTROSE ENVIRONMENTAL
SCALE: AS SHOWN
DRAWN BY: MN
CHCKD BY: EW
PROJ. MGR.: EW
ORG. BY: MN
PROJ. NO.: 11235-07
DWG DATE: 03/05/2025
SHEET NO.: 1 OF 1
REV. NO.: - - -
FIGURE 1
N
0
300
Feet

Contaminants that Exceed Standards
- Lead
- Benzene
- Ethylbenzene
- Naphthalene
- 1,2,4-Trimethylbenzene

Oregon Ave
S 20th St
S 26th St
Schuykill Expy
Hartranft St
Penrose Ave

OR-(01-20)
Building 46 USTs and Oregon Avenue USTs
08-(01-04)
Building 8 USTs
09-(01-04)
Building 9 (Bash St) Gas Station USTs
28-(01-29)
Building 28 USTs/Piping
Bulk Storage ASTs/Utility Trench
SEPTA Southern Garage Area

CSXMW-9/CSXBO5
CSXMW-3A/CSXSBO4
CSXMW-8/CSXSB03
CSXMW-7/CSXSBO2
CSX-MW2
BSAST-04
BSAST-05
BSAST-06
BSAST-02
BSAST-03
BSAST-01
BSOL-07
BSOL-01
BSOL-02
BSOL-03
BSOL-04
BSOL-05
BSOL-06
DSCP-MW-15
DSCP-MW-14
DSCP-MW-6D
DSCP-MW-7
DSCP-MW-12
DSCP-MW-10
DSCP-MW-9
Building 12-NS-A
Building 12-NS-B
Building 6-NS-B
Building 6-NS-A
Building 9-NS-B
Building 9-NS-A
Building 9-NS-C
Building 9-NS-D
Building 9-NS-E
Building 9-NS-K
Building 9-NS-J
Building 9-NS-I
Building 9-NS-H
Building 9-NS-G
Building 9-NS-F
Building 30-NS-B
Building 30-NS-A
VES Building-NS-A
Steen-NS-A
Steen-NS-B
Hotel-NS-A
Hotel-NS-B
PHA Gym-NS-B
PHA Gym-NS-A
PAgnes (S)-NS-B
PAgnes (S)-NS-A
Building E-NS-A
Building E-NS-B
CPT-30
CPT-40
CPT-36
CPT-39
CPT-05
CPT-38
CPT-01
CPT-27
CPT-08
CPT-09
CPT-19
CPT-45
CPT-43
CPT-03
CPT-12
MW-62/STSBO2
STSB04
MW-61/STSBO3
MW-63/STSB05
MW-64/STSBO6
STSB07
PHSB02
MW-58/PHSB03
MW-56/PHSB04
MW-60/PHSB-12
DB-1
DB-2
DB-3
DB-4
MW-3
MW-1
MW-2

Legend

- Exceedance
- No Exceedance
- Not Analyzed for Target Compounds
- Inferred Extent of Product (October 2002)
- Approximate LNAPL Extent (December 2024)
- Site Boundary
- Building Outlines
- Historical Areas Where Samples Were Previously Collected

N

0 300 Feet

FORMER DEFENSE SUPPLY CENTER PHILADELPHIA
Philadelphia, PA

SOIL SAMPLE EXCEEDANCE LOCATION MAP

MONTROSE ENVIRONMENTAL

SCALE:	AS SHOWN
DRAWN BY:	MN
CHCKD BY:	EW
PROJ. MGR.:	EW
ORG. BY:	MN
PROJ. NO.:	11235-07
DWG DATE:	03/05/2025
SHEET NO.:	1 OF 1
REV. NO.:	---

FIGURE 2

APPENDIX A
HISTORICAL BORING LOGS

TETRA TECH FW, INC.

Location: DSCP	Elevation: 19.52'
Well Id: MW-53	Completed Depth: 34.00'
Logged By: [redacted]	Total Depth: 40.00'
Date(s): 07/08/03 - 07/14/03	Conductor Casing: type: STEEL dia: 8.00in fm: 0.00' to: 2.00'
Drilling Subcontractor: TerraProbe/Chesapeak	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Blank Casing: type: PVC dia: 4.00in fm: 0.0' to: 14.00'
X Coordinate: 2720324.23	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 14.00' to: 34.00'
Y Coordinate: 223029.27	Annular Fill: type: Concrete Pad fm: 0.00' to: 0.50'; type: Bentonite Grout fm: 0.50' to: 8.50'; type: Bentonite fm: 8.50' to: 11.50'; type: Sand Filter fm: 11.50' to: 34.00'
Remarks: Soil Boring #DSSB01 Ground Surface Elevation: 19.52' Top of Casing Elevation (M.P.): 19.05' Top of Outer Casing Elevation: 19.48' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 19.05)	Elevation (ft)
		100	Dk brn	ML		0-1' Grass, roots, TOPSOIL	0.0 ppm		
2			Org-brn			1-2' SANDY SILT, some roots, rock fragments 2-4' SILT, medium dense, some clay			
4		100	Tan			4-8' SILT, medium dense	0.0 ppm		15
6									
8		95	Dk brn			8-12' Same as above, large cobble at 9.5'			
			Red-brn	GM		9.5-12' SAND, SILT, GRAVEL mix, large cobbles	0.0 ppm		10

Location: DSCP

Well Id: MW-53

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
						(0.5–1.0" diameter)			
12		75	Red	GW		12–16' Same as above with more GRAVEL, less SILT; becomes silty at 14'; large quartz cobble (several inches) at 15'	0.0 ppm		
14									5
		80	Brn	GM		16–19' Same as above, becoming softer at 18', more sandy	0.0 ppm		
18			Org-brn						
		95	Brn/red/wh			19–21' Same as above, large cobbles	0.0 ppm		0
20									
			Brn	SP		21–23' SAND, trace SILT, trace GRAVEL, well-graded, medium dense	0.0 ppm		
22									
		25				23–24' GRAVEL, large cobbles (may be sluff)	0.0 ppm		
24									-5
26									

Location: DSCP

Well Id: MW-53

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		50	Brn			27–29' SAND, very soft, wet			
30		60				31–35' Large cobbles, SAND grading from very fine to coarse with depth	0.0 ppm		-10
34		100	Brn			35–38' SAND, well-sorted, fine to medium, medium loose			-15
36									
38						38–38.5' Small GRAVEL layer, fine to coarse, sub-rounded			
40						38.5–40' SAND, very fine, well-sorted, medium dense			-20
						Terminated boring @ 40'			

TETRA TECH FW, INC.

Location: DSCP	Elevation: 19.10'
Well Id: DSSB02	Completed Depth: 35.00'
Logged By: [redacted]	Total Depth: 35.00'
Date(s): 07/18/03 - 07/18/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TERRA PROBE	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 0.00in fm: 0.0' to: 35.00'
X Coordinate: 2720289.96	Screens: type: size: dia: fm: to:
Y Coordinate: 222999.82	Annular Fill: type: fm: to: type: fm: to: type: fm: to:
Remarks:	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		100	Dk brn	Fl					
			Yel-brn	ML		1-4' SILT, moderately dense	0.0 ppm		
2									
4		100				4-8' Same as above, trace clay	0.0 ppm		15
6									
8		75	Brn	SW		8-10' Abrupt change to SAND and GRAVEL mix	0.0 ppm		10
						10-12' Same as above with SILT			

Location: DSCP

Well Id: DSSB02

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
				GM			0.0 ppm		
12		95	red/wh/ brn/yel			12–16' SAND, SILT, GRAVEL mix; gravel ranges from rounded to angular	0.0 ppm		5
14									
		100				16–19' Same as above, becoming moist towards 19'	0.0 ppm		
18									
			Brn/org/ grn/prp			19–23' SAND, SILT, GRAVEL mix, wet, water table at 19 feet, gravel pieces up to 2" diameter	0.0 ppm		0
20									
22									
		85	Brn/ red-brn	SW		23–27' GRAVELLY SAND to well-graded, trace SILT	0.0 ppm		
24									-5
26									

TETRA TECH FW, INC.

Location: DSCP | Well Id: DSSB02

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
26									
		80	Brn			27–31' SAND, little gravel, 2" CLAY layer at 29.5 feet	0.0 ppm		
28									
									–10
30									
		80				31–35' SAND, well-sorted, fine to medium, 2" CLAY layer at 34 feet, grading to 2" GRAVELLY SAND			
			Red	SP		layer grading to fine to medium SAND	0.0 ppm		
34									–15
						Terminated boring @ 35'			
36									
38									
									–20
40									
42									

TETRA TECH FW, INC.

Location: DSCP	Elevation: 20.34'
Well Id: MW-54	Completed Depth: 34.00'
Logged By: [redacted]	Total Depth: 34.00'
Date(s): 07/10/03 - 07/15/03	Outer Casing: type: dia: 8.00in fm: -0.02' to: 2.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 14.00'
X Coordinate: 2720019.81	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 14.00' to: 34.00'
Y Coordinate: 222926.16	Annular Fill: type: Concrete Pad fm: 0.00' to: 0.50'; type: Bentonite Grout fm: 0.50' to: 9.50'; type: Bentonite fm: 9.50' to: 12.50'
Remarks: Soil Boring #DSSB03 Ground Surface Elevation: 20.34' Top of Casing Elevation (M.P.): 19.99' Top of Outer Casing Elevation: 20.35' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 19.99)	Elevation (ft)
		85	Wht-gry blk	FI		0-1' Concrete, asphalt, FILL at 1'			20
			Tan/ org yel	ML		1-4' SILT, moderately dense, moist, some gravel pieces @1-2', some clay throughout	0.0 ppm		
2									
4		100	Gry/tan			4-8' Same as above with SILT and CLAY throughout, becoming sandy around 8'	0.0 ppm		
6									15
			Red						
8		85	Brn	SW		8-9' GRAVELLY SAND, moderately dense			
			Brn			9-10' SAND, SILT			

Location: DSCP | Well Id: MW-54

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
			Org-brn/org			10-12' GRAVEL and SAND mix, cobbles becoming larger closer to 12', round to sub-rounded	0.0 ppm		10
12		80	Brn/org/tan/red			12-16' Alternating SAND and GRAVELLY SAND layers, becoming SAND, SILT, GRAVEL mix towards 15-16', cobbles are rounded to angular	0.0 ppm		
14									5
		100				16-19' Same as above	0.0 ppm		
18									
		90	Org	GM		19-20' SAND, SILT, GRAVEL mix, same as above	0.0 ppm		
20						20-23' SAND, SILT GRAVEL mix, strong odor, some staining, sheen	250 ppm		0
							345 ppm		
22							769 ppm		
		95		SP		23-27' SAND, fine to medium, some gravel scattered throughout, strong odor, sheen, possibly some free-product			
24							1223 ppm		-5
26									

TETRA TECH FW, INC.

Location: DSCP

Well Id: MW-54

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28						Geoprobe boring terminated @ 27'			-10
30									
34									-15
36									
38									
40									-20

TETRA TECH FW, INC.

Location: DSCP	Elevation: 19.60'
Well Id: DSSB04	Completed Depth: 31.00'
Logged By: [redacted]	Total Depth: 31.00'
Date(s): 07/18/03 - 07/18/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TERRA PROBE	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 0.00in fm: 0.0' to: 31.00'
X Coordinate: 2720152.56	Screens: type: size: dia: fm: to:
Y Coordinate: 222909.52	Annular Fill: type: fm: to: type: fm: to: type: fm: to:
Remarks:	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		70		ML		0-1' Concrete, asphalt			
			Yel-brn			1-4' CLAYEY SILT, moderately dense, slightly moist	0.0 ppm		
2									
4		90	yel-brn/ org-red			4-6.5' Same as above with a 3" band of dense SILT at 5.5 feet and 6.5-7 feet	0.0 ppm		15
6									
			Brn/gry	SP		7-8' SILT grading to SAND, large cobble at 8 feet	0.0 ppm		
8		85	Red-brn/ yel-brn/ brn	SW		8-12' SAND and GRAVEL mix, well-graded, large cobbles towards 12 feet	0.0 ppm		10

Location: DSCP

Well Id: DSSB04

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		90	Brn/red/ wh/org	GM		12–16' SAND, SILT, GRAVEL mix, medium dense, cobbles up to 2" diameter	0.0 ppm		5
14									
		100				16–18' Same as above with more SAND			
18			Org			18–19' Slightly moist	0.7 ppm		
		65	Blk			19–23' GRAVEL, very coarse, odor, staining at 21 feet	0.5 ppm		0
20									
						21–23' Same as above with more SAND, cobbles not so big	590 ppm		
22							70.7 ppm		
		90	Org			23–24' Same as above, mostly SAND, some silt, gravel	2.2 ppm		
24			Red-brn	ML		24–25' SILT, CLAY, dense, trace gravel	0.3 ppm		-5
			Org/red	SP		25–26' SAND, fine, well-sorted	16.2 ppm		
26									

Location: DSCP | Well Id: DSSB04

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
26			Gry	SW		26–27' GRAVELLY SAND, strong odor	1300 ppm		
		90	Dk gry/blk			27–31' SAND, fine to coarse, trace gravel, trace silt, odor, staining, wet with water and product	1300+ ppm		
28									
30						Boring terminated @ 31'			-10
34									-15
36									
38									
40									-20
42									

TETRA TECH FW, INC.

Location: DSCP	Elevation: 20.86'
Well Id: MW-23A	Completed Depth: 35.00'
Logged By: [redacted]	Total Depth: 36.00'
Date(s): 05/21/03 - 05/21/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 15.00'
X Coordinate: 2717985.76	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 15.00' to: 35.00'
Y Coordinate: 222673.48	Annular Fill: type: Grout fm: 0.00' to: 10.00'; type: Bentonite fm: 10.00' to: 12.00'; type: Sand Pack fm: 12.00' to: 35.00'; type: fm: to:
Remarks: Soil Boring #DSSB05 Ground Surface Elevation: 20.86' Top of Casing Elevation (M.P.): 22.90' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 22.90)	Elevation (ft)
		100	Wht to Gry	Fl		0-3' Rocks and gravel, FILL			20
2			Tan	ML		3-4' CLAYEY SILT	0.0 ppm		
4		100	Blue-Gry			4-8' SILT, medium dense, slight odor	4.1 ppm		
6									15
8		100	Blue Gry			8-12' SILT, medium dense, mottled staining and sheening throughout	3.0 ppm		

Location: DSCP

Well Id: MW-23A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		100				12–13' SILT, becoming more sandy and gravelly, staining and odor still present			10
			Gry,blk	GM		13–16' SAND, SILT and GRAVEL mix, SILTSTONE			
			Red			mixed in, no staining or sheen, slight odor			
14							10.2 ppm		
		75							5
			Red	SM		17–18' SANDY SILT, tr GRAVEL			
18			White Red	GM		18–18.2' SAND/GRAVEL layer			
				ML		18.2–19' SILT			
			Red–brn	GM		19–20' SAND, SILT, GRAVEL mix, strong odor, sheen			
20		75				20–21' Same as Above, heavy sheen	251 ppm		0
22				SM		22–24' SILTY SAND, some GRAVEL, stong odor, heavy sheen	325 ppm		
24		75				24–28' Very wet, alternating SAND, SANDY SILT, GRAVEL layers, heavy product odor			−5

TETRA TECH FW, INC.

Location: DSCP

Well Id: MW-23A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
26									
						28–32' SAND and GRAVEL mix, some SILT, saturated with free product	398 ppm		
28		65		GM			1000+ ppm		
30									-10
		70				32–34' Same as Above with less odor, sheen and staining	14.5 ppm		
34			Gry,tan Red	ML		34–36' SILT, medium dense, some CLAY, little to no staining, odor	2.2 ppm		
36						Terminated boring @ 36'			-15
38									
40									-20
42									

TETRA TECH FW, INC.

Location: DSCP	Elevation: 17.52'
Well Id: MW-59	Completed Depth: 28.00'
Logged By: [redacted]	Total Depth: 36.00'
Date(s): 07/16/03 - 07/21/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 15.00'
X Coordinate: 2720280.58	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 15.00' to: 28.00'
Y Coordinate: 222646.99	Annular Fill: type: Concrete Pad fm: 0.00' to: 0.50'; type: Bentonite Grout fm: 0.50' to: 11.00'; type: Bentonite fm: 11.00' to: 13.00'; type: Sand Pack fm: 13.00' to: 28.00'
Remarks: Soil Boring #DSSB06 Ground Surface Elevation: 17.52' Top of Casing Elevation (M.P.): (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 16.82)	Elevation (ft)
		90		FI		0-1' Asphalt and concrete			
						1-3' FILL, SAND, SILT	0.0 ppm		
2									15
			Org-brn	ML		3-4' SILT, moderately dense, trace sand and gravel	0.0 ppm		
4		65	Org-brn			4-8' Same as above, moderately soft			
6									10
8		70				8-10' Same as above	0.0 ppm		

Location: DSCP

Well Id: MW-59

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
			Dk brn	GM		10–11' SAND, SILT, GRAVEL mix	4.4 ppm		
			Tan/ dk gry	ML		11–12' Trace SILT, dense, staining			
12		100				12–13' Same as above, moist, stained	21.5 ppm		5
			Tan/gry			13–15.5' CLAYEY SILT, dense	512 ppm		
14									
			Gry-brn			15.5–16' SILT, dense, some large cobbles	4.5 ppm		
		80	Gray	GM		16–19' SILT and GRAVEL mix, dense, odor, black staining	4.0 ppm		
							1000+ ppm		0
18									
			Gray			19–20' SAND, SILT, GRAVEL mix, moist			
20		60	Brn-gry	SW		20–24' SAND, fine to medium, well-sorted, trace gravel, strong odor, staining, wet	2000+ ppm		
22									-5
24		65		GM		24–28' SAND, SILT, GRAVEL mix, strong odor and sheen	8000+ ppm		
26									

TETRA TECH FW, INC.

Location: DSCP

Well Id: MW-59

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		80				28–29.5' Same as above	1000+ ppm		-10
30			Grn-gry	ML		29.5–32' Abrupt change to CLAYEY SILT mixture, medium dense, trace fine sand	45 ppm		
		100	Grn-gry	SM		32–34' Same as above, moist CLAYEY SILT, trace fine sand	1.5 ppm		-15
34			Grn-gry			34–36' Grading to mostly fine SAND, trace silt and clay, moderately well-sorted	45 ppm		
36						Terminated boring at 36'			-20
38									
40									

TETRA TECH FW, INC.

Location: DSCP	Elevation: 21.27'
Well Id: MW-2B	Completed Depth: 35.00'
Logged By: [redacted]	Total Depth: 35.00'
Date(s): 09/04/03 - 09/04/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 15.00'
X Coordinate: 2719032.40	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 15.00' to: 35.00'
Y Coordinate: 223071.78	Annular Fill: type: Grout fm: 0.00' to: 11.00'; type: Bentonite fm: 11.00' to: 13.00'; type: Sand Pack fm: 13.00' to: 35.00'
Remarks: Soil Boring #SB-2B Ground Surface Elevation: 21.27' Top of Casing Elevation (M.P.): 24.23' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 24.23)	Elevation (ft)
		100	Gry-tan -blk	Fl		0-2' Asphalt, concrete, rock fragment mix			
2			Gry-tan	ML		2-4' SILT, becoming clayey and slightly moist towards 4'	0.0 ppm		20
4		100	Mttld gry+tan			4-8' mottled SILT, some CLAY, moderately dense	0.0 ppm		
6									15
8		100				8-10' Some as Above with tr Gravel			
						10-12' SILT, some Gravel, some SAND			

TETRA TECH FW, INC.

Location: DSCP

Well Id: MW-2B

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
			Reddsh −brn	GM		12−13' SILT, little larger GRAVEL, COBBLES			10
12		100	Org−brn			13−16' SAND, SILT, GRAVEL mix, loose			
			Red,brn gry,tan				0.0 ppm		
14									
						16−20' Same as Above, SAND, SILT GRAVEL mix			
		100					0.0 ppm		5
18						18.5−19.5' Little SILT			
			Org−brn						
						20−22' Fine SAND, tr GRAVEL, tr SILT			
20		88	Org−brn						
						22−23.5' SAND, SILT, GRAVEL mix			0
22			red,wht Gry						
						23.5−28' SAND and GRAVEL, large cobbles (1 1/2"			
			Reddsh Brn				0.0 ppm		
24						diameter)			
26									

TETRA TECH FW, INC.

Location: DSCP

Well Id: MW-2B

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28									-5
30									-10
34						Boring ended at 35'			-15
36									
38									-20
40									

TETRA TECH FW, INC.

Location: DSCP	Elevation: 20.60'
Well Id: MW-21A	Completed Depth: 35.00'
Logged By: [redacted]	Total Depth: 35.00'
Date(s): 09/03/03 - 09/03/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: CHESAPEAK GEOSYSTEMS	
Drilling Method: HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 15.00'
X Coordinate: 2719031.34	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 15.00' to: 35.00'
Y Coordinate: 223542.35	Annular Fill: type: Grout fm: 0.00' to: 11.00'; type: Bentonite fm: 11.00' to: 13.00'; type: Sand Pack fm: 13.00' to: 35.00'; type: fm: to:
Remarks: Originally soil boring SB-21A	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Material Description	PID (ppm)	Elevation (ft)
		100	Blk-gry	Fl	0-1' Asphalt, concrete		20
			Blk		1-2' Cinders, rock		
2			Gry-tan	SM	2-3' Dense silty, fine SAND	0.0 ppm	
			Tan		3-4' Slightly moist, medium dense silt, little clay		
4		100	Gry blk		4-7' Some as Above, some gray-black		
6			Tan		7-8' Fine to medium SAND, trace SILT, trace GRAVEL	0.0 ppm	15
8		100			8-8.5' Sluff		
			Blk&tan		8.5-9' gravelly SAND		
			Orng brn	GM	9-12' SAND, SILT, GRAVEL mix		

Well Construction: MP. EL. 23.75

Location: DSCP | Well Id: MW-21A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		100	Blk			12–13' Same as Above, SAND, SILT, GRAVEL mix 13–14.2' Same as Above, but becoming more silty with large pieces of rounded GRAVEL 14.2–16' Back to SAND, SILT, GRAVEL mix	0.0 ppm		10
14			Orng brn						
		100	Brn			16–20' SAND, SILT, GRAVEL mix			5
			Gry blk						
			Bright orng/ yell						
18						18–19' Moist			
			Orng brn			19–20' Wet			
20		100	Redsh	SP		20–21' Fine–coarse SAND, trace gravel wet 21–23' Medium–coarse SAND			0
22									
			Tan	GM		23–24' SAND, GRAVEL mix, large cobbles			
24		100				24–28' SAND, GRAVEL mix, trace SILT, some large cobbles ~0.5" diameter No odor, wet			-5
26									

TETRA TECH FW, INC.

Location: DSCP

Well Id: MW-21A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		100	Gry-tan			28-29' Same as Above	0.0 ppm		
						29-31' SILTY CLAY, medium-dense			
30			Dk gry			31-32' SILTY CLAY			-10
34						Boring ended @ 35'			-15
36									
38									-20
40									

TETRA TECH FW, INC.

Location: DSCP	Elevation: 22.34'
Well Id: MW-27A	Completed Depth: 35.00'
Logged By: [redacted]	Total Depth: 35.00'
Date(s): 09/05/03 - 09/05/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 15.00'
X Coordinate: 2719294.50	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 15.00' to: 35.00'
Y Coordinate: 222667.25	Annular Fill: type: Grout fm: 0.00' to: 11.00'; type: Bentonite fm: 11.00' to: 13.00'; type: Sand Pack fm: 13.00' to: 35.00'
Remarks: Soil Boring #SB-27A Ground Surface Elevation: 22.34' Top of Casing Elevation (M.P.): 25.06' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction MP. EL. 25.06	Elevation (ft)
		100	Dk gry Brn			0-2' SAND, SILT, GRAVEL, fill			
2			Tan			2-4' CLAYEY SILT, medium dense to dense around 4'	0.0 ppm		20
4		100	Gry+red brn			4-8' SILT, dense	0.0 ppm		
6									
8		100	Gry Blk			8-10.5' Same as Above			15

Location: DSCP

Well Id: MW-27A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
			Tan to red-brn			10.5-12' SAND, SILT, GRAVEL mix towards 12'	13.4 ppm		
12		75	Red-brn Tan			12-16' SAND, SILT, GRAVEL mix, some SAND layers mottled throughout	15.5 ppm		10
14									
		80	Red-brn Brn			16-20' SAND, SILT, GRAVEL mix, slight odor	207 ppm		5
18									
20		60	Brn,gry red			20-24' SAND with some SILT, some GRAVEL, strong odor throughout, sheen and staining	775 ppm		
							1300 ppm		
22							1400 ppm		0
							1500 ppm		
24		60				24-28; Same as Above, strong odors throughout	1000+ ppm		

TETRA TECH FW, INC.

Location: DSCP

Well Id: MW-27A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		100				28–32' Same as Above, strong odor throughout, large cobbles, 1–2" diameter	1300 ppm		-5
30						31–32' Same as Above, SAND and GRAVEL			
		60	Blue–gry			32–33' SILT layer			-10
			Dk gry			33–34' SILT becoming SAND			
34			Gry			34–35' SAND, strong odor throughout	1000+ ppm		
						Terminated boring @ 35'			
36									-15
38									
40									

TETRA TECH FW, INC.

Location: DSCP	Elevation: 20.71'
Well Id: MW-35A	Completed Depth: 35.00'
Logged By: [redacted]	Total Depth: 35.00'
Date(s): 09/08/03 - 09/08/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 6.00in fm: 0.0' to: 15.00'
X Coordinate: 2719021.29	Screens: type: Slotted size: 0.020in dia: 6.00in fm: 15.00' to: 35.00'
Y Coordinate: 222305.30	Annular Fill: type: Grout fm: 0.00' to: 11.00'; type: Bentonite fm: 11.00' to: 13.00'; type: Sand Pack fm: 13.00' to: 35.00'
Remarks: Soil Boring #SB-35A Ground Surface Elevation: 20.71' Top of Casing Elevation (M.P.): 23.65' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 23.65)	Elevation (ft)
		60		FI		0-1' Concrete and asphalt			
			Brn	GM		1-2' Fill, SILT, SAND, GRAVEL mix			20
2			Tan	ML		2-4' SILT, medium dense	0.0 ppm		
4		90	Tan			4-8' SILT, medium dense	0.0 ppm		
6									15
8		90				8-8.5' Same as Above			
				GM		8.5-12' SAND, SILT, GRAVEL mix			

Location: DSCP

Well Id: MW-35A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
							14.3 ppm		10
12		100				12–14.5' Same as Above	2.4 ppm		
14			Orng–brn	ML		14.5–15.5' SILT layer			
			Reddsh brn	GM		15.5–16' SAND, SILT, GRAVEL mix			5
		100				16–20' SAND, SILT, GRAVEL mix, odor, slightly moist at 20', some large cobbles	4.5 ppm		
							300–400 ppm		
18									
20		65	Dk gry/brn			20–24' SAND, SILT, GRAVEL mix, free product throughout	2000+ ppm		0
22									
24		100				24–27.5' Same as Above, saturated with product			
									−5

TETRA TECH FW, INC.

Location: DSCP

Well Id: MW-35A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28			Gry-tan	CL		27.5-28' CLAY with some SILT, less product odor			
30									-10
34						Boring ended @35'			
36									-15
38									
40									-20

TETRA TECH FW, INC.

Location: DSCP	Elevation: 21.43'
Well Id: MW-44A	Completed Depth: 35.00'
Logged By: [redacted]	Total Depth: 35.00'
Date(s): 09/03/03 - 09/03/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 15.00'
X Coordinate: 2718042.84	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 15.00' to: 35.00'
Y Coordinate: 223163.35	Annular Fill: type: Grout fm: 0.00' to: 11.00'; type: Bentonite fm: 11.00' to: 13.00'; type: Sand Pack fm: 13.00' to: 35.00'
Remarks: Soil Boring #SB-44A Ground Surface Elevation: 21.43' Top of Casing Elevation (M.P.): 24.20' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 24.20)	Elevation (ft)
0		100	Wht-blk	FI		0-1' ASPHALT and concrete 1-3' GRAVEL and fill			
2									20
				ML		3-4' Dense SILT	0.0 ppm		
4		100	Gry-tan				0.0 ppm		
6									15
8		100		GM		8-12' Same as Above, with some SAND and GRAVEL			

Location: DSCP | Well Id: MW-44A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		100	Brn,red wht			12–16' SAND, SILT, GRAVEL mix			10
14			Brn	ML		15–16' Very dense SILT layer	0.0 ppm		
		100		GM		16–20' Medium dense SAND, SILT GRAVEL mix	0.0 ppm		5
18									
20		100				20–24' Same as Above, slightly moist	0.0 ppm		0
22									
24		100	Red brn			24–28' Same as Above; 24–26' very large pieces of GRAVEL scattered throughout, 1–2" diameter	0.0 ppm		
26									

TETRA TECH FW, INC.

Location: DSCP

Well Id: MW-44A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
26						27–28' More silty			-5
28		100	Brn	SM		28–29.5' Dense, SANDY SILT, tr gravel			
			Red	SI/SH		29.5–30' SILTSTONE or SHALE			
30			Brn	GM		30–31' SAND, SILT, GRAVEL mix	0.0 ppm		
			Gry	SI		31–31.2' SILTSTONE			
			Gry tan	ML		31.2–32' CLAYEY SILT, dense to slightly dense	0.0 ppm		-10
34						Boring ended at 35'			
36									-15
38									
40									-20
42									

TETRA TECH FW, INC.

Location: DSCP	Elevation: 24.61'
Well Id: MW-45A	Completed Depth: 35.00'
Logged By: [redacted]	Total Depth: 35.00'
Date(s): 05/20/03 - 05/20/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 15.00'
X Coordinate: 2718075.54	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 15.00' to: 35.00'
Y Coordinate: 223656.32	Annular Fill: type: Grout fm: 0.00' to: 11.00'; type: Bentonite fm: 11.00' to: 13.00'; type: Sand Pack fm: 13.00' to: 35.00'
Remarks: Soil Boring #SB-45A Ground Surface Elevation: 24.61' Top of Casing Elevation (M.P.): 26.63' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 26.63)	Elevation (ft)
0		100	Brn,gry blk	FI		0-4' FILL, consisting of sand and gravel			
2									
4		100				4-8' Same as Above with glass and brick fragments, becoming very silty around 7-8'			20
6							0.0 ppm		
8		100				8-12' Same as Above			
						9-9.5' Large red brick fragments			
			Tan gry	ML		9.5-12' Mostly clayey SILT			15

Location: DSCP

Well Id: MW-45A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Material Description	PID (ppm)
			Blk	SP	11–11.3' SAND layer	0.0 ppm
12		100	Blu gry tan	ML	12–15' Clayey SILT	
14					15–15.2' Sandy layer	0.0 ppm
		100	Gry-tan		16–18.5' Mottled SILT, medium-dense	
					18.5–20' Sandy SILT	
18			Gry	SM		
20		100			Same as Above	
					21–23' Clayey SILT, medium-dense	
			Tan	ML		
22						
				GM	23–24' SAND, SILT GRAVEL mix	0.0 ppm
24		100	Gry blk		24–28' SAND, SILT, GRAVEL mix, loose	

Well Construction

Elevation (ft): 10, 5, 0

TETRA TECH FW, INC.

Location: DSCP

Well Id: MW-45A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		100	Brn–orng brn			27–28' Saturated, strong product odor 28–29' Product soaked SAND, SILT, GRAVEL mix 29–32' SAND, SILT, GRAVEL mix, slight odor,	137 ppm 315 ppm 3.5 ppm		
30									–5
		100	Tan lt tan	CL		32–36' Silty CLAY, moist, pliable			
34						Terminated boring @ 35'			–10
36									
38									
40									–15

TETRA TECH FW, INC.

Location: PASSYUNK HOMES	Elevation: 20.59'
Well Id: MWS-2A	Completed Depth: 35.00'
Logged By: [redacted]	Total Depth: 40.00'
Date(s): 07/11/03 - 07/16/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 15.00'
X Coordinate: 2718621.17	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 15.00' to: 35.00'
Y Coordinate: 221471.35	Annular Fill: type: Concrete Pad fm: 0.00' to: 0.50'; type: Bentonite Grout fm: 0.50' to: 11.00'; type: Bentonite fm: 11.00' to: 13.00'; type: Sand Pack fm: 13.00' to: 35.00'
Remarks: Soil Boring #PHSB01 Ground Surface Elevation: 20.59 Top of Casing Elevation (M.P.): 20.28 (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 20.28)	Elevation (ft)
		100	Brn-blk	FI		0-2' SILT mixed with some sand and gravel	0.0 ppm		20
2			Tan/gry	ML		2-4' CLAYEY SILT, some very fine sand	0.0 ppm		
4		100				4-8' Same as above, CLAYEY SILT	0.0 ppm		
6									15
8		90	tan gry			8-9.5' SILT with little clay, little sand			
			Red/wh/tan	GW		9.5-10' Small GRAVEL layer, large cobbles	34.5 ppm		

Location: PASSYUNK HOMES | Well Id: MWS-2A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Material Description	PID (ppm)
			Org brn	SP	10–12' SAND, well–sorted, medium, trace gravel, 0.5" diameter, rounded	69.9 ppm
12		85			12–13' Same as above	
				GW	13–14' GRAVEL with SAND	75.4 ppm
14						
		90	Red/org/brn		16–17' SAND and GRAVEL mix	200 ppm
			Gray	SP	17–20' SAND, well–sorted, fine to medium, trace rounded gravel, 0.5" diameter	1000+ ppm
18						
20		90			20–21' Same as above, moist	
			Gry-brn	SW	21–24' SAND and GRAVEL mix, well–graded, strong product odor, wet, sheen	1000+ ppm
22						
24		80			24–27' Same as above, large cobble at 27'	
26						

Well Construction

Elevation (ft): 10, 5, 0, -5

TETRA TECH FW, INC.

Location: PASSYUNK HOMES | Well Id: MWS-2A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
			Gray	SP		27-28' SAND, odor	1000+ ppm		
28		100	Gray	SM		28-32' SILTY SAND, becoming less silty at depth, odor	800+ ppm		
30			Tan	SW		30-32' SAND, fine to coarse, little gravel			-10
						32-33' Same as above			
			Gray			33-36' SAND, fine to coarse, odor, CLAY layer at 33' (2-3" thick)	200-500 ppm		
34									
36		100	Gray			36-37' SAND, fine to medium, well-sorted, wet, odor	100 ppm		-15
				SM		37-38.5' SAND grading to SILT with some sand, some clay			
38			Grn-gry	ML		38.5-40' SILT grading to CLAY; very fine SAND at 40'			
40						Terminated boring @ 40'			-20

TETRA TECH FW, INC.

Location: PASSYUNK HOMES	Elevation: 22.20'
Well Id: PHSB02	Completed Depth: 36.00'
Logged By: [redacted]	Total Depth: 36.00'
Date(s): 07/11/03 - 07/11/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TERRA PROBE	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 0.00in fm: 0.0' to: 36.00'
X Coordinate: 2717928.72	Screens: type: size: dia: fm: to:
Y Coordinate: 222148.59	Annular Fill: type: fm: to: / type: fm: to: / type: fm: to: / type: fm: to:
Remarks:	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		100	Dk brn	FI		0-2' FILL, SILT and SAND, roots	0.0 ppm		
2			Dk gry/tan	ML		2-4' SILT, dense, little clay, trace sand	0.0 ppm		20
4		100	Tan/gry			4-8' Same as above, medium dense			
6									15
8		90	Gray			8-11.5' CLAYEY SILT, moist, less dense			

Location: PASSYUNK HOMES | Well Id: PHSB02

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
							7.4 ppm		
			Red	SP		11.5–12' SAND, fine to medium, trace gravel	11.3 ppm		
12		75	Org/brn	SW		12–13' GRAVEL/SAND mix, some large cobbles 1" diameter, rounded to sub-angular			10
			Org	GM		13–16' SILT/GRAVEL mix, slight odor	34.5 ppm		
14									
		95	Org-brn Gray Dk gry			16–19' SILT, little gravel, large, rounded cobbles			
						16.2–16.5' SILTY CLAY (possible sluff)			5
						16.5–16.7' Broken SLATE or SILTSTONE			
18									
						19–20' SAND, SILT, GRAVEL mix, very dense	74.3 ppm		
20		90				20–21' Same as above			
			Blk/brn/red			21–24' GRAVEL, coarse, with some sand, trace silt, strong odor, sheen, staining			
22									0
							1500 ppm		
24		95				24–26' Same as above			
26									

TETRA TECH FW, INC.

Location: PASSYUNK HOMES | Well Id: PHSB02

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
26				SP		26–27' SAND, fine to medium, well–sorted, stained; soil sample PHSB02(26–27) collected			
						27–27.2' GRAVEL layer	1000+ ppm		–5
						27.2–28' SAND, fine, with product throughout			
28		100				28–30' Same as above	1200 ppm		
30			Dk gry/brn	GM		30–32' SAND, SILT GRAVEL mix, strong odor, staining, sheen	1000+ ppm		
		100				32–34' Same as above			–10
34			Grn–gry	ML		34–35.5' SILTY CLAY, dense to moderatly dense			
				SP		35.5–36' SAND, well–sorted, fine to medium, odor	85 ppm		
36						Terminated boring @ 36'			
									–15
38									
40									
42									

TETRA TECH FW, INC.

Location: PASSYUNK HOMES	Elevation: 23.05'
Well Id: MW-58	Completed Depth: 35.00'
Logged By: [redacted]	Total Depth: 40.00'
Date(s): 07/15/03 - 07/17/03	Outer Casing: type: dia: 8.00in fm: -0.07' to: 2.00'
Drilling Subcontractor: TerraProbe/Chesopeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 20.00'
X Coordinate: 2717763.37	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 20.00' to: 35.00'
Y Coordinate: 221188.93	
Remarks: Soil Boring #PHSB03 Ground Surface Elevation: 23.05' Top of Casing Elevation (M.P.): 22.62' Top of Outer Casing Elevation: 23.12' (NGVD29)	Annular Fill: type: Concrete Pad fm: 0.00' to: 0.50' type: Bentonite Grout fm: 0.50' to: 18.00' type: Bentonite fm: 18.00' to: 20.00' type: Sand Pack fm: 20.00' to: 35.00'

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction MP. EL. 22.62	Elevation (ft)
		100	Brn/blk	FI		0-1' Asphalt, FILL, SAND			
			Brn	ML		1-4' SAND and SILT, very fine, moderately dense	0.0 ppm		
2			Tan						20
4		100	Lgt tan			4-6' SILT, dense, trace fine sand			
6						6-8' Same as above, becoming moist and a little softer	0.0 ppm		
8		95	Gry-tan			8-11.5' SILT and CLAY, dense			15

TETRA TECH FW, INC.

Location: PASSYUNK HOMES | Well Id: MW-58

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Material Description	PID (ppm)	Elevation (ft)
12		65	Red	SP	11.5–12' SAND and SILT, very fine	0.0 ppm	
					12–13' Same as above with trace rounded GRAVEL (0.5" diameter)		
			Org	SM	13–16' SAND, SILT, CLAY mix, moist	0.0 ppm	10
14							
		85	Org–brn	GM	16–18' SAND, SILT GRAVEL mix, wet	0.0 ppm	
18			Org–brn		18–19' SAND		5
			Org		19–20' CLAY, very dense	0.0 ppm	
20		50	Grn–gry		20–24' SAND, SILT, GRAVEL mix		
22							0
						35.5 ppm	
24		60	Gry/brn		24–28' SAND and GRAVEL, coarse, wet, odor		
26							

Well Construction

TETRA TECH FW, INC.

Location: PASSYUNK HOMES | Well Id: MW-58

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		50				28-32' Same as above with sheen	1000+ ppm		-5
30						30-33' Soil sample PHSB03(30-33) collected			
		90				32-33' Same as above			
			Gray	ML		33-36' SILT and fine to ultra-fine SAND, odor, trace gravel, sheen, wet	1000+ ppm		-10
34									
36		95	Gry/brn	GW		36-37' GRAVEL layer, rounded to sub-rounded up to 1" diameter			
			Tan/gry	ML		37-40' CLAY, dense, with trace sand, silt, gravel	336 ppm		
38							9.5 ppm		-15
40						Terminated boring @ 40'			

TETRA TECH FW, INC.

Location: DSCP	Elevation: 20.81'
Well Id: MW-56	Completed Depth: 40.00'
Logged By: [redacted]	Total Depth: 40.00'
Date(s): 07/22/03 - 07/22/03	Outer Casing: type: dia: 8.00in fm: -0.06' to: 2.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 15.00'
X Coordinate: 2717970.44	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 15.00' to: 35.00'
Y Coordinate: 221033.81	Annular Fill: type: Concrete Pad fm: 0.00' to: 0.50'; type: Bentonite Grout fm: 0.50' to: 13.00'; type: Bentonite fm: 13.00' to: 15.00'; type: Sand Pack fm: 15.00' to: 35.00'
Remarks: Soil Boring #PHSB04 Ground Surface Elevation: 20.81 Tope of Casing Elevation (M.P): 20.32 Tope of Casing Elevation: 20.87' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction MP. EL. 20.32	Elevation (ft)
		75	Brn/gry	Fl		0-1.5' FILL, organics, brick and concrete fragments			20
2			Brn	ML		1.5-4' SILT, moderately dense, trace micaceous material	0.0 ppm		
4		75				4-8' Same as above, moist at 6-8 feet			
6							0.0 ppm		15
8		65				8-11' Same as above, SILT becoming slightly less dense than above			

Location: DSCP

Well Id: MW-56

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
			gray						
			Org-brn	GM		11-12' SAND, SILT, GRAVEL mix			10
12		60				12-12.5' Same as above	1.3 ppm		
			Gry/brn	SP		12.5-14' SAND, fine to medium, well-sorted			
14						14-16' Same as above with trace GRAVEL, sub-rounded to sub-angular, up to 1" diameter, slight odor			
		50	Brn/gry			16-16.5' SAND, medium to coarse	2.3 ppm		5
			Grn-gry	ML		16.5-17' SILT			
			Gry/brn	SP		17-20' SAND, fine to medium, well-sorted, some staining, odor			
18									
							3.5 ppm		
20		65	Gry/org/bl-gry/blk			20-24' Same as above, fine SAND some SILT, black staining, trace gravel			0
22									
							9.96 ppm		
24		60	Gry/brn	GM		24-28' SAND, SILT, GRAVEL mix, wet with water and product			
									-5

TETRA TECH FW, INC.

Location: DSCP

Well Id: MW-56

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		75				28–29' Same as above			
			Prp–gry/dk gry	SP		29–32' SAND, fine to medium, very strong odor, sheen, staining			
30						31–32' Soil sample PHSB04(31–32) collected			–10
		90	Gry/tan			32–36' Same as above at 32 feet, then grading to very fine SAND, very well–sorted at 32.5–36', slight odor	43.3 ppm		
34							42.1 ppm		
36		70	Gry/tan	SW		36–40' SAND and GRAVEL mix, moist	20–40 ppm		–15
38									
40						Terminated boring at 40'			–20

TETRA TECH FW, INC.

Location: PASSYUNK HOMES	Elevation: 19.92'
Well Id: MW-57	Completed Depth: 31.00'
Logged By [redacted]	Total Depth: 36.00'
Date(s): 07/10/03 - 07/18/03	Outer Casing: type: dia: 8.00in fm: -0.02' to: 2.00'
Drilling Subcontractor: TerraProbe/Chesapeak	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 11.00'
X Coordinate: 2717695.80	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 11.00' to: 31.00'
Y Coordinate: 220475.99	Annular Fill: type: Concrete Pad fm: 0.00' to: 0.50'; type: Bentonite Grout fm: 0.50' to: 7.00'; type: Bentonite fm: 7.00' to: 9.00'; type: Sand Pack fm: 9.00' to: 31.00'
Remarks: Soil Boring #PHSB05 Ground Surface Elevation: 19.92' Top of Casing Elevation (M.P.): 19.62' Top of Outer Casing Elevation: 19.94' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 19.62)	Elevation (ft)
		100		FI		0-1' FILL, asphalt, concrete, soil, organics			
			Yel-brn	ML		1-4' SILT, moderately dense, trace sand and gravel	0.0 ppm		
2							0.0 ppm		
							0.0 ppm		
4		95	Org-brn			4-8' Same as above, SILT becoming a little softer and moist at 6-8 fee			15
6									
							0.0 ppm		
8		90	Yel-brn			8-11' Same as above, moist, becoming more CLAYEY towards 9-11 feet	0.0 ppm		
									10

Location: PASSYUNK HOMES | Well Id: MW-57

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Material Description	PID (ppm)	Elevation (ft)
			Gray				
			Red-brn	GM	11–12' SILT/CLAY abruptly changing to SAND, SILT, GRAVEL mix; GRAVEL ranges from fine to		
12		80	Gray		coarse, sub-rounded to angular	0.0 ppm	
					12–13.5' Same as above; large cobble at 13 feet		
					13.5–16' Fine SAND at 14 feet grading to trace		
				SW	fine to coarse GRAVEl at 16 fee		
14			Red-brn				5
		70	Brn		16–18' Same as above	0.0 ppm	
18			Red-brn	GM	18–20' SAND, SILT, GRAVEL mix, becoming moist near 20 feet		
20		75	Red-brn		20–24' Same as above, wet, water @ 20 feet	0.0 ppm	0
22							
24		50	Org-brn		24–28' GRAVEL, coarse up to 2" diameter, angular to rounded, trace sand, trace silt, wet	0.0 ppm	-5
26							

Well Construction

TETRA TECH FW, INC.

Location: PASSYUNK HOMES

Well Id: MW-57

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		70	Org-brn			28–30' Same as above, SAND, SILT, GRAVEL, wet	0.0 ppm		
30			Red/tan/gry	ML		30–32' SILTY CLAY, dense	0.0 ppm		-10
		100				32–36' Same as above, middle CLAY unit	0.0 ppm		
34									-15
36						Terminated boring at 36'			
38									
40									-20

TETRA TECH FW, INC.

Location: PASSYUNK HOMES	Elevation: 21.50'
Well Id: PHSB06	Completed Depth: 36.00'
Logged By [redacted]	Total Depth: 36.00'
Date(s): 07/21/03 - 07/21/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TERRA PROBE	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 0.00in fm: 0.0' to: 36.00'
X Coordinate: 2718292.19	Screens: type: size: dia: fm: to:
Y Coordinate: 221482.18	Annular Fill: type: fm: to: / type: fm: to: / type: fm: to: / type: fm: to:
Remarks:	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		100	Brn	ML		0-4' SILT, stiff			
2									20
4			Grn-gry			4-8' Same as above			
6									15
8		100				8-10' Same as above			

Location: PASSYUNK HOMES | Well Id: PHSB06

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
				GM		10–12' SAND, SILT, GRAVEL mix	12 ppm		10
12		100				12–14.4' Same as above			
14			Brn	ML		14.4–16' SILT, dense, stiff	14 ppm		
		75	Brn	SP		16–20' GRAVELLY SAND, poorly graded, fine to medium			5
18							45 ppm		
20		100				20–23' SAND, SILT, GRAVEL mix, moist			0
22							1222 ppm		
						23–23.5' GRAVELLY SAND, poorly graded, fine to medium, some product staining and sheen			
				GM		23.5–24' SAND, SILT and GRAVEL mix			
24		63	Brn/gry			24–24.2' GRAVEL, large, quartz cobble			
						24.2–26.7' SAND, poorly graded, well-sorted, fine to medium, strong odor, very wet, sheen			
26									

TETRA TECH FW, INC.

Location: PASSYUNK HOMES | Well Id: PHSB06

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		100	Gray			28–32' SAND, well–sorted, poorly graded, fine to medium, strong odor, sheen, some gravels	1194 ppm		-5
30							998 ppm		
							1046 ppm		-10
		100				32–36' Same as above, strong odor and heavy sheen	1092 ppm		
34							1576 ppm		
							1680 ppm		
36						Boring terminated @ 36'			-15
38									
40									-20

TETRA TECH FW, INC.

Location: PASSYUNK HOMES	Elevation: 18.20'
Well Id: PHSB07	Completed Depth: 36.00'
Logged By: [redacted]	Total Depth: 36.00'
Date(s): 07/22/03 - 07/22/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TERRA PROBE	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 0.00in fm: 0.0' to: 36.00'
X Coordinate: 2718882.59	Screens: type: size: dia: fm: to:
Y Coordinate: 221482.18	Annular Fill: type: fm: to: type: fm: to: type: fm: to:
Remarks:	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		100	Brn	FI		0-1' FILL, topsoil, organics, SILT, some gravel			
			Org-brn/ gry	ML		1-4' SILT, dense, some CLAY	0.0 ppm		
2									
									15
4		100	Gry			4-7' CLAYEY SILT, dense	0.0 ppm		
6									
			Brn	SP		7-8' SAND, fine to medium, little gravel			
8		65	Gry-brn/ org-brn	GM		8-12' SAND, SILT, GRAVEL mix grading to fine to medium SAND, trace silt, gravel towards 12 feet; gravel is angular to rounded up to 1" diameter	5.2 ppm		10

Location: PASSYUNK HOMES | Well Id: PHSB07

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		85	Gry-brn/ red-brn			12-16' SAND, SILT and GRAVEL mix	27.3 ppm		5
14									
							48.5 ppm		
		95				16-20' Same as above, grading to SAND, fine to medium, well-sorted at 19-20', gravel fragments up to 2" diameter, staining, odor at 20'			
18									0
							1000+ ppm		
20		70				20-21' Same as above with large GRAVEL cobbles (possible sluff)			
			Dk gry	SP		21-22' SAND, fine to medium, wet			
22			Gry/brn	SW		22-24' SAND, GRAVEL mix, well-graded, wet, strong odor	895 ppm		
							1000+ ppm		-5
24		90	Dk gry	SP		24-28' SAND, fine to coarse, trace gravel, trace silt, strong odor, wet with water and product	1300+ ppm		

TETRA TECH FW, INC.

Location: PASSYUNK HOMES | Well Id: PHSB07

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		100	Gry			28–31' SAND, fine to medium, well-sorted, trace gravel and silt, black-staining towards 31 feet			-10
30							935 ppm		
			Grn-gry	CL		31–31.5' CLAY, large cobble			
			Gry	SP		31.5–32' SAND, fine to medium			
		100	Gry			32–35.5' SAND, fine to medium, wet	840 ppm		-15
34							44 ppm		
			Grn-gry	CL		35.5–36' CLAY, dense	0.0 ppm		
36						Boring terminated @ 36'			
38									-20
40									

TETRA TECH FW, INC.

Location: PASSYUNK HOMES	Elevation: 21.10'
Well Id: PHSB08	Completed Depth: 33.00'
Logged By: [redacted]	Total Depth: 33.00'
Date(s): 07/21/03 - 07/21/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TERRA PROBE	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 0.00in fm: 0.0' to: 33.00'
X Coordinate: 2718387.26	Screens: type: size: dia: fm: to:
Y Coordinate: 221476.43	Annular Fill: type: fm: to: type: fm: to: type: fm: to: type: fm: to:
Remarks:	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		100		ML		0-3' SILT, loose, some glass at 2.7 feet			20
2			Brn			3-4' SILT, stiff			
4		100	Brn/gry			4-8' Same as above			
6									15
8		100				8-11' Same as above			

Location: PASSYUNK HOMES | Well Id: PHSB08

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
			Brn	SP		11–12' GRAVELLY SAND, poorly graded	30 ppm		10
12		75		GM		12–14' SAND, SILT and GRAVEL mix			
14			Brn	ML		14–15' SILT, stiff			
		75				16–17' SAND, SILT and GRAVEL mix			5
			Brn/gry			17–19' SAND, poorly graded, well–sorted, loose, fine to medium, slightly moist	573 ppm		
18									
20		75		SW		20–22' GRAVELLY SAND, well–graded, strong odor, sheen			0
22				GM		22–23' Grades to SAND, SILT, GRAVEL mix			
24		100				24–28' GRAVELLY SAND, well–graded, poorly sorted, strong odor, wet	1080 ppm		
26									

TETRA TECH FW, INC.

Location: PASSYUNK HOMES | Well Id: PHSB08

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
26									-5
							1257 ppm		
28		100	Gry/brn	SP		28–32' GRAVELLY SAND, poorly graded, fine to medium, strong odor, sheen, black-stained	1203 ppm		
							1410 ppm		
30									
									-10
						Boring terminated @ 33' (refusal)			
34									
36									-15
38									
40									-20
42									

TETRA TECH FW, INC.

Location: PASSYUNK HOMES	Elevation: 20.70'
Well Id: PHSB09	Completed Depth: 28.00'
Logged By: [redacted]	Total Depth: 28.00'
Date(s): 07/22/03 - 07/22/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TERRA PROBE	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 0.00in fm: 0.0' to: 28.00'
X Coordinate: 2718221.65	Screens: type: size: dia: fm: to:
Y Coordinate: 221523.86	Annular Fill: type: fm: to: type: fm: to: type: fm: to:
Remarks:	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		90	Brn	Fl		0-2' FILL, grass, topsoil, organics			20
2			Tan/gry	ML		2-4' SAND, fine and SILT, medium dense	0.0 ppm		
4		100				4-8' SILT, some clay, slightly moist	0.0 ppm		
6									15
8		95				8-9.5' Same as above			
			Red-gry	SP		9.5-12' SILT, grading to fine to medium SAND			

Location: PASSYUNK HOMES | Well Id: PHSB09

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
							5.3 ppm		10
12		90	Red/tan/ gry/yel	GM		12–15' SAND, SILT and GRAVEL mix			
14							14.7 ppm		
			Org/ grn–gry/ red	ML		15–16' CLAYEY SILT, dense	0.0 ppm		5
		75				16–17' Same as above, grading to GRAVELLY SAND at depth			
			Red–brn	GM		17–20' SAND, SILT, GRAVEL mix, large cobble at 19.5 feet			
18									
20		90	Red/brn/ grn			20–24' SAND, SILT, GRAVEL mix, moist from 23–24'	1375 ppm		0
22									
							1000+ ppm		
24		60	Brn			24–28' SAND, SILT, GRAVEL mix, wet	1300+ ppm		
									−5

TETRA TECH FW, INC.

Location: PASSYUNK HOMES

Well Id: PHSB09

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28						Boring terminated @ 28' (refusal)			
30									-10
34									
36									-15
38									
40									-20

TETRA TECH FW, INC.

Location: PASSYUNK HOMES	Elevation: 22.53'
Well Id: MW-55	Completed Depth: 33.00'
Logged By: [redacted]	Total Depth: 44.00'
Date(s): 07/08/03 - 07/17/03	Outer Casing: type: STEEL dia: 8.00in fm: -1.90' to: 2.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 13.00'
X Coordinate: 2717919.18	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 13.00' to: 33.00'
Y Coordinate: 222217.76	Annular Fill: type: Concrete Pad fm: 0.00' to: 0.50'; type: Bentonite Grout fm: 0.50' to: 9.00'; type: Bentonite fm: 9.00' to: 11.00'; type: Sand Pack fm: 11.00' to: 33.00'
Remarks: Well installed using soil log for nearby boring #PHSB10 Ground Surface Elevation: 22.53' Top of Casing Elevation (M.P.): 24.20' Top of Outer Casing Elevation: 24.43' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 24.20)	Elevation (ft)
		100		ML		0-3' SILT, loose, dry			
2			Tan			3-4' CLAYEY SILT, stiff			20
4		100				4-8' Same as above	0.0 ppm		
6									
8		100				8-9.8' Same as above	2.0 ppm		15

TETRA TECH FW, INC.

Location: PASSYUNK HOMES | Well Id: MW-55

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
			Red			9.8–10.4' Same as above with increasing GRAVEL	28 ppm		
						10.4–12' SAND, SILT, GRAVEL mix; variety of lithic frags			
12		100		GM		12–16' Same as above, dry	19.2 ppm		10
14									
		100		ML		16–18.9' Same as above			
18						18.9–19.4' GRAVELLY SILT, stiff	32 ppm		5
				GM		19.4–20' SAND, SILT, GRAVEL mix, strong odor			
20		100				20–21.6' Same as above, loose	242 ppm		
				SW		21.6–22.3' GRAVELLY SAND, loose, product-stained, well-graded			
22				GM		22.3–24' SAND, SILT, GRAVEL mix, stained, strong odor	405 ppm		0
24		100		SM/SP		24–25.9' GRAVELLY SAND, fine, very loose			
26			Brn	SP		25.9–26.4' SAND, poorly graded, fine			

Location: PASSYUNK HOMES | Well Id: MW-55

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
26			Brn	S		25.9-26.4' SAND, poorly graded, fine			
						26.4-28' GRAVELLY SAND, fine, loose, sheen	510 ppm		-5
28		75	Gry/brn	SW		28-32' GRAVELLY SAND, saturated, loose; gravel is well-rounded to sub-rounded, staining, sheen, strong petroleum odor			
30							1372 ppm		
		100	Brn/gry	SP/SM		32-36' GRAVELLY SAND, poorly graded, fine, with increasing GRAVEL, rounded to sub-rounded, lithic frags up to 1" diameter, very loose	1540 ppm		-10
34							1577 ppm		
36			Gry/brn			36-40' SAND, poorly graded, fine grading to very fine, no odor	50 ppm		-15
38							222 ppm		
							40 ppm		
40		100	Gray			40-42' SAND, poorly graded, fine, no odor			
42						42-44' SILT, dense, stiff			

TETRA TECH FW, INC.

Location: PASSYUNK HOMES

Well Id: MW-55

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
42			Gray	ML		[illegible]			
									-20
44						Boring terminated @ 44'			
46									
									-25
50									
52									
									-30
54									
56									
58									-35

TETRA TECH FW, INC.

Location: PASSYUNK HOMES	Elevation: 19.10'
Well Id: PHSB11	Completed Depth: 36.00'
Logged By: [redacted]	Total Depth: 36.00'
Date(s): 09/03/03 - 09/03/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TERRA PROBE	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 0.00in fm: 0.0' to: 36.00'
X Coordinate: 2719368.54	Screens: type: size: dia: fm: to:
Y Coordinate: 221798.70	Annular Fill: type: fm: to: type: fm: to: type: fm: to:
Remarks:	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		100	BROWN ORNG-BRN	FI		0-1' Topsoil, grass, roots, organics 1-4' SAND and GRAVEL, becoming silty towards 3-4'			
2							0.0 ppm		
4		100	TANNISH-GRAY	ML		4-8' Medium dense CLAYEY SILT			15
6							0.0 ppm		
8		90	BRN, RED, & GRAY	GM		8-12' SAND, SILT and GRAVEL mix; gravel ranges from rounded to angular up to 1.5" diameter			10

Location: PASSYUNK HOMES | Well Id: PHSB11

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
							0.0 ppm		
12		90	BROWN & GRAY	SW		12–16' Fine to coarse SAND, trace gravel to some gravel at 13.5–14.5', slight odor	0.0 ppm		
14									5
		90	TAN, BRN, & GRAY			16–20' Some as above with trace to little gravel up to 0.5" diameter, slight staining at 18.5–19.0' odor throughout; soil becomes wet around 18'	160 ppm		
18							1000+ ppm		0
20		80	GRY-BRN	GM		20–24' SAND, SILT, GRAVEL mix, red SHALE at 22', odor	1000 ppm		
22			DK. BRN	SM		22–24' Abrupt change to fine SAND and SILT mix, well-sorted, odor	1200 ppm		
24		85	BROWN	SW		24–28' Medium to coarse SAND, little gravel at 24', 27'; fine SAND and SILT at 25', 28', odor	1000+ ppm		-5

TETRA TECH FW, INC.

Location: PASSYUNK HOMES | Well Id: PHSB11

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		100				28–31' Fine to coarse SAND, trace gravel, odor			
30							1200+ ppm		-10
				SP		31–32' Well-sorted, fine SAND			
		100	GRAY BLUE-GRY			32–32.5' SAND grading to SILTY CLAY from 32.5–36' moderately soft to moderately dense, wet	1000 ppm		
							200 ppm		
34									-15
36						Boring ended at 36'	12.5 ppm		
38									
									-20
40									

TETRA TECH FW, INC.

Location: PASSYUNK HOMES	Elevation: 16.75'
Well Id: MW-60	Completed Depth: 34.00'
Logged By: [redacted]	Total Depth: 36.00'
Date(s): 09/03/03 - 09/10/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 14.00'
X Coordinate: 2719373.92	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 14.00' to: 34.00'
Y Coordinate: 221752.47	Annular Fill: type: Bentonite Grout fm: 0.00' to: 10.00'; type: Bentonite fm: 10.00' to: 12.00'; type: Sand Pack fm: 12.00' to: 36.00'
Remarks: Soil Boring #PHSB12 Ground Surface Elevation: 16.75' Top of Casing Elevation (M.P.): 16.38' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 16.38)	Elevation (ft)
		100		FI		0-1' Grass, organics, topsoil			
			GRAY			1-2.5' Rocks, asphalt, concrete			
2			BROWN	ML		2.5-4' SILTY SAND			15
4		100				4-7' Moderately dense SILT, some black staining			
6									
			RED-BRN	GM		7-8' SAND, SILT, GRAVEL mix			10
8		90				8-12' Same as above			

TETRA TECH FW, INC.

Location: PASSYUNK HOMES | Well Id: MW-60

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		100	BROWN & GRAY	SW		12–16' Fine to medium SAND, little gravel around 12' and 15', sub-rounded to sub-angular, up to 1.5" diameter, slight odor throughout			5
14									
		85	BROWN	SP		16–18' Well-sorted fine to medium SAND, wet, odor Soil sample PHSB (16–18) collected			0
18				GM		18–20' SAND, SILT, GRAVEL, wet, odor, gravel up to 2" diameter			
20		90		SP		20–23' Fine SAND, SILT, well-sorted, odor, wet			
22									-5
				SW		23–24' Fine to coarse SAND, trace gravel	1100+ ppm		
24		100		SP		24–25' Well-sorted, fine SAND			
				SW		25–28' SAND and GRAVEL mix, odor, wet	1055 ppm		
26									

TETRA TECH FW, INC.

Location: PASSYUNK HOMES | Well Id: MW-60

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		100				28–30' SAND and GRAVEL mix, wet, cobbles up to 1" diameter	1100 ppm		-10
30			BRN-GRAY			30–32' Fine to coarse SAND, becoming very fine towards 32'	550 ppm		
		100	GRAY			32–34' Fine to medium SAND, well-sorted	248 ppm		-15
34			BLUE-GRAY			34–36' Large cobble at 34', then abrupt change to SILTY CLAY, medium dense	10 ppm		
36						Boring ended at 36'	0.0 ppm		-20
38									
40									-25

TETRA TECH FW, INC.

Location: Steen Property	Elevation: 21.80'
Well Id: STSB01	Completed Depth: 32.00'
Logged By [redacted]	Total Depth: 32.00'
Date(s): 09/05/03 - 09/05/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TERRA PROBE	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 0.00in fm: 0.0' to: 32.00'
X Coordinate: 2717464.38	Screens: type: size: dia: fm: to:
Y Coordinate: 222356.30	Annular Fill: type: fm: to: / type: fm: to: / type: fm: to: / type: fm: to:
Remarks:	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		100	tan to drk. brn	FI		0-4' SANDY SILT, little gravel, organics, brick fragments, concrete fragments	0.0 ppm		
2									20
4		100				4-6' Same as above with wood chips at 5.5', becoming mostly SILT by 6'	0.0 ppm		
6			gray to tan	ML		6-8' CLAYEY SILT, moderately dense	0.0 ppm		15
8		100	gray & tan			8-12' Same as above with SILT, moderately dense, dry	0.0 ppm		

Location: Steen Property | Well Id: STSB01

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		100				12–15' Same as above with CLAYEY SILT, dense around 13–14.5'	0.0 ppm		10
14									
			dk. gry	SW		15–16' GRAVELLY SAND, cobbles up to 1.5" diameter, sub-angular to sub-rounded	0.0 ppm		
		80	grayish tan	GM		16–19' GRAVELLY SAND, trace silt, wet	2 ppm		5
18							10 ppm		
						19–20' Black-stained GRAVELLY SAND, odor	850 ppm		
20		85				20–21' Same as above	800 ppm		
			brown			21–23' SAND, SILT, GRAVEL mix, dense	86 ppm		0
22									
						23–24' SAND, SILT, GRAVEL, moist	750 ppm		
24		0				24–28' Large cobble			
26									

TETRA TECH FW, INC.

Location: Steen Property | Well Id: STSB01

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		95	dk. gry	SP		28–29' SAND, fine, well–sorted	125 ppm		-5
			red,gry, brown	GM		29–30' SAND, SILT, GRAVEL mix	520 ppm		
30			tan	SP		30–31' SAND, fine, well–sorted	59 ppm		
				CH		31–32' CLAY, soft, very plastic	10 ppm		-10
						Boring ended at 32'			
34									
36									-15
38									
40									-20

TETRA TECH FW, INC.

Location: Steen Property	Elevation: 20.79'
Well Id: MW-62	Completed Depth: 35.00'
Logged By [redacted]	Total Depth: 35.00'
Date(s): 09/05/03 - 09/12/03	Outer Casing: type: dia: 8.00in fm: -0.17' to: 2.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 15.00'
X Coordinate: 2717451.31	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 15.00' to: 35.00'
Y Coordinate: 222279.00	Annular Fill: type: Grout fm: 0.00' to: 11.00'; type: Bentonite fm: 11.00' to: 13.00'; type: Sand Pack fm: 13.00' to: 35.00'
Remarks: Soil Boring #STSB02 Ground Surface Elevation: 20.79' Top of Casing Elevation)M.P.): 20.60' Top of Outer Casing Elevation: 20.96' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction MP. EL. 20.60	Elevation (ft)
		95	dk. brn to brn	FI		0-4' SANDY SILT, trace gravel, trace roots, organics, mica fragments, brick fragments	0.0 ppm		20
2									
4		100				4-6' Same as above with SILTY CLAY, moderately dense	0.0 ppm		
6			tan-gry	ML			0.0 ppm		15
8		100	gray			8-11.5' Same as above with CLAYEY SILT, moderately dense to dense, moist	0.0 ppm		

Location: Steen Property

Well Id: MW-62

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Material Description	PID (ppm)	Elevation (ft)
12		100	yellow-brown	SM	11.5–12' SAND and SILT, fine	0.0 ppm	10
			brown	SW	12–15' SAND, fine to medium, trace gravel, moist from 12.5–14.5'	0.0 ppm	
14						5 ppm	
			red-brn	SM	15–16' Large piece of SHALE or SLATE at 15', fine SAND and SILT	4.3 ppm	
		90		GM	16–20' GRAVELLY SAND, trace silt, becoming darker towards 20'		5
18							
					19–20' Soil sample STSB02(19–20) collected	1100 ppm	
20		80	brn/red/gry/white				0
22							
			dk. gry			1150 ppm	
24		80	gry, tan		24–28' Alternating SAND and GRAVEL layers, slight odor	100 ppm	
							-5

Well Construction

TETRA TECH FW, INC.

Location: Steen Property | Well Id: MW-62

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		90	gry/red/ brown			28–30' SAND, SILT, GRAVEL mix	200 ppm 50 ppm 100 ppm		
30			tan			30–32' Soft CLAY			-10
34						Boring ended at 35'			
36									-15
38									
40									-20

TETRA TECH FW, INC.

Location: Steen Property	Elevation: 22.12'
Well Id: MW-61	Completed Depth: 35.00'
Logged By: [redacted]	Total Depth: 40.00'
Date(s): 09/05/03 - 09/11/03	Outer Casing: type: dia: 8.00in fm: -0.10' to: 2.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 15.00'
X Coordinate: 2717422.14	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 15.00' to: 35.00'
Y Coordinate: 222058.40	
Remarks: Soil Boring #STSB03 Ground Surface Elevation: 22.12 Top of Casing Elevation (M.P.): 21.75 Top of Outer Casing Elevation: 22.22' (NGVD29)	Annular Fill: type: Grout fm: 0.00' to: 11.00' type: Bentonite fm: 11.00' to: 13.00' type: Sand Filter fm: 13.00' to: 35.00'

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 21.75)	Elevation (ft)
		80	dk. brn to brn	FI		0-4' SAND, SILT, some gravel, brick fragments	0.0 ppm		
2									20
4		80		ML		4-6' Same as above grading to CLAYEY SILT at 6'			
6			brown			6-8' CLAYEY SILT, moderately dense	0.0 ppm		15
8		90	brn/gry/ red/white	GM		8-12' SAND, SILT, GRAVEL mix, cobbles up to 1.5" diameter, sub-rounded to sub-angular	0.0 ppm		

Location: Steen Property

Well Id: MW-61

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		85				12-16' Same as above, mostly sand and gravel	0.0 ppm		10
14									
		80				16-20' Same as above	58 ppm 75 ppm		5
18									
20		85	gray	SW		20-24' SAND, fine to coarse, some gravel, odor, black staining at 23-24'	1000 ppm 1200 ppm		0
22						23-24' Soil sample STSB03(23-24) collected			
24		90				24-28' SAND and GRAVEL, wet; dry SHALE for 2" at 17', then back to sand, silt, gravel mix at 27-28'	1200 ppm		
26									

TETRA TECH FW, INC.

Location: Steen Property | Well Id: MW-61

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		50	brown	GM		28–29' Fine SAND	182 ppm		-5
						29–30' Large cobbles 2" diameter			
30			green–brn			30–32' SAND and GRAVEL, very wet, stained greenish–brown, strong odor (like gasoline)	1200+ ppm		
						31–32' Soil sample STSB03(31–32) collected			
		80	gray			32–36' SAND, SILT, GRAVEL mix, stained greenish–brown at 35–36', strong gasoline odor and product observed	1100+ ppm		-10
34									
			green–brn						
36						36–37' SAND, fine to medium, wet, odor			
						37–40' Soft CLAY, 1" of SAND at 39'			-15
38									
40						Boring ended at 40'			

TETRA TECH FW, INC.

Location: Steen Property	Elevation: 21.80'
Well Id: STSB04	Completed Depth: 35.00'
Logged By [redacted]	Total Depth: 35.00'
Date(s): 09/08/03 - 09/08/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TERRA PROBE	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 0.00in fm: 0.0' to: 35.00'
X Coordinate: 2717438.45	Screens: type: size: dia: fm: to:
Y Coordinate: 222181.32	Annular Fill: type: fm: to: type: fm: to: type: fm: to:
Remarks:	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		95	dk. brn	FI		0-2' SAND, fine to medium, some silt, grass, roots, organics,brick fragments, trace micas	0.0 ppm		
2			lighter brown			2-4' Same as above, less roots and organics, little gravel	0.0 ppm		20
4		90				4-6' Same as above			
6			dk. brn to brn	ML		6-8' CLAYEY SILT, moderately dense	0.0 ppm		15
8		100	tan to gray			8-12' CLAYEY SILT, moderately dense to dense, sluff at top	0.0 ppm		

TETRA TECH FW, INC.

Location: Steen Property | Well Id: STSB04

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		100				12–14' Same as above, some fine SAND at 14'			10
14			orange–brown	SM		14–16' Fine SAND and SILT	0.0 ppm		
		100		GM		16–19' SAND, SILT, GRAVEL mix, sluff at top, gravel is coarse, up to 1.5" diameter, angular to sub–rounded	0.0 ppm		5
18									
		100	gray	SW		19–23' GRAVELLY SAND becoming wet at 21', sluff at top	0.0 ppm		
20									
22									0
		85	brn to dk. gry	GM		23–27' SAND, SILT, GRAVEL mix, wet, staining around 25–26'			
24									
26									

TETRA TECH FW, INC.

Location: Steen Property

Well Id: STSB04

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
26							850 ppm		
		100	red, brn, gray	SW		27–31' GRAVELLY SAND, trace silt, gasoline odor	1200 ppm		−5
28									
30							1300 ppm		
		100				31–33.5' Same as above	1400 ppm		
									−10
			tan to gray			33.5–35' CLAY			
34									
						Boring ended at 35'			
36									
									−15
38									
40									
42									−20

TETRA TECH FW, INC.

Location: Steen Property	Elevation: 21.89'
Well Id: MW-63	Completed Depth: 35.00'
Logged By: [redacted]	Total Depth: 44.00'
Date(s): 09/08/03 - 09/12/03	Outer Casing: type: dia: 8.00in fm: -0.11' to: 2.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 15.00'
X Coordinate: 2717594.65	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 15.00' to: 35.00'
Y Coordinate: 222035.01	Annular Fill: type: Grout fm: 0.00' to: 11.00'; type: Bentonite fm: 11.00' to: 13.00'; type: Sand Pack fm: 13.00' to: 35.00'
Remarks: Soil Boring #STSB05 Ground Surface Elevation: 21.89' Top of Casing Elevation (M.P.): 21.66' Top of Outer Casing Elevation: 22.00' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 21.66)	Elevation (ft)
		100	dk. gry to brn	FI		0-4' SANDY SILT, trace brick fragments, micas, gravel, roots, organics	0.0 ppm		
2									20
4		100	gry-tan	ML		4-8' CLAYEY SILT	0.0 ppm		
6									15
8		90				8-12' Same as above			

Location: Steen Property

Well Id: MW-63

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		90				12–14' Same as above, dense in areas	0.0 ppm		10
14				SP		14–16' SAND, well-sorted, fine to medium	2.1 ppm		
		100	brn-gry	ML		16–20' Fine SAND at 16', grading to SILT around 18', to a slightly moist SILTY CLAY towards 20'	0.0 ppm		5
18									
20		100				20–23' Same as above, moist	0.3 ppm		
22									0
			dk. gry	SP		23–24' SAND, wet, fine to medium, odor; collected soil sample STSB05(23–24)	1500 ppm		
24		50	gry to brown	GM		24–28' SAND, SILT, GRAVEL mix, sandy at bottom, wet, strong gasoline odor towards 28'	1300+ ppm		

Location: Steen Property

Well Id: MW-63

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		60	dk. gry to brn			28–29.5' GRAVELLY SAND, coarse, trace silt, strong odor	1400 ppm		-5
30			dk. gry	SP		29.5–32' SAND, well–sorted, fine to medium, strong odor	1200 ppm		
						31–32' Soil sample STSB05(31–32) collected			
		100	gray			32–33.5' SAND, very fine, wet	950 ppm		-10
34			gry to black	SW		33.5–35' GRAVELLY SAND, stained black in areas	825 ppm		
			gray	SM		35–36' Fine SAND and SILT, wet	800 ppm		
36		100		SP		36–39' SAND, fine to medium, well–sorted	20 ppm		-15
38							100 ppm		
			gry & tan	GP		39–40' GRAVEL, 2" diameter, well–rounded, trace sand and silt	70 ppm		
40									-20

Location: Steen Property

Well Id: MW-63

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
44						Ended boring at 44'			
46									
									-25
50									
52									-30
54									
56									
									-35

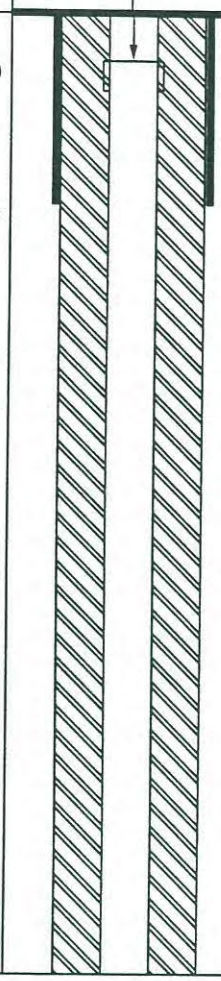
TETRA TECH FW, INC.

Location: Steen Property	Elevation: 23.30'
Well Id: MW-64	Completed Depth: 35.00'
Logged By: [redacted]	Total Depth: 40.00'
Date(s): 09/10/03 - 09/15/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: PVC dia: 4.00in fm: 0.0' to: 15.00'
X Coordinate: 2717366.85	Screens: type: Slotted size: 0.020in dia: 4.00in fm: 15.00' to: 35.00'
Y Coordinate 221645.01	Annular Fill: type: Grout fm: 0.00' to: 11.00'; type: Bentonite fm: 11.00' to: 13.00'; type: Sand Pack fm: 13.00' to: 35.00'
Remarks: Soil Boring #STSB06 Ground Surface Elevation: 23.30' Top of Casing Elevation (M.P.): 22.81' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)
		100	gray-black	FI		0-2' SANDY SILT, some gravel, asphalt at top, trace brick fragments	0.0 ppm
2			gry & tan	ML		2-4' CLAYEY SILT, moderately dense	0.0 ppm
4		100	blue-gray			4-8' Same as above	0.0 ppm
6							
8		100				8-10' Same as above	0.0 ppm

Well Construction

MP. EL. 22.81



Elevation (ft): 20, 15

TETRA TECH FW, INC.

Location: Steen Property | Well Id: MW-64

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
			brn/red/ gray	GM		10–12' SAND, SILT, GRAVEL; gravel up to 1.5", angular to sub-rounded	8.7 ppm		
12		40				12–16' Same as above with large cobble, large pieces of gravel approx. 2" diameter	0.0 ppm		10
14									
		100	red-brn	SW		16–20' SAND, fine to coarse, trace silt, trace gravel			
18									5
							4.1 ppm		
20		85	brn/red/ gray	GM		20–24' SAND, SILT, GRAVEL mix, becoming more gravelly towards 24'			
22									
							450 ppm		0
24		80				24–28' Same as above, strong odor, staining at 27–28' becoming wet at 25'			
26									

TETRA TECH FW, INC.

Location: Steen Property

Well Id: MW-64

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
26						27–28' Soil sample STSB06(27–28) collected	1800 ppm		
28		100		SW		28–32' SAND, fine to coarse, staining at 28' and 31', trace silt, trace gravel, clay lens at 30'	1200 ppm		-5
30									
		90	brown	SP		32–36' SAND, well–sorted, fine to medium, trace silt, trace gravel, wet, strong odor	2000 ppm 1500 ppm		-10
34									
36		100				36–37' Some as above	1700 ppm		
			tan to gray			37–40' CLAY, moderately soft	29.5 ppm 20 ppm		
38									-15
40						Boring ended at 40'			
42									

TETRA TECH FW, INC.

Location: Steen Property	Elevation: 22.60'
Well Id: STSB07	Completed Depth: 40.00'
Logged By [redacted]	Total Depth: 40.00'
Date(s): 09/10/03 - 09/10/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TERRA PROBE	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 0.00in fm: 0.0' to: 40.00'
X Coordinate: 2717593.88	Screens: type: size: dia: fm: to:
Y Coordinate: 221602.14	Annular Fill: type: fm: to: type: fm: to: type: fm: to:
Remarks:	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		100	orange-brown	ML		0-4' SILT, some grass and topsoil, moderately dense	0.0 ppm		
2									20
4		100				4-8' Same as above	0.0 ppm		
6									
8		90				8-12' Same as above with SAND and GRAVEL mixed in at 11-12'	0.0 ppm		15

TETRA TECH FW, INC.

Location: Steen Property

Well Id: STSB07

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		100	brown	SP		12–15' SAND, fine to medium, sluff at top, trace silt, gravel	2.2 ppm		10
14				GM		15–16' Large cobble at 15', SAND, SILT, GRAVEL mix at 15–16'	3.2 ppm		
		100	reddish brown			16–20' Same as above, sluff at top, SAND, SILT, GRAVEL mix, dry	3.3 ppm		5
18									
20		85				20–24' Same as above, becoming moist around 23', staining at 23–24'			0
22									
24		90				24–28' Same as above; soil sample STSB07(24–26) collected, strong odor, sample soaked with product	1200 ppm 1300+ ppm		

TETRA TECH FW, INC.

Location: Steen Property | Well Id: STSB07

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		70		SW		28–32' Product–soaked SAND and GRAVEL, trace silt,	1300 ppm		-5
30									
							1500 ppm		-10
34									
		60				35–37' Same as above, little clay, strong odor	1600 ppm		
36									
									-15
38		100				38–40' Same as above, 3" of CLAY towards 40'			
40						Boring ended at 40'			

TETRA TECH FW, INC.

Location: Steen Property	Elevation: 21.70'
Well Id: STSB08	Completed Depth: 40.00'
Logged By: [redacted]	Total Depth: 40.00'
Date(s): 09/11/03 - 09/11/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TERRA PROBE	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 0.00in fm: 0.0' to: 40.00'
X Coordinate: 2717542.68	Screens: type: size: dia: fm: to:
Y Coordinate: 222013.99	Annular Fill: type: fm: to: type: fm: to: type: fm: to:
Remarks:	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		100	dk. brn to brn	Fl		0-4' SAND, SILT, topsoil, organics, brick fragments, gravel, micas	0.0 ppm		
2									20
4		100				4-6' Same as above	0.0 ppm		
6			gray-tan	ML		6-8' CLAYEY SILT, moderately dense	0.0 ppm		15
8		100	tan			8-12' Same as above, slightly moist	0.0 ppm		

Location: Steen Property | Well Id: STSB08

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		100				12–14' Same as above	0.0 ppm		10
14			brown	SP		14–16' SAND, fine to medium, some gravel at 12'	8.1 ppm		
		0				16–20' Large cobble			5
18									
20		100		ML		20–23' SILT and CLAY, wet, soft	0.0 ppm		
22									0
			dk. gray	SW		23–24' SAND, wet, fine to coarse, trace gravel, trace silt, odor	1215 ppm		
24		80				24–28' Same as above	1731 ppm		
26									

TETRA TECH FW, INC.

Location: Steen Property

Well Id: STSB08

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		95				28–32' SAND, fine to coarse, trace gravel, trace silt, stained black at 30–32', strong odor	1600+ ppm		-5
30									
		100				32–36' Same as above, no staining, strong odor	1700 ppm		-10
34									
36		100		SP			15.1 ppm		-15
38			tan	CL		38–40' CLAY, soft, moist	0.0 ppm		
40						Boring ended at 40'			-20

TETRA TECH FW, INC.

Location: Steen Property	Elevation: 22.30'
Well Id: STSB09	Completed Depth: 40.00'
Logged By: [redacted]	Total Depth: 40.00'
Date(s): 09/12/03 - 09/12/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TERRA PROBE	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 0.00in fm: 0.0' to: 40.00'
X Coordinate: 2717568.68	Screens: type: size: dia: fm: to:
Y Coordinate: 222130.21	Annular Fill: type: fm: to: type: fm: to: type: fm: to:
Remarks:	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		100	brown	FI		0-4' SANDY SILT, trace gravel, micas, organics, brick fragments	0.0 ppm		
2									20
4		100	gry-tan	ML		4-8' CLAYEY SILT, moderately dense	0.0 ppm		
6									15
8		100				8-12' Same as above	0.0 ppm		

Location: Steen Property

Well Id: STSB09

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		60				12–14' Same as above	0.0 ppm		10
14			dk. gry	GM		14–16' SAND, SILT, GRAVEL mix	11.3 ppm		
		50				16–17' Same as above	12.2 ppm		
			brown	SW		17–20' SAND, fine to coarse	234 ppm		5
18									
20		60				20–24' Same as above, becoming wet around 22', strong odor	1500 ppm		
22									0
24		60	gray & brn	GW		24–28' SANDY GRAVEL, wet, trace silt, gravel up to 2" diameter, angular to sub-rounded	500 ppm		
26									

TETRA TECH FW, INC.

Location: Steen Property

Well Id: STSB09

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
26									
							1000 ppm		-5
28		90				28–29' Same as above	585 ppm		
				SW		29–32' SAND, fine to coarse, stained black towards 32', trace gravel, silt			
30									
							750 ppm		
		90	gry–brn			32–36' SAND, fine to coarse, becoming very gravelly towards 36'	600 ppm		-10
34									
							1600 ppm		
36		100				36–37' Same as above	1000 ppm		
			tan to blue–gry	CL		37–40' SILTY CLAY, wet, soft	0.0 ppm		-15
38									
40						Boring ended at 40'			
42									

TETRA TECH FW, INC.

Location: CSX	Elevation: 51.30'
Well Id: CSXSB01	Completed Depth: 56.00'
Logged By: [redacted]	Total Depth: 56.00'
Date(s): 09/02/03 - 09/11/03	Outer Casing: type: dia: 0.00in fm: 0.00' to: 0.00'
Drilling Subcontractor: TERRA PROBE	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 0.00in fm: 0.0' to: 56.00'
X Coordinate: 2717731.43	Screens: type: size: dia: fm: to:
Y Coordinate: 223557.29	Annular Fill: type: fm: to: type: fm: to: type: fm: to:
Remarks: No well installed	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		100	white, blk & brn	FI		0-4' SAND and SILT, little gravel	0.0 ppm		50
2									
4		100	blk, brn, gray			4-8' SAND, SILT, GRAVEL, some mica	0.0 ppm		
6									45
8		100				8-12' Same as above	0.0 ppm		
						9.5' Brick fragments			

Location: CSX

Well Id: CSXSB01

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		85				12–16' Same as above with fill, brick and wood fragments	0.0 ppm		40
14									
		85				16–20' Same as above	0.0 ppm		35
18									
20		70				20–24' Same as above	0.0 ppm		
22									30
24		100	brn-gry			24–28' Same as above, slightly wet, becoming mostly SILT around 26.5–28'	0.0 ppm		

Location: CSX

Well Id: CSXSB01

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		100	black			28–32' Fill, possible staining, possible sluff near top, brick fragments throughout	0.0 ppm		25
30									
		100	tan to gray	ML		32–33' Possible end of fill	0.0 ppm		20
34						33–36' SILT and CLAY, slightly moist			
36			orange-brown			36–40' SILT, dense, with little rounded gravel	0.0 ppm		15
38									
40		100	orange			40–44' SILT, dense, wet	0.0 ppm		10

TETRA TECH FW, INC.

Location: CSX

Well Id: CSXSB01

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
44		100	gray			44–47' CLAY, wet, some silt, dense at 44' becoming softer towards 47'	0.0 ppm		5
46			gry & tan			47–48' SAND, fine, mottled	33.1 ppm		
		85	tan, gry, & brn			48–52' SAND, SILT, GRAVEL mix, wet	19.3 ppm		
50									0
52		65				52–56' Same as above	30 ppm		
54									
56						Boring ended at 56' (refusal)	200 ppm		-5

TETRA TECH FW, INC.

Location: CSX	Elevation: 45.01'
Well Id: CSXMW-7	Completed Depth: 60.00'
Logged By: [redacted]	Total Depth: 60.00'
Date(s): 08/29/03 - 09/24/03	Outer Casing: type: dia: 8.00in fm: -2.51' to: 2.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: dia: 4.00in fm: 0.0' to: 40.00'
X Coordinate: 2717545.96	Screens: type: Slotted size: 0.002in dia: 4.00in fm: 40.00' to: 60.00'
Y Coordinate: 222491.47	Annular Fill: type: Grout fm: 0.00' to: 36.00'; type: Bentonite fm: 36.00' to: 38.00'; type: Sand Pack fm: 38.00' to: 60.00'
Remarks: Soil Boring #CSXSB02 Ground Surface Elevation: 45.01' Top of Casing Elevation (M.P.): 47.19' Top of Outer Casing Elevation: 47.53' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
		100	Brn & orng	Fl		0-4' FILL, SANDY SILT, trace gravel, trace clay, roots, organics, glass and brick fragments		MP. EL. 47.19	
2									
4		100	Brn			4-8' Same as above with trace mica fragments	0.00 ppm		
6									40
8		25				8-12' Same as above, cobble	0.00 ppm		

Location: CSX

Well Id: CSXMW-7

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		35				12–16' Same as above	0.00 ppm		
14									30
		100	Orng & brn			16–20' FILL, fine SAND and SILT, trace clay, trace gravel, some mica fragments	0.00 ppm		
18									
20		95	Gry			20–23' Same as above	0.00 ppm		25
22									
						23–24' SILTY CLAY layer followed by a large gray cobble, followed by brick fragments			
24		95				24–26.5' Same as above with fill	0.00 ppm		
						25' Large brick fragments			20
26									

TETRA TECH FW, INC.

Location: CSX

Well Id: CSXMW-7

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
26						26.5–28' SILT and CLAY, moderately dense			
28		90		ML		28–32' Same as above, moderately soft to moderately dense	0.00 ppm		
30									15
		100	Gry	SP		32–36' SAND, fine, slightly moist, some silt, well-sorted	0.00 ppm		
34									
				GM		35.5' SAND, SILT, GRAVEL mix			10
36		95	Orng			36–37' Same as above, slightly moist	0.00 ppm		
						37–39' Black staining, slight odor, mostly fine GRAVEL, some cobbles up to 1" diameter			
38									
40		5				40–43.5' Same as above, mostly SAND and GRAVEL, moist at 43'	12 ppm		5
42									

Location: CSX

Well Id: CSXMW-7

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
+2									
				SW		43.5–45.5' Same as above, SAND, SILT, GRAVEL, stained black, stong odor	170 ppm		
44						45.5–47.5' Same as above, large cobbles, strong odor			0
		100		GM		46–47' Soil sample CSXSB02(46–47) collected	772 ppm		
46						Boring ended with geoprobe at 47.5' (refusal)			
	8 12 20 20	90	Gry	SW		48–50' Fine to coarse SAND, wet, trace gravel, small clay layer at 48'; small silt layer at 49'	1000 ppm 1100 ppm		
50	6 21 20 23	50				50–52' Same as above, slightly more gravel	500 ppm 700 ppm		−5
52	15 18 22 21	100	Gry			52–54' 50% sluff, SAND, SILT, GRAVEL mix, strong gasoline odor. Soil sample CSXSB02(53–54) collected	1600 ppm		
54	7 14 18 21	90	Gry	SP		54–56' Fine to medium SAND, trace gravel, strong gasoline odor. Soil sample CSXSB02(55–56) collected. 1" SHALE at 56'	1600 ppm 1900 ppm		−10
56	10 15 23 23	70	Gry	SW		56–58' SAND and GRAVEL mix, SILT layer at 58', strong gasoline odor; soil sample CSXSB02(56–58) collected.	1600 ppm 2000 ppm		
58									

TETRA TECH FW, INC.

Location: CSX

Well Id: CSXMW-7

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
58	8 8 15 13	75	Gry			58–60' Same as above, SAND and GRAVEL, strong odor, possible CLAY at 60'	1500 ppm		
60						Boring ended (with drill rig) at 60'	2000 ppm		-15
62									
									-20
66									
68									
70									-25
72									
74									

TETRA TECH FW, INC.

Location: CSX	Elevation: 47.24'
Well Id: CSXMW-8	Completed Depth: 60.00'
Logged By [redacted]	Total Depth: 60.00'
Date(s): 09/02/03 - 09/18/03	Outer Casing: type: dia: 8.00in fm: -0.20' to: 2.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE	Inner Casing: type: dia: 4.00in fm: 0.0' to: 40.00'
X Coordinate: 2717609.88	Screens: type: Slotted size: 0.002in dia: 4.00in fm: 40.00' to: 60.00'
Y Coordinate: 222563.85	Annular Fill: type: Grout fm: 0.00' to: 36.00'; type: Bentonite fm: 36.00' to: 38.00'; type: Sand Pack fm: 38.00' to: 60.00'
Remarks: Soil Boring #CSXSB03 Ground Surface Elevation: 47.24' Top of Casing Elevation (M.P.): 47.01' Top of Outer Casing Elevation: 47.44' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 47.01)	Elevation (ft)
0		90	Dk brn	Fl		0-4' FILL, GRAVELLY SAND, little silt, organics, brick fragments, cobbles up to 1" diameter	0.00 ppm		
2									45
4		85				4-6' Same as above, large cobble, 2" diameter at 5.5'			
6						6-8' FILL, becoming very silty			
8		80				8-12' Same as above, 4" brick piece at 9', SILT and CLAY towards 12'	0.00 ppm		40

Location: CSX

Well Id: CSXMW-8

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		100				12–16' Same as above, many mica chips at 13–14.5'	0.00 ppm		35
14									
		100	Brn–blk			16–19' Same as above, some sluff at top, sand, silt, mica, little gravel, brick fragments	0.00 ppm		30
18									
		55				19–23' FILL (sand, silt, gravel, micas), large cobbles at 19–19.5', possible concrete at 19.5 – 22'	0.00 ppm		
20									
22			Brn			22–23' FILL (silt and clay), moderately dense	0.00 ppm		25
		65				23–27' FILL (silt and clay), moderately soft, trace sand, gravel, mica (large quantity at 25.5 and 27', possible weathered schists			
24									
26									

Location: CSX

Well Id: CSXMW-8

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
26									
		55				27–30' Same as above	0.00 ppm		20
28									
30			Dk gry			30–31' SILT and CLAY, possible staining, moderately soft			
		90	Brn	ML		31–35' SILTY CLAY, moderately soft to moderately dense	0.00 ppm		15
34									
		95				35–37' Same as above, slight staining	0.00 ppm		
36							3.5 ppm		
						37–38' SAND, fine to medium, black-stained, trace silt	18.5 ppm		10
38			Brn	SP		38–39' SAND and SILT, black staining, trace gravel			
		100	Gry	GM		39–43' SAND, SILT, GRAVEL mix, stained black in certain areas, gravel up to 2" diameter, sub-rounded to sub-angular, slight odor	21.5 ppm		
40									
42									

Location: CSX

Well Id: CSXMW-8

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Material Description	PID (ppm)	Elevation (ft)
42							5
			Gry		43–45' SAND and SILT, trace gravel, stained black towards 45'	10 ppm	
44				SM		22.5 ppm	
			Brn		45–47' SAND, fine to medium, trace silt, trace gravel, odor, wet towards 47' (water table)		
46				SW		600 ppm	
			Brn		47–50' SAND, SILT, GRAVEL mix, strong odor, gravel (very coarse, approx. 2" diameter, towards 50');		0
				GM		1000 ppm	
50	9 9 24 29	100	Blk			1800 ppm	
					Boring ended with geoprobe at 50' (refusal)	1900 ppm	
					50–52' Strong gasoline odor	1500 ppm	
52	14 18 12 14	60			50.5–51.5' Medium SAND Soil sample CSXSB03(51) collected at 51'	1800 ppm	−5
					51.5–52 SILTY GRAVEL	2000 ppm	
					52–52.5' Same as above	900 ppm	
54	27 16 14 12	100			52.5–54' Medium to coarse SAND with some silt, strong gasoline odor; little gravel at 52.5–54'	1000 ppm	
						1500 ppm	
			Gry		54–55' Same as above	1700 ppm	
						1800 ppm	
56	8 10 10 11	100			55–56' Medium SAND with little rounded gravel	200 ppm	
						400 ppm	
					56–58' Same as above, possibly slightly finer grained; no gravel; soil sample CSXSB03(56) collected at 56'	1500 ppm	−10
58							

TETRA TECH FW, INC.

Location: CSX

Well Id: CSXMW-8

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
58	4 6 10 12	100					1800 ppm		
						58–60' Same as above, slightly coarser near bottom; soil sample CSXSB03(60) collected at 60'			
60							2100 ppm		
						Boring ended at 60'			
62									-15
66									-20
68									
70									
72									-25
74									

TETRA TECH FW, INC.

Location: CSX	Elevation: 48.23'
Well Id: CSXMW-3A	Completed Depth: 60.00'
Logged By: [redacted]	Total Depth: 60.00'
Date(s): 08/28/03 - 09/16/03	Outer Casing: type: dia: 8.00in fm: -0.04' to: 2.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: dia: 4.00in fm: 0.0' to: 40.00'
X Coordinate: 2717664.03	Screens: type: Slotted size: 0.002in dia: 4.00in fm: 40.00' to: 60.00'
Y Coordinate: 222923.33	Annular Fill: type: Grout fm: 0.00' to: 36.00'; type: Bentonite fm: 36.00' to: 38.00'; type: Sand Filter fm: 38.00' to: 60.00'
Remarks: Soil Boring #CSXSB04 Ground Surface Elevation: 48.23' Top of Casing Elevation (M.P.): 47.50' Top of Outer Casing Elevation : 48.27' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 47.50)	Elevation (ft)
0		100		FI		0-2' FILL, fine to medium sand, little fine to coarse gravel, roots, organics, brick fragments, slag	0.00 ppm		
2						2-4' Same as above becoming very silty towards 4'			
4		100				4-8' FILL, same as above, with glass fragments, micas, wood chips			45
6									
8		80	Brn-blk			8-12' FILL, sand, silt, gravel, brick and glass fragments	0.00 ppm		40

Location: CSX | Well Id: CSXMW-3A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		60				12–16' Same as above, with some clay	0.00 ppm		35
14									
		95				16–20' Same as above with large brick fragments (2" diameter) at 18–19'	0.00 ppm		
18									30
20		85	Brn–blk			20–24' Same as above, FILL	0.00 ppm		
22									25
24		80				24–28' Same as above, FILL, organics, brick fragments at 25', 27'	0.00 ppm		
26									

Location: CSX

Well Id: CSXMW-3A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		70				28–32' Same as above, FILL, clayey silt at 32'			20
30									
		90				32–33' Same as above, FILL	0.00 ppm		
			Gry	ML		33–33.5' Large cobbles, wet, odor, sheen, large brick fragments at 33.5'	18.5 ppm		15
34						33.5–36' CLAY and SILT, moist, dense, slight odor			
							20.6 ppm		
36		100	Gry			36–36.5' SILT, trace gravel, moist			
						36.5–37.5' Becoming a SILT and fine SAND mix, black staining			
			Gry–tan			37.5–39' CLAYEY SILT, medium dense	0.00 ppm		
38									10
				GM		39–40' SAND, SILT, GRAVEL mix, slight odor, large cobbles up to 2" diameter, sub–rounded to sub–angular			
40		100				40–42' Same as above, wet, slight odor			

Location: CSX | Well Id: CSXMW-3A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
42						42–44' Same as above, dry			5
44		75	Gry & brn			44–46' SAND, SILT, GRAVEL mix, wet			
46			Tan			46–48' SAND, SILT, GRAVEL mix, slightly moist, slight odor	115 ppm		
		60				48–52' SAND, SILT, GRAVEL mix, wet, large cobbles (2" diameter), soil sample CSXSB04(48–49) collected at 48–49'	236 ppm		0
50									
52		85				52–55' Same as above, very coarse GRAVEL, sand, silt mixed, wet, odor			-5
54							1000 ppm		
			Gry			55–56' SAND, well-sorted, fine to medium, odor			
56		50	Gry			56–57' Same as above with staining	950 ppm		
				SP		56–58' Soil sample CSXSB04(56–58) collected	1500 ppm		
58						57–59' Same as above, becoming very gravelly towards 59', cobbles approx. 1" diameter			

TETRA TECH FW, INC.

Location: CSX

Well Id: CSXMW-3A

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
				SW					
						Boring ended at 59' (refusal)			
60									
62									
66									
68									
70									
72									
74									

10
15
20
25

TETRA TECH FW, INC.

Location: CSX	Elevation: 49.57'
Well Id: CSXMW-9	Completed Depth: 60.00'
Logged By: [redacted]	Total Depth: 60.00'
Date(s): 09/12/03 - 09/23/03	Outer Casing: type: dia: 8.00in fm: -1.79' to: 2.00'
Drilling Subcontractor: TerraProbe/Chesapeake Geosystems	
Drilling Method: GEOPROBE, HOLLOW STEM AUGER	Inner Casing: type: dia: 4.00in fm: 0.0' to: 40.00'
X Coordinate: 2717606.97	Screens: type: Slotted size: 0.002in dia: 4.00in fm: 40.00' to: 60.00'
Y Coordinate: 223042.57	Annular Fill: type: Grout fm: 0.00' to: 36.00'; type: Sand Pack fm: 36.00' to: 60.00'; type: Bentonite fm: 36.00' to: 36.00'
Remarks: Soil Boring #CSXSB05 Ground Surface Elevation: 49.57' Top of Casing Elevation (M.P.): 51.16' Top of Outer Casing Elevation : 51.36' (NGVD29)	

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction (MP. EL. 51.16)	Elevation (ft)
0		100	brn, red, blk, white	FI		0-4' FILL, sand, gravel, some silt, brick fragments	0.0 ppm		
2									
4		90				4-8' Same as above, becoming very silty towards 8'	0.0 ppm		45
6									
8		90	brown			8-12' Same as above, mostly silt, some clay	0.0 ppm		40

Location: CSX

Well Id: CSXMW-9

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
12		75				12-16' Same as above with some mica chips at 15-16'	0.0 ppm		
14									35
		90				16-20' Same as above	0.0 ppm		
18									
20		100				20-24' Same as above	0.0 ppm		30
22									
24		55	brn, gry			24-28' FILL, silt, some sand and gravel, up to 2" diameter, trace brick fragments, mica chips	9.1 ppm		25

Location: CSX

Well Id: CSXMW-9

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
28		70	tan to gray			28–32' FILL, silt, moderately dense to moderately soft, slightly moist, trace coarse sand and gravel	6.1 ppm		20
30									
		80	blue-gry			32–36' FILL, silt, soft to dense, slightly moist, brick and wood fragments at 34–35'	11.3 ppm		
34									15
36		85				36–40' SILT, medium dense, trace clay, sand, gravel	130 ppm		
38			gry & tan	ML			120 ppm		
40		80	red-gray	SM		40–42' Fine SAND, SILT, odor	1000 ppm		10
42									

Location: CSX

Well Id: CSXMW-9

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
42			red, brn, gray	GM		42–44' SAND, SILT, GRAVEL mix, gravel sub-rounded to angular, up to 1" diameter	50 ppm		
44		90				44–48' Same as above, becoming wet at 46'	100 ppm 900 ppm		5
46									
						47–48' Soil sample CSXSB05(47–48) collected			
		90				48–52' Same as above, odor	1100 ppm 1000 ppm		0
50									
52		95	gray, red-gry			52–56' SAND, fine to coarse, trace silt, trace gravel, strong odor			
54						54–56' Soil sample CSXSB05(54–56) collected			-5
							1550 ppm		
56		0							
58									

Location: CSX

Well Id: CSXMW-9

Depth (ft)	Blow Count	Recovery %	Color	USCS Code	Graphic Log	Material Description	PID (ppm)	Well Construction	Elevation (ft)
60						Boring ended at 60' (refusal)			10
62									
									15
66									
68									
									20
70									
72									
74									

PARS ENVIRONMENTAL INC.

LOG OF MONITORING WELL
DSCP-MW-65

Drill Method: Hollow Stem Auger	**Date Drilled:** 1/14/2013	**Logged By:** Eric White, PG
Drilling Contractor: Ameridrill	**Permit No:**	

Recovery	Blow Count	Completion	PID Response (ppm)	Lithology	Depth Feet	Description	Remarks
						0' - 1.5': Asphalt and Concrete	
					5	1.5': Brown (10YR 4/3), well-graded, fine to coarse FILL with SILT, SAND, and some sub-rounded GRAVEL. ...(4') color change to dark brown (10YR 5/2).	
					10	ALLUVIUM: Grayish brown (10YR 5/2) SILT ...(9') slightly more CLAY than above, color change to dark grayish brown (10YR 4/2).	
					15	...(14') loss of CLAY, less SILT than above.	
					20	TRENTON GRAVEL: Brown (10YR 5/3), poorly sorted, fine to coarse, SILTY GRAVEL, with angular clasts and SILT with trace CLAY.	
					25	...(25' - 30') very dark grayish brown (10YR 3/2), varying amounts of SAND and small GRAVEL.	
					30		
					35	FARRINGTON SAND: Light brownish gray (10YR 6/2), moderately sorted, medium to coarse angular SAND.	
					40		
					45		

Completion Notes:

1. Total depth of boring = 45'.
2. Groundwater encountered at 23' during drilling, later recovered to 20'.
3. Petroleum odor below 14'.
4. 4" schedule 40 PVC well completed with 0.020" slots from 15' to 45'.

Site: Fmr. Defense Supply Center Philadelphia

Philadelphia, PA

Project No: 756-03

Page: 1

URFACE BORING LOG

BOREHOLE NO. **CPT-01**

Page 1 of 1

Aquaterra Technologies, Inc.

[redacted]

PROJECT: **P**
SITE LOCATION **Refinery**
JOB NO.:
LOGGED BY:
DATES DRILLE

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **42'**

DEPTH (feet)	SAMP INTER		LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					Previously Cleared to 4'
-5					
-10					
-15					Auger to 25'
-20					
-25		9999			
		9999			
		9999			
	Sample taken 28.3-28.7'	9999	Spoon Refusal @ 29', Auger Past		
-30		9999			
	Sample taken 34.55-34.95'	9999			
-35		9999			
	Sample taken 35.8-36.2'	8157	No Recovery		
		1553	Clay in bottom		
-40		256			Boring Complete to 42'
		70.8			

SUBSURFACE BORING LOG

BOREHOLE NO. **CPT-03**

PROJECT: **Sunoco - DSCP**
SITE LOCATION: **Philadelphia Refinery**
JOB NO.:
LOGGED BY: [redacted]
DATES DRILLED: **13-14 Nov 2008**

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **39'**

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					Previously Cleared to 4'
-5					
-10					
-15					
		7.5	Dark brown clayey sand w/ cinders (22" recovery)		Auger to 16'
	Sample taken 16.3-16.7'	1033	Moist brown sand and gravels		
-20	Sample taken 19-19.4'	564	Brown sand, clayey at top		
		1176			
-25					
	Sample taken 28.2-28.6'	1304	Saturated, soft, sandy clay		
-30		1394	Brown, coarse sand w/ small gravels		
-35					
	Sample taken 37.5-37.9'	1104	Gray/brown finer sand		
		387			Boring Complete to 39'

SUBSURFACE BORING LOG

BOREHOLE NO. **CPT-05**

Page 1 of 1

Aquaterra Technologies, inc.

PROJECT: **Sunoco - DSCP**
SITE LOCATION: **Philadelphia Refinery**
JOB NO.:
LOGGED BY: [redacted]
DATES DRILLED: **27 Oct 2008**

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **38'**

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0		6.2			
					Previously Cleared to 10'
	Sample taken 2.6-3.0'	89.6			
-5					
-10		20.4	Wet, light brown-gray sand wtih fine gravels		Auger to 10'
		5.2	Sand with fine gravel		
		21.1	Sand with gravel		
-15		367	Sand with gravel		
	Sample taken 16.8-17.2'	340	Larger gravel @ 20'		
-20		196	Sand with gravel		
		110	Sand with gravel		
	Sample taken 22.8-23.2'	1412	Sand with gravel		
-25		741	Sand with gravel		
		1712	Sand with gravel		
-30		1308	Sand with gravel		
	Sample taken 30.8-31.2'	1452	Sand with gravel		
		1417	Transition from sand to clay (finer) at 35'		
-35		10.9	Clay		Boring Complete to 38'
		7.5			

Aquaterra Technologies, Inc.

RFACE BORING LOG

BOREHOLE NO. **CPT-08**

Page 1 of 1

PROJECT:
SITE LOCATION [redacted] nery
JOB NO.:
LOGGED BY:
DATES DRILLE

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **36'**

DEPTH (feet)	SAMP INTER		LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					Previously Cleared to 4'
-5					
-10					
-15					
		134	Moist, sandy clay		
-20	Sample taken 20.1-20.5'	1451	Moist, gravel		Auger to 20'
		1408			
		1593	Large gravels w/ some sand matrix		Boring moved twice due to recovery problems w/ cobble - three sample depths collected from three seperate boreholes.
	Sample taken 22.6-23.4'	706			
-25		1901			
-30					
	Sample taken 34.8-35.2'	1767	Coarse sand (17" recovery)		
-35		465			
		328			Boring Complete to 36'

SUBSURFACE BORING LOG

BOREHOLE NO. **CPT-09**

Aquaterra Technologies, inc.

PROJECT: **Sunoco - DSCP**
SITE LOCATION: **Philadelphia Refinery**
JOB NO.:
LOGGED BY: [redacted]
DATES DRILLED: **29 Oct 2008**

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **42'**

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					Previously Cleared to 4'
-5					
-10					
		36.6	Moist orange sand and gravel		Auger to 12'
		3.3	Moist clayey sand w/ gravel		
-15		110	Same orange sand w/ gravel, more moist @ 18'		
		207	Tight sandy clay, sand @ 18'		
-20	Sample taken 20-20.6'	1305			
		1255	Wet (saturated)		
	Sample taken 23.5-23.9'	1335	Very loose, saturated sand (no core), sheen visible		
-25		1144			
		482	Sand		
		1096	Sand		
-30		1015	Sand w/ gravels		
	Sample taken 31.4-32'	1254	Slightly clayey with larger gravel at 34'		
		1404	Sand		
-35	Sample taken 35-35.4'	1160	Sand		
		222	Sand		
-40		323	Gray finer sand, clayey sand at 42'		Boring Complete to 42'
		7.6			

Aquaterra Technologies, Inc.

URFACE BORING LOG

BOREHOLE NO. **CPT-10**

Page 1 of 1

PROJECT:	P	DRILLING CO.:	Parrat Wolff
SITE LOCATION:	Refinery	DRILLING METHOD	Hollow Stem Auger
JOB NO.:		SAMPLING METHOD	Split Spoon
LOGGED BY:		TOTAL DEPTH:	36'
DATES DRILLED:			

DEPTH (feet)	SAMPL INTERV		LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					Previously Cleared to 4'
-5					
-10					
-15					
-20					
-25		123			Auger to 26'
	Sample taken 27.6-28'	4.2	Sand		
-30		17.0	Sand		
	Sample taken 30.8-31.2'	472	Sand, clay last 4"		
		5.8	Brown coarse sand, gray clay in last 2"		Boring Complete to 36'
-35		2.1			

Aquaterra Technologies, Inc.

URFACE BORING LOG

BOREHOLE NO. **CPT-12**

Page 1 of 1

PROJECT: **P**
SITE LOCATION **Refinery**
JOB NO.:
LOGGED BY:
DATES DRILLE

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **37.7'**

DEPTH (feet)	SAMP INTER		LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					Previously Cleared to 4'
-5					
-10					
-15					
-20					Auger to 25'
-25	Sample take 25.5-26.5'	111 1460 303	Wet @ 27'		
-30		843			
-35	Sample taken 33.0-33.4'	457 325	18" recovery		
	Sample taken 37.3-37.7'	371 1373	Sheen, 10" recovery		Boring Complete to 37.7"

SUBSURFACE BORING LOG

BOREHOLE NO. **CPT-19**

Aquaterra Technologies, inc.

PROJECT: **Sunoco - DSCP**
SITE LOCATION: **Philadelphia Refinery**
JOB NO.:
LOGGED BY: [redacted]
DATES DRILLED: **20 Nov 2008**

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **35'**

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					Previously Cleared to 10'
-5					
-10					
-15					
-20	Sample taken 20.3-20.7'	159	Fill, clay w/ large brick frag		Auger to 20'
		1261	Coarse sand w/ little clay		
		46.6	Wet, clayey sand and gravel		
-25	Sample taken 23.8-24.2'	1407 687	Black stained sand and large gravel		
		480	Sand and loose gravel		
-30	Sample taken 28.6-29'	757			
	Sample taken 33-34.2'	568 129	Loose coarse sand		Boring Complete to 35'
-35					

SUBSURFACE BORING LOG

Aquaterra Technologies, inc.

BOREHOLE NO. **CPT-27**

PROJECT: **Sunoco - DSCP**
SITE LOCATION: **Philadelphia Refinery**
JOB NO.:
LOGGED BY: [redacted]
DATES DRILLED: **12 Nov 2008**

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **36'**

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					Previously Cleared to 4'
-5					
-10					
-15					
-20		221	Moist sandy clay (20" recovery)		Auger to 20'
	Sample taken 20.8-21.2'	1425			
		1238	Moist brown sand and gravel		
-25					
-30					
		1136	Brown, coarse sand w/ fine gravel, saturated		
	Sample taken 32-32.4'	1701			
		726	Brown sand w/ fine gravel, saturated		
	Sample taken 34.8-35.2'	1471			
-35		1257			
		403			Boring Complete to 36'

SUBSURFACE BORING LOG

BOREHOLE NO. **CPT-30**

PROJECT: **Sunoco - DSCP**
SITE LOCATION: **Philadelphia Refinery**
JOB NO.:
LOGGED BY: [redacted]
DATES DRILLED: **19 Nov 2008**

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **32'**

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					Previously Cleared to 10'
-5					
-10					
-15					
	Sample taken 17-17.4'	576	Large gravels (lt. gray quartzite or sandstone) and brown sandy gravel (20" recovery)		Auger to 17'
-20		860			
-25		360	Wet clayey sand and gravel		
		76.1	20" recovery		
	Sample taken 27.6-28'	1365	Wet sand and gravel		
-30	Sample taken 30-32'	12.2	Wet coarse sand		
		6.7	Fine sandy clay		Boring Complete to 32'

SUBSURFACE BORING LOG

BOREHOLE NO. **CPT-36**

Aquaterra Technologies, inc.

PROJECT: **Sunoco - DSCP**
SITE LOCATION: **Philadelphia Refinery**
JOB NO.:
LOGGED BY: [redacted]
DATES DRILLED: **21 Nov 2008**

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **36'**

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					Previously Cleared to 10'
-5					
-10					
-15					
-20					Auger to 21'
		46.2	Moist, gray clay		
	Sample taken 21.7-22.3'	1384	Moist, gravel and sand		
		1706	Moist, light brown fine sandy clay		
	Sample taken 23.8-24.2'	947	Clay and gravel		
-25		1381	Sand and gravel		
-30		146	Loose, soft mud		
	Sample taken 30.8-31.2'	586	Clayey sand and gravel		
		1663			
	Sample taken 34.8-35.2'	1224	Loose, coarse sand w/ fine gravel		
-35		1352			
		50.9	Saturated, gray coarse sand		Boring Complete to 36'

SUBSURFACE BORING LOG

BOREHOLE NO. **CPT-38**

Aquaterra Technologies, inc.

PROJECT: **Sunoco - DSCP**
SITE LOCATION: **Philadelphia Refinery**
JOB NO.:
LOGGED BY: [redacted]
DATES DRILLED: **12 Nov 2008**

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **39'**

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					Previously Cleared to 4'
-5					
-10					
-15			Spoon refusal, pink quartzite rock fragments in spoon, auger past		Auger to 18'
-20	Sample taken 19.0-19.4'	80.4	Very stiff medium brown sandy silt w/ gravels		
		21.6	Moist loose gravel w/sand		
-25	Sample taken 27.1-27.5"	445	Medium brown sand with gravel		
-30		1387			
-35	Sample taken 34-34.4'	996	Very loose saturated brown sand w/ some gravel 19" recovery		
	Sample taken 37.7-38.4'	1338	Very loose brown sand in core. Bottom few inches are gray clay, 16" recovery		
		23.7			Boring Complete to 39'

SUBSURFACE BORING LOG

Aquaterra Technologies, inc.

BOREHOLE NO. **CPT-39**

PROJECT: **Sunoco - DSCP**
SITE LOCATION: **Philadelphia Refinery**
JOB NO.:
LOGGED BY: [redacted]
DATES DRILLED: **11 Nov 2008**

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **35'**

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					
					Previously Cleared to 4'
-5					
-10					
-15					
		605	Moist, brown silt and sand		Auger to 18'
-20	Sample taken 18.2-18.6'	754			
		870	Moist to wet brown sand		
	Sample taken 22-22.4'	852	12" recovery		
		1415			
-25					
		1227	Wet, dark brown, sandy gravel		
	Sample taken 28.8-29.2'	965	21" recovery		
-30		1510			
	Sample taken 34.2-34.6	1325	Coarse sand - little fine sand		Boring Complete to 35'
		321	9" recovery		
-35					

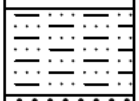
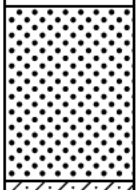
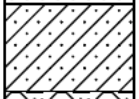
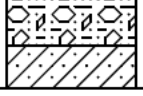
SUBSURFACE BORING LOG

BOREHOLE NO. **CPT-40**

Aquaterra Technologies, inc.

PROJECT: **Sunoco - DSCP**
SITE LOCATION: **Philadelphia Refinery**
JOB NO.:
LOGGED BY: [redacted]
DATES DRILLED: **20 Nov 2008**

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **35'**

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					Previously Cleared to 4'
-5					
-10					
-15					
-20		0.6	Light brown wet clayey sand		Auger to 21'
	Sample taken 21.55-21.95	14.4 48.9	Dark brown/black coarse sand		
-25		1.4	Loose, wet, light brown sandy clay		
	Sample taken 27.8-28.2'	508 142	Brown/black sandy gravel		
-30	Sample taken 31.6-32'	30.4 15.3	Brown, fine gravely sand Orange, fine sandy clay		Boring Complete to 33'

SUBSURFACE BORING LOG

BOREHOLE NO. **CPT-43**

Page 1 of 1

Aquaterra Technologies, inc.

PROJECT: **Sunoco - DSCP**
SITE LOCATION: **Philadelphia Refinery**
JOB NO.:
LOGGED BY: [redacted]
DATES DRILLED: **24 Nov 2008**

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **48'**

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					Previously Cleared to 4'
-5					
-10					
		3.2	Fill, brown sand and gravel w/ clay		Auger to 12'
		0.5	Gray/brown moist clayey silt		
-15		3.7	Gray/brown moist clayey silt		
		3.2	Brown/gray moist clayey silt		
-20	Sample taken 19.6-20'	1546	Very fine, moist sandy clay		
		1140	Large gravels and coarse sand		
		1281	Medium-fine sand		
-25	Sample taken 24.8-25.2'	1444	Wet, brown coarse sand		
		352	Medium brown, coarse sand		
-30		1245	Same as above		
		1351	Same as above		
		375	Loose, wet sand		
-35		833	Brown, medium sand		
	Sample taken 36.3-36.7'	1192	Gray, fine sand		
-40		26.1	Wet, gray fine sand		
	Sample taken 41.55-41.95	93.3	Wet, gray/brown fine-medium sand		
		22.8	Same as above		
-45		10.4	Same as above		
		23.9	Medium brown sand, tight, moist		Boring Complete to 48'

SUBSURFACE BORING LOG

BOREHOLE NO. **CPT-45**

Aquaterra Technologies, inc.

PROJECT: **Sunoco - DSCP**
SITE LOCATION: **Philadelphia Refinery**
JOB NO.:
LOGGED BY: [redacted]
DATES DRILLED: **25 Nov 2008**

DRILLING CO.: **Parrat Wolff**
DRILLING METHOD **Hollow Stem Auger**
SAMPLING METHOD **Split Spoon**
TOTAL DEPTH: **40'**

DEPTH (feet)	SAMPLE INTERVAL	PID (ppm)	LITHOLOGY DESCRIPTION	LITH-OLOGY	COMMENTS
0					Previously Cleared to 4'
-5					
-10					
-15					
		16.1	Wet, medium brown coarse sand & fine gravel		Auger to 16'
		0.8	Same		
-20		0.6	Moist clayey fine sand w/ gravels		
	Sample taken 21.4-21.8'	1658	Clayey silt, brown/black rock at bottom		
		1474	Coarse sand w/ fine gravel, medium brown		
-25	Sample taken 25.3-25.7'	1388	Wet, fine sand and gravel, brown		
		220	Large rock in bottom		
	Sample taken 28.3-29.1'	1017	Brown, wet, coarse sand w/ fine gravels		
-30		943	Loose brown sand		
	Sample taken 33.3-33.7'	1636	Gray fine sand		
-35		48.5	Fine, gray/brown sand		
		18.8	Medium brown sand, gray clay last 4"		
		67.7	Medium gray sand		Boring Complete to 40'
-40					

S2C2 inc.
5 Johnson Drive, Suite 12
Raritan, New Jersey 08869
www.s2c2inc.com
(908) 253-3200

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-EC-01**

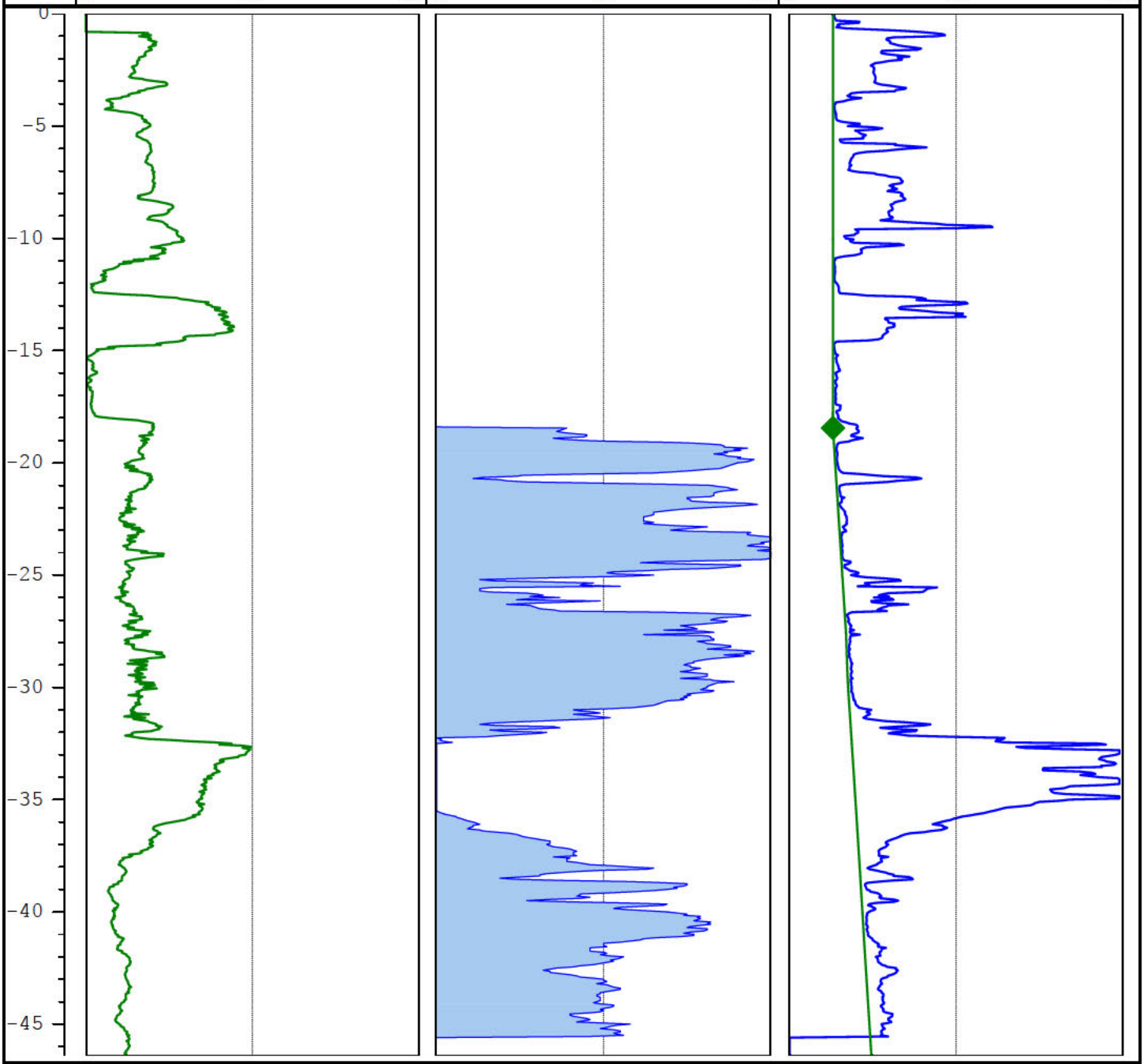
TOTAL DEPTH: **46.4'**

PROJECT INFORMATION

PROJECT:	**Former DSCP**
SITE LOCATION:	**Philadelphia, PA**
JOB NO.:	**NA**
LOGGED BY:	**FI 6000**
PROJECT MANAGER:	**Eric White**
DATES DRILLED:	**9/21/2012**

DRILLING INFORMATION

DRILLER:	**Matthew Ruf**
RIG TYPE:	**Geoprobe 6600**
SAMPLING METHOD:	**Hydraulic Profiling Tool**
OPERATOR:	**Todd Morgan**
NORTHING: **220764.9**	ELEVATION: **19**
EASTING: **2686755.2**	



NOTES: * Green diamond represents water table

0 50 100

Hydro. Press. (psi)

S2C2 inc.

[redacted]

www.s2c2inc.com

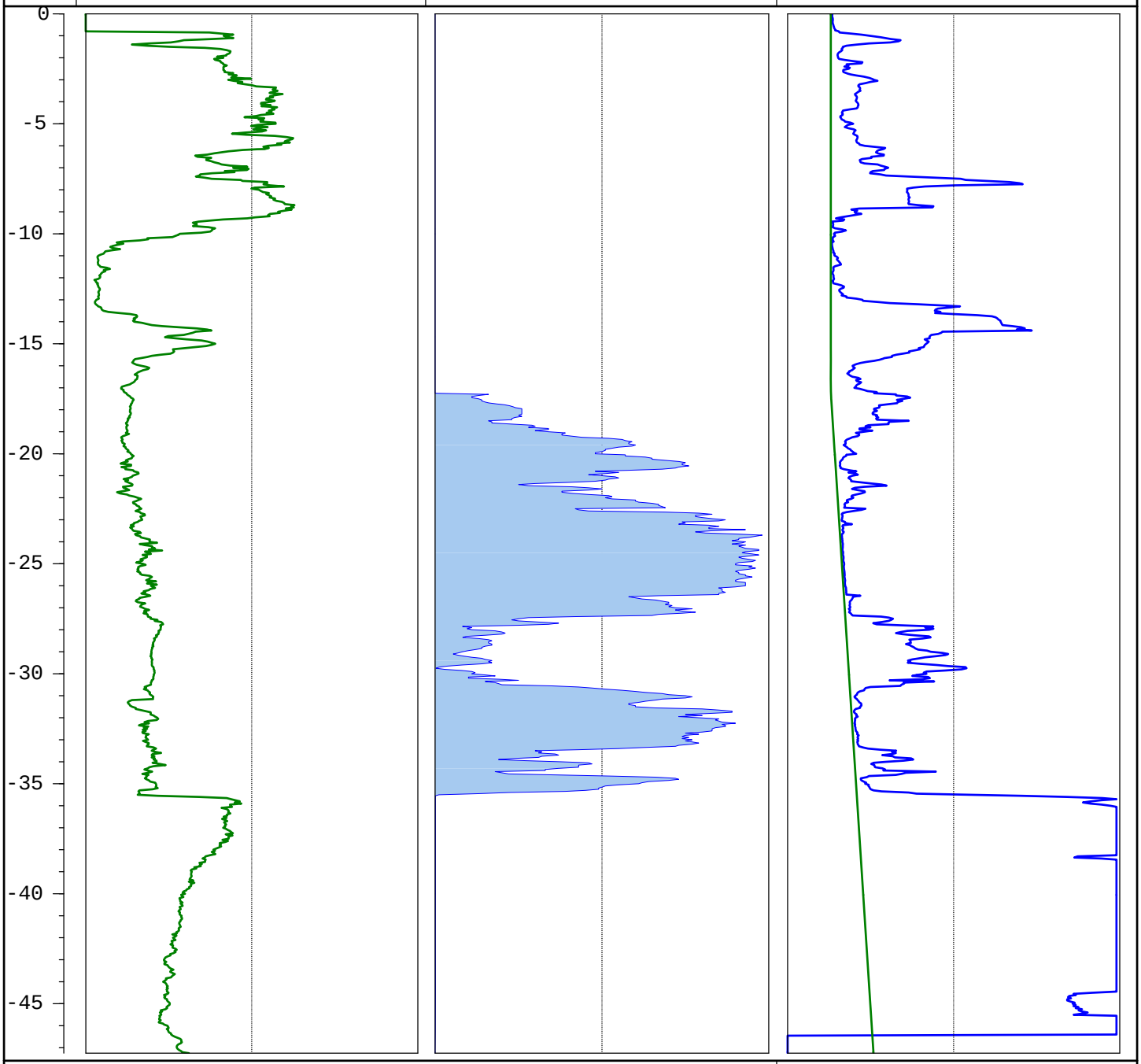
[redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-EC-02**

TOTAL DEPTH: **47.25'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Former DSCP**	DRILLER:	[redacted]
SITE LOCATION:	**Philadelphia, PA**	RIG TYPE:	**Geoprobe 6600**
JOB NO.:	**NA**	SAMPLING METHOD:	**Hydraulic Profiling Tool**
LOGGED BY:	**FI 6000**	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING: **220753.9**	ELEVATION: **17.4**
DATES DRILLED:	**9/25/2012**	EASTING: **2687187.5**	



NOTES: * Green diamond represents water table

0 50 100

Hydro. Press. (psi)

S2C2 inc.

[redacted]

www.s2c2inc.com

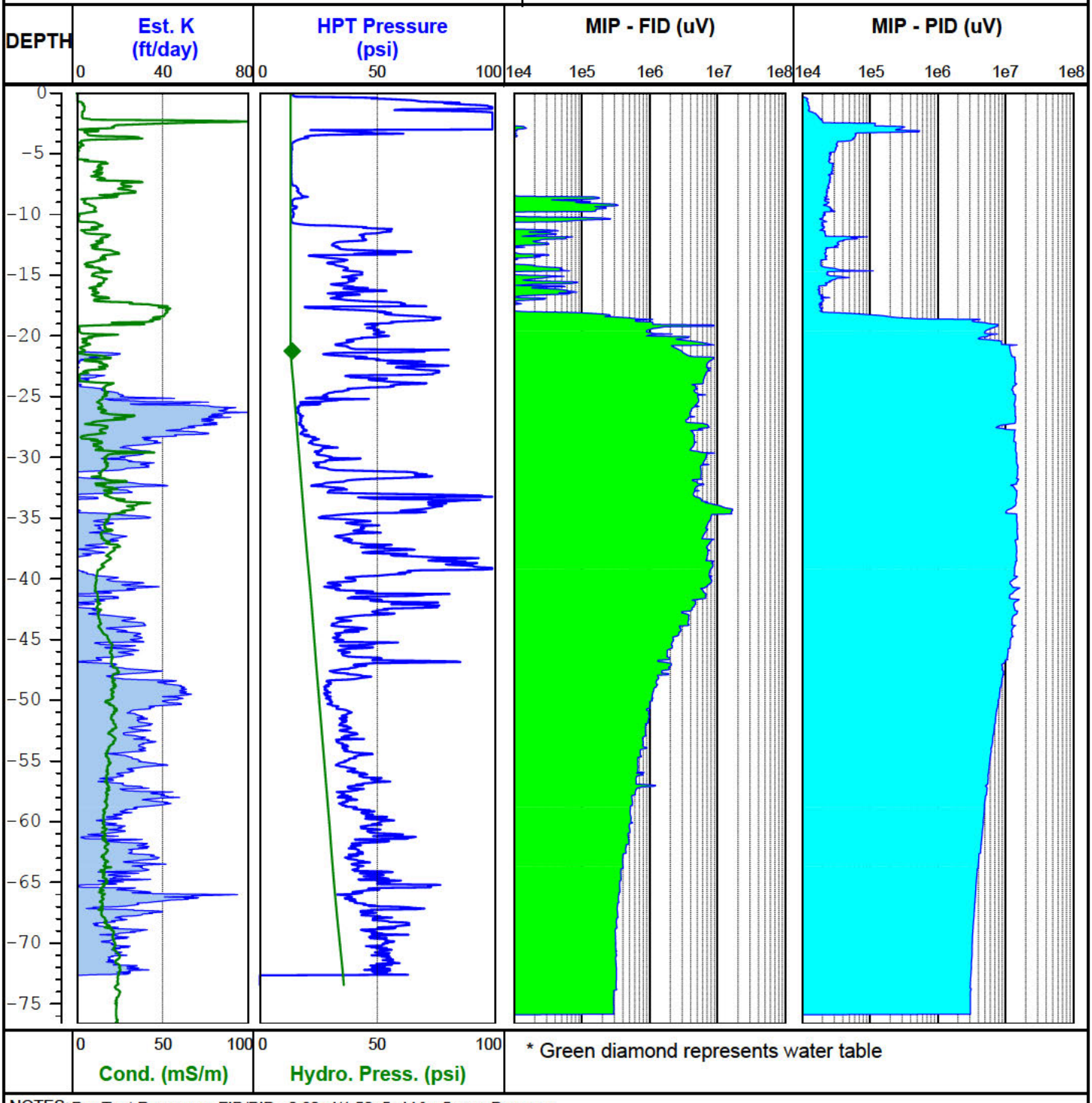
[redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-01**

TOTAL DEPTH: **76.6'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 7822DT/6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING: 222454	ELEVATION: 21.4
DATES DRILLED:	9/11/2012 and 9/24/2012	EASTING: 2687178.4	



* Green diamond represents water table

NOTES: Pre-Test Response: FID/PID: 0.80e4/1.50e5 uV for 5 ppm Benzene.

Post-Test Response: FID/PID: 2.00e4/1.24e5 uV for 5 ppm Benzene.

S2C2 inc.

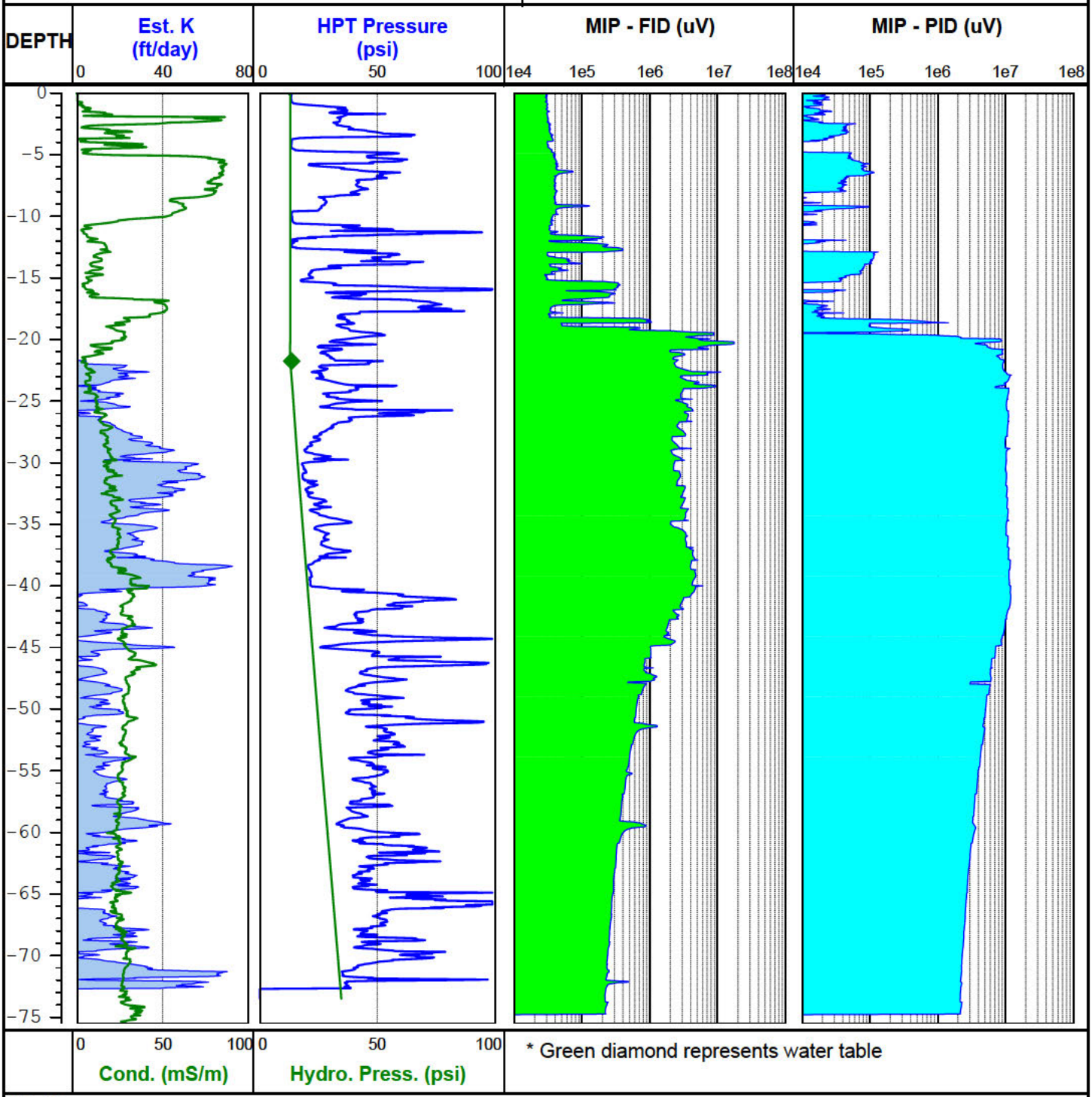
[redacted]
Raritan, New Jersey [redacted]
www.s2c2inc.com
[redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-02**

TOTAL DEPTH: **75.5'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	Jason Ruf/Matthew Ruf
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 7822DT/6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING: 222677.8	ELEVATION: 22.8
DATES DRILLED:	9/11/2012 and 9/24/2012	EASTING: 2687277	



NOTES: Pre-Test Response: FID/PID: 2.00e4/1.24e5 uV for 5 ppm Benzene.

Post-Test Response: FID/PID: NA; detector signal too high to run response test.

S2C2 inc.

[redacted]

www.s2c2inc.com

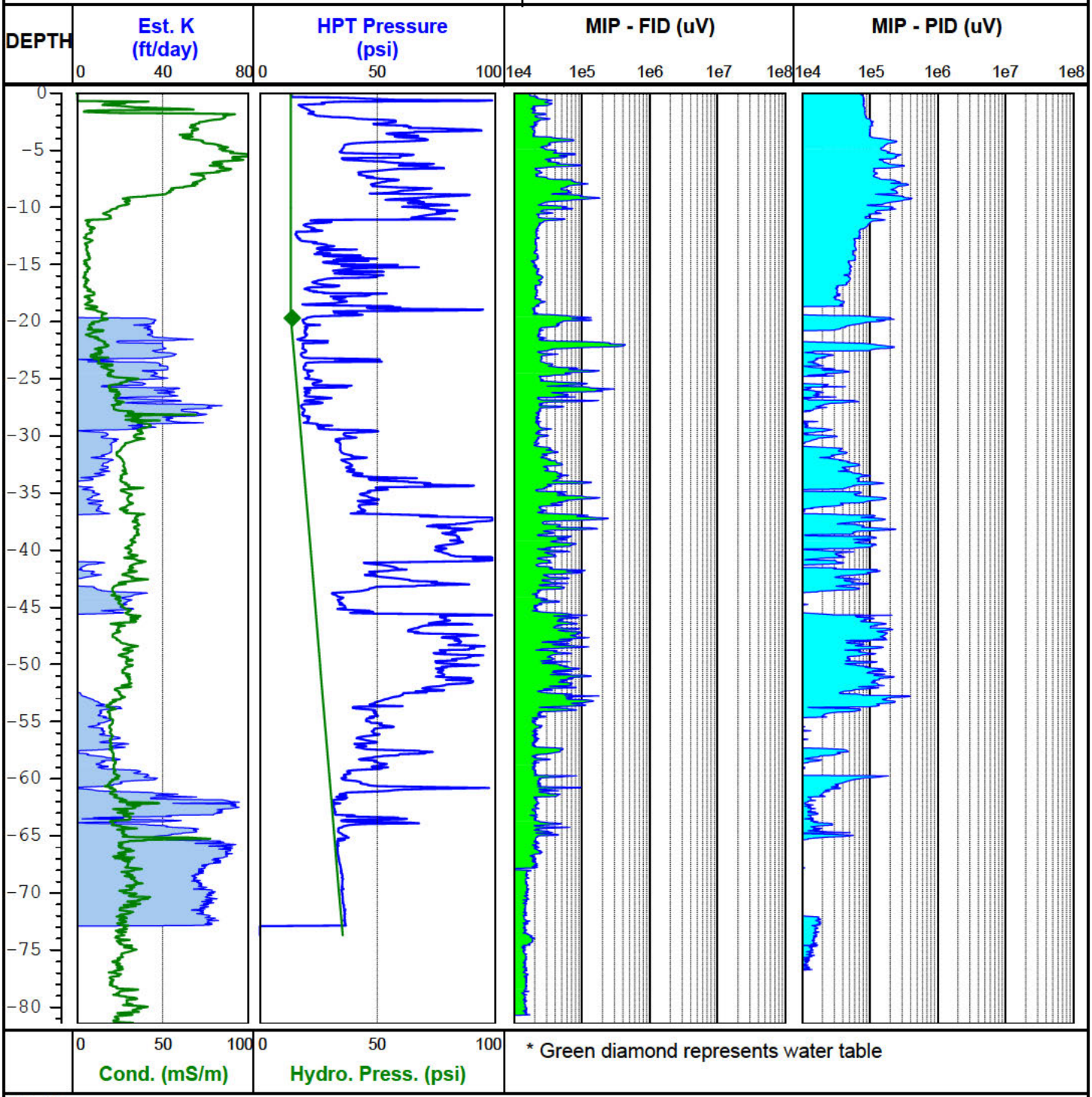
[redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-03**

TOTAL DEPTH: **81.4'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 7822DT/6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING: 222957.8	ELEVATION: 20.2
DATES DRILLED:	9/12/2012 and 9/21/2012	EASTING: 2686920.5	



* Green diamond represents water table

NOTES: Pre-Test Response: FID/PID: 1.47e4/1.28e5 uV for 5 ppm Benzene.

Post-Test Response: FID/PID: 0.80e4/0.84e5 uV for 5 ppm Benzene.

S2C2 inc.

[redacted]

www.s2c2inc.com

[redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-04**

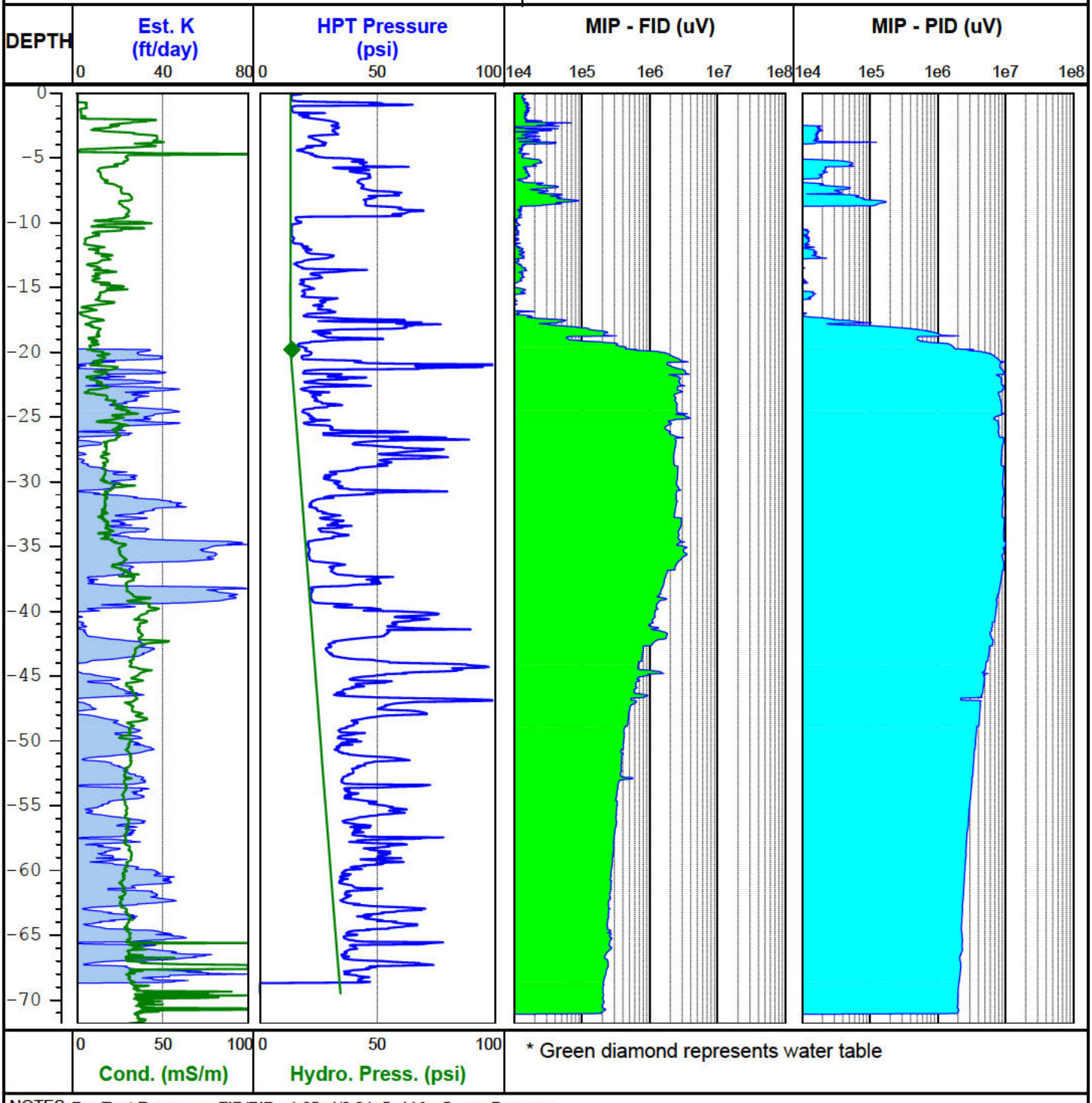
TOTAL DEPTH: **71.8'**

PROJECT INFORMATION

PROJECT:	**Former DSCP**
SITE LOCATION:	**Philadelphia, PA**
JOB NO.:	**NA**
LOGGED BY:	**FI 6000**
PROJECT MANAGER:	[redacted]
DATES DRILLED:	**9/12/2012 and 9/24/2012**

DRILLING INFORMATION

DRILLER:	[redacted]
RIG TYPE:	**Geoprobe 7822DT/6600**
SAMPLING METHOD:	**MiHPT**
OPERATOR:	[redacted]
NORTHING:	**222519.2**
ELEVATION:	**20.3**
EASTING:	**2686648.9**



* Green diamond represents water table

NOTES: Pre-Test Response: FID/PID: 1.65e4/0.91e5 uV for 5 ppm Benzene.

Post-Test Response: FID/PID: NA; detector signal too high to run response test.

S2C2 inc.

[redacted]

www.s2c2inc.com

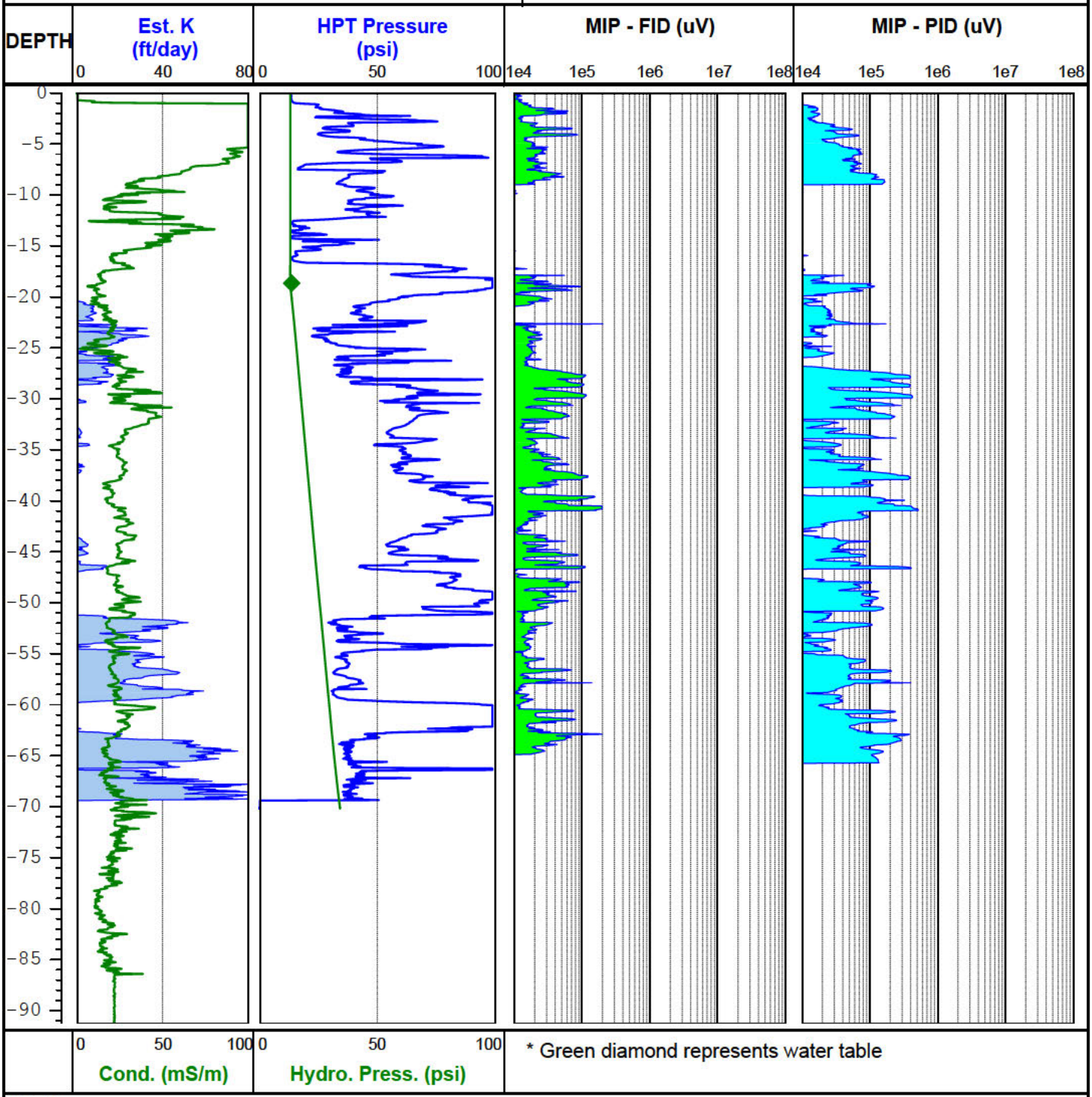
[redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-05**

TOTAL DEPTH: **91.25'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 7822DT/6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING: 223215.7	ELEVATION: 21
DATES DRILLED:	9/13/2012 and 9/25/2012	EASTING: 2686633.3	



* Green diamond represents water table

NOTES: Pre-Test Response: FID/PID: 1.34e4/1.08e5 uV for 5 ppm Benzene.

Post-Test Response: FID/PID: 1.00e4/0.80e5 uV for 5 ppm Benzene.

S2C2 inc.

[redacted]

www.s2c2inc.com

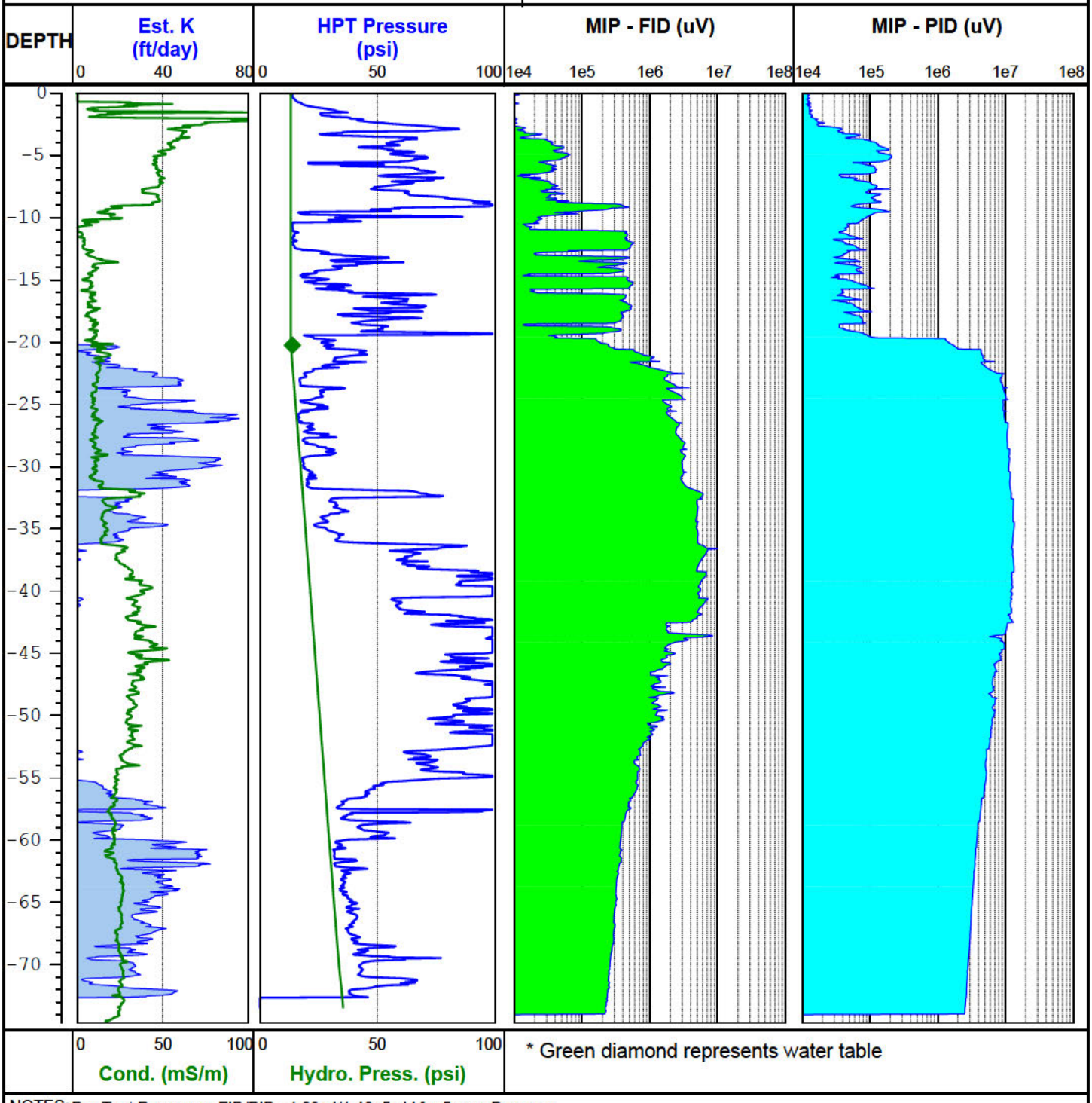
[redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-06**

TOTAL DEPTH: **74.7'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 7822DT/6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING: 222723.7	ELEVATION: 21.2
DATES DRILLED:	9/14/2012 and 9/21/2012	EASTING: 2687880.7	



* Green diamond represents water table

NOTES: Pre-Test Response: FID/PID: 1.09e4/1.48e5 uV for 5 ppm Benzene.

Post-Test Response: FID/PID: 0.28e4/1.83e5 uV for 5 ppm Benzene.

S2C2 inc.

[redacted]

www.s2c2inc.com

[redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-07**

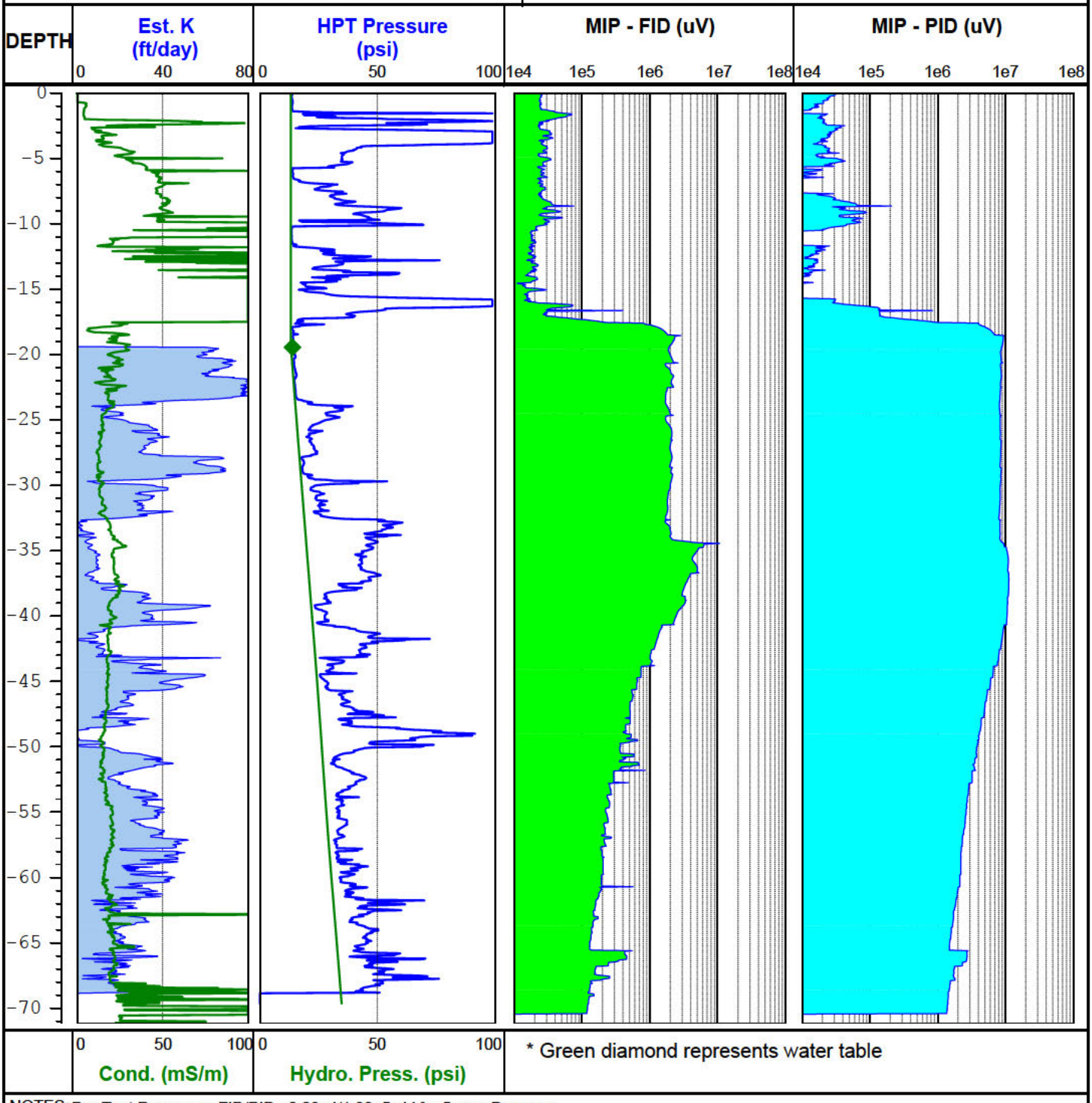
TOTAL DEPTH: **71.15'**

PROJECT INFORMATION

PROJECT:	**Former DSCP**
SITE LOCATION:	**Philadelphia, PA**
JOB NO.:	**NA**
LOGGED BY:	**FI 6000**
PROJECT MANAGER:	[redacted]
DATES DRILLED:	**9/14/2012 and 9/21/2012**

DRILLING INFORMATION

DRILLER:	[redacted]
RIG TYPE:	**Geoprobe 7822DT/6600**
SAMPLING METHOD:	**MiHPT**
OPERATOR:	[redacted]
NORTHING:	**222369.4**
EASTING:	**2688260.5**
ELEVATION:	**19.3**



* Green diamond represents water table

NOTES: Pre-Test Response: FID/PID: 0.28e4/1.83e5 uV for 5 ppm Benzene.

Post-Test Response: FID/PID: NA; detector signal too high to run response test.

S2C2 inc.

[redacted]

www.s2c2inc.com

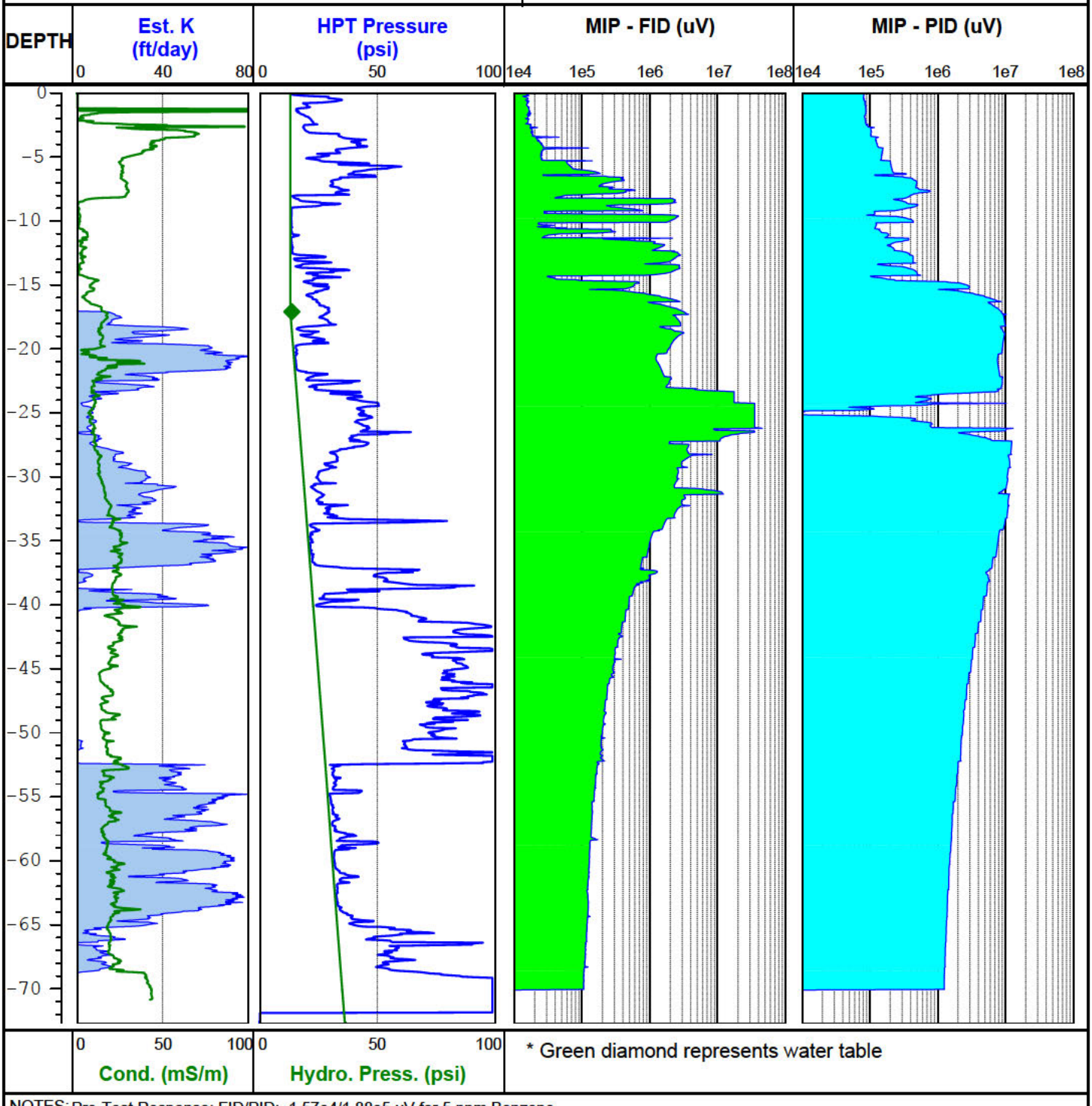
[redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-08**

TOTAL DEPTH: **72.7'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING: 221498.6	ELEVATION: 17.3
DATES DRILLED:	9/17/2012 and 9/25/2012	EASTING: 2687212.2	



* Green diamond represents water table

NOTES: Pre-Test Response: FID/PID: 1.57e4/1.88e5 uV for 5 ppm Benzene.

Post-Test Response: FID/PID: 1.19e4/0.63e5 uV for 5 ppm Benzene.

S2C2 inc.

[redacted]

www.s2c2inc.com

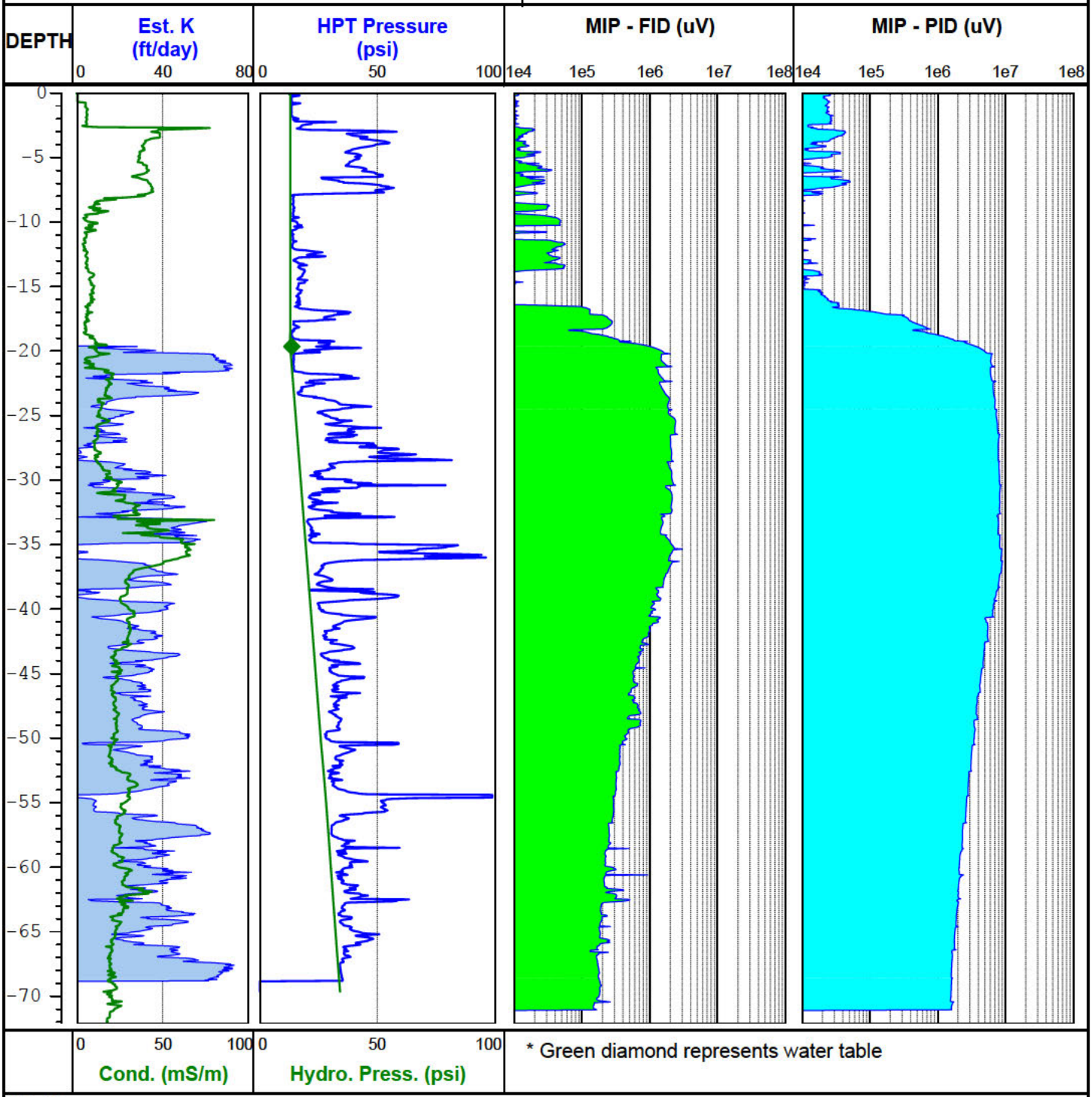
[redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-09**

TOTAL DEPTH: **72.1'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING: 222040.7	ELEVATION: 19.7
DATES DRILLED:	9/17/2012 and 9/25/2012	EASTING: 2687825.7	



* Green diamond represents water table

NOTES: Pre-Test: FID/PID: 1.19e4/0.63e5 uV for 5 ppm Benzene.

Post-Test Response: FID/PID: NA; detector signal too high to run response test.

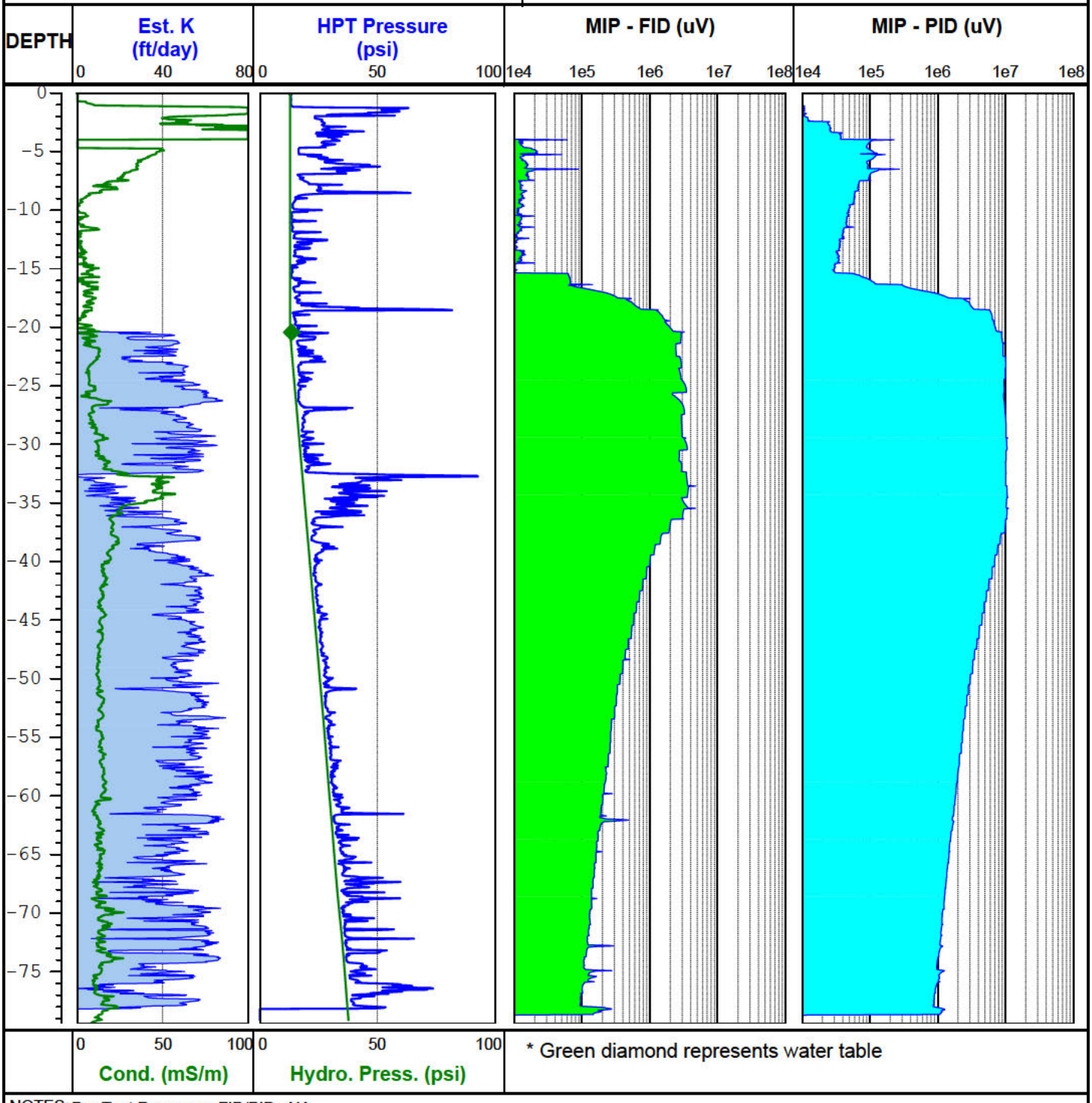
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-10**

TOTAL DEPTH: **79.4'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING: 222123.8	ELEVATION: 20.9
DATES DRILLED:	9/19/2012	EASTING: 2687427.8	



* Green diamond represents water table

NOTES: Pre-Test Response: FID/PID: NA.

Post-Test Response: FID/PID: NA; detector signal too high to run response test.

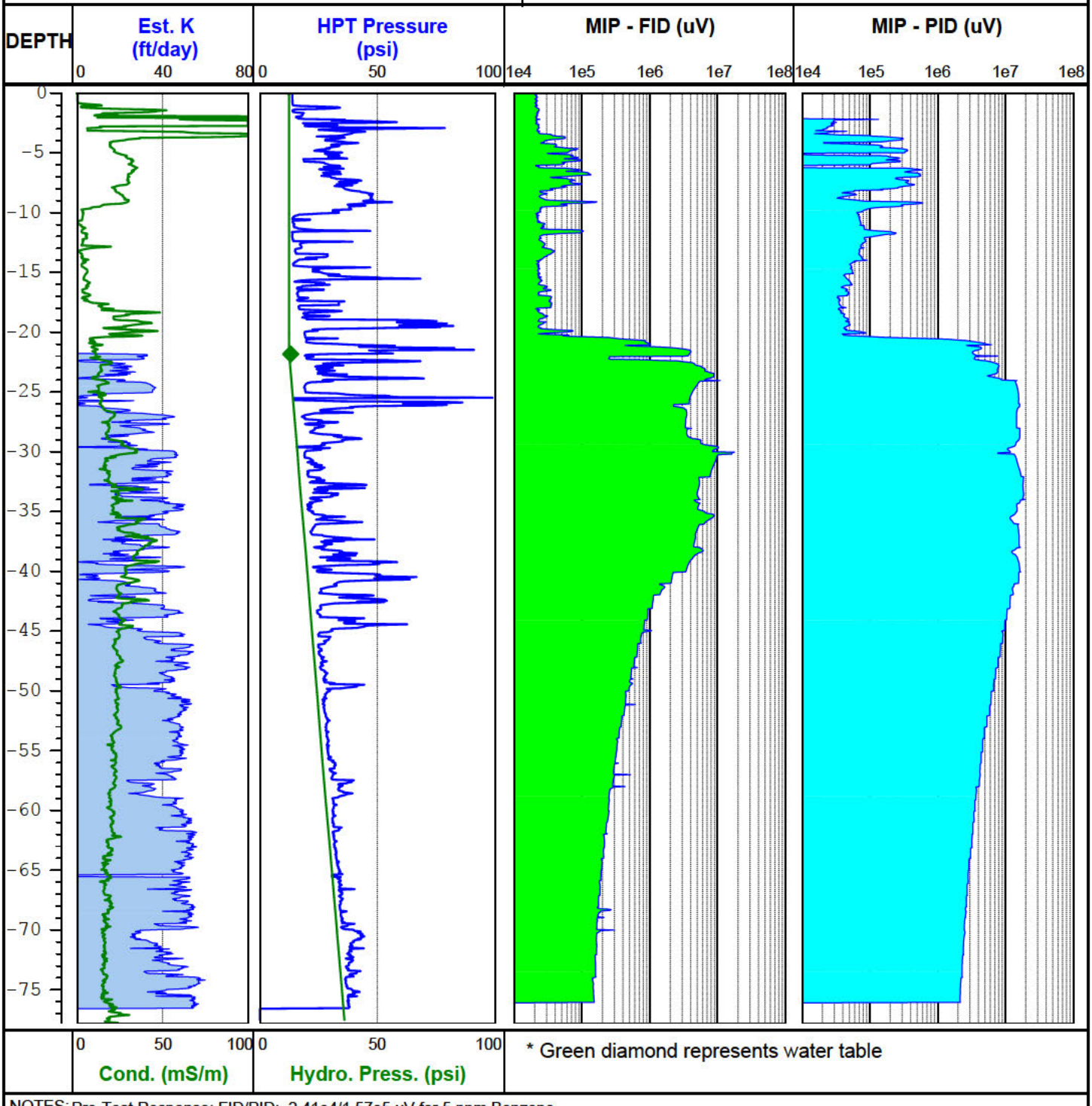
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-11**

TOTAL DEPTH: **77.8'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING: 222124.5	ELEVATION: 22
DATES DRILLED:	9/28/2012	EASTING: 2687014.6	



* Green diamond represents water table

NOTES: Pre-Test Response: FID/PID: 2.41e4/1.57e5 uV for 5 ppm Benzene.

Post-Test Response: FID/PID: 1.69e4/1.51e5 uV for 5 ppm Benzene.

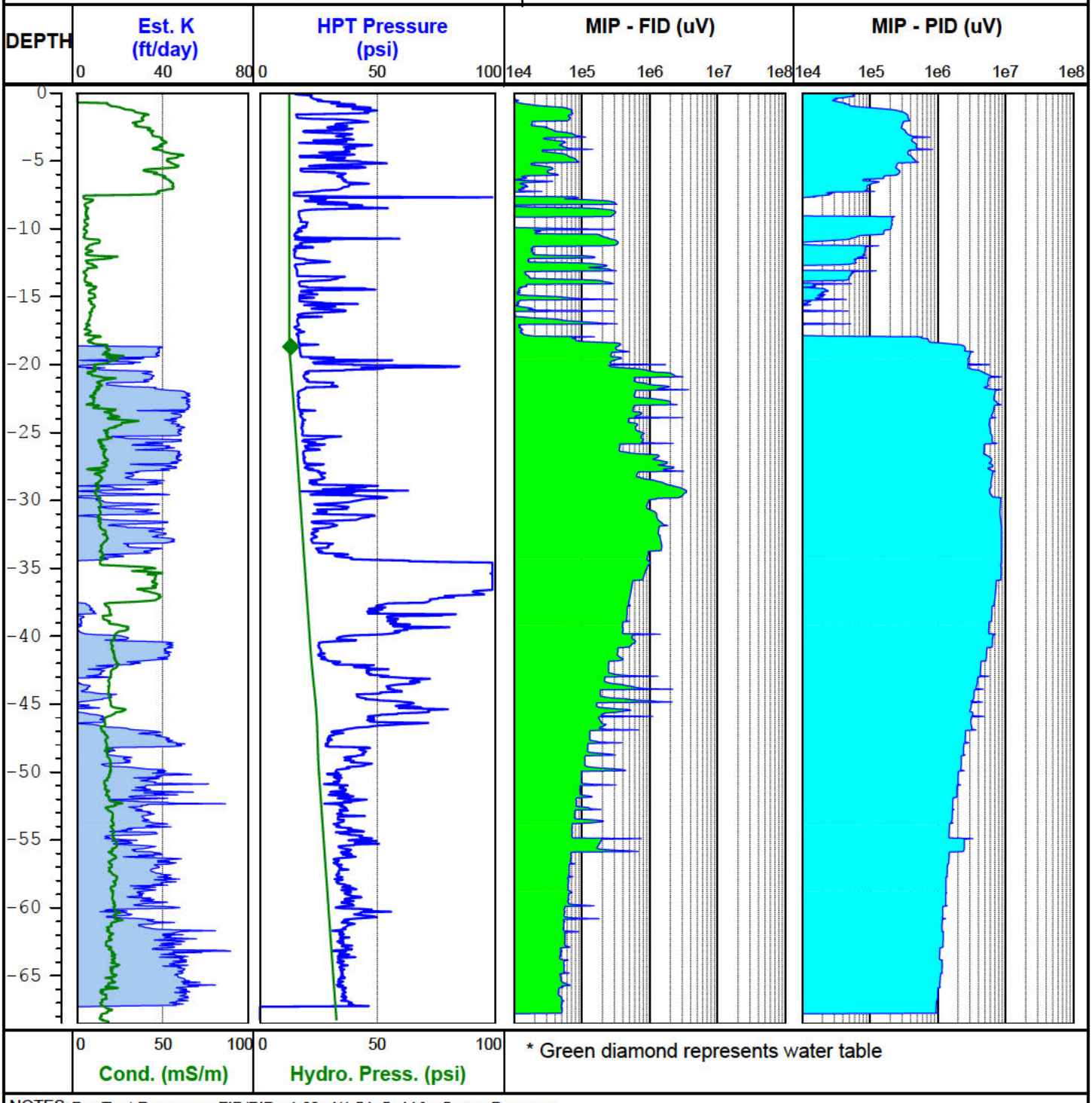
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-12**

TOTAL DEPTH: **68.5'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING: 221616.2	ELEVATION: 18.8
DATES DRILLED:	9/28/2012	EASTING: 9/28/2012	



NOTES: Pre-Test Response: FID/PID: 1.69e4/1.51e5 uV for 5 ppm Benzene.

Post-Test Response: FID/PID: 4.70e4/1.20e5 uV for 5 ppm Benzene.

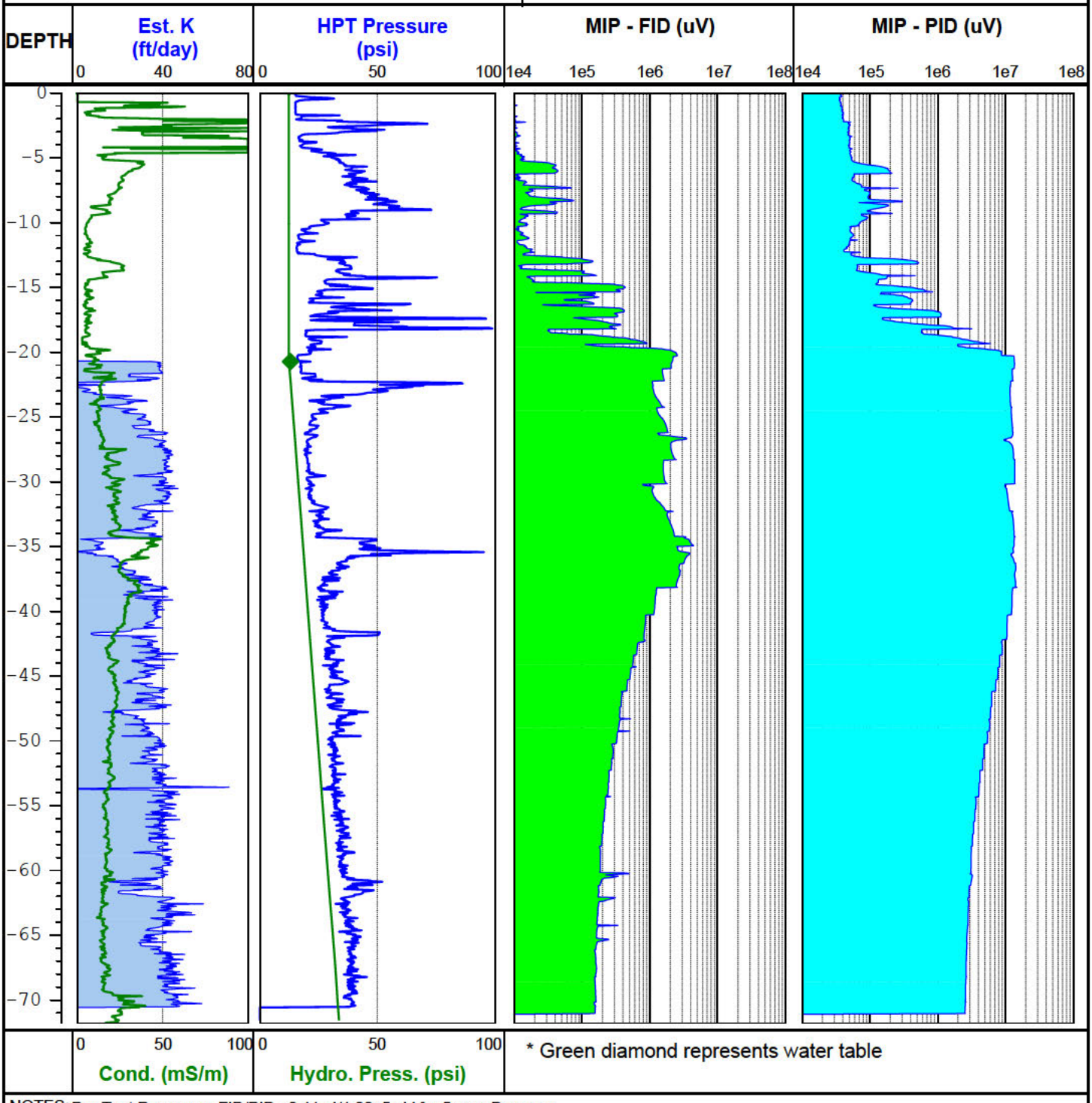
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-13**

TOTAL DEPTH: **71.8'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING: 222044.9	ELEVATION: 20.4
DATES DRILLED:	10/1/2012	EASTING: 2687483.5	



* Green diamond represents water table

NOTES: Pre-Test Response: FID/PID: 2.11e4/1.22e5 uV for 5 ppm Benzene.

Post-Test Response: FID/PID: 3.35e4/4.12e5 uV for 5 ppm Benzene.

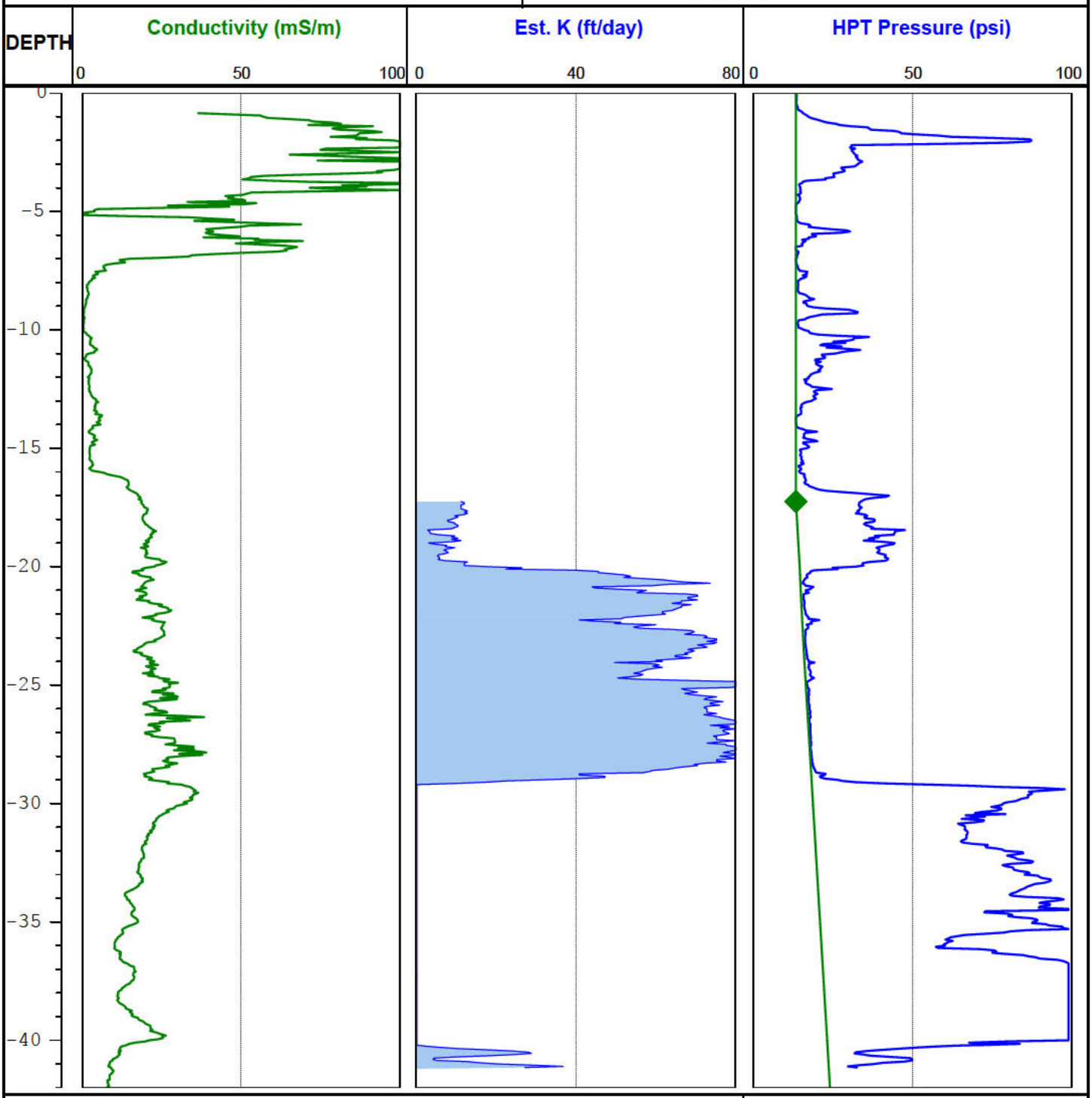
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-EC-03**

TOTAL DEPTH: **42'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	Hydraulic Profiling Tool
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	220779.3605 ELEVATION: 19
DATES DRILLED:	8/29/2013	EASTING:	2686950.203



NOTES: * Green diamond represents water table

0 50 100

Hydro. Press. (psi)

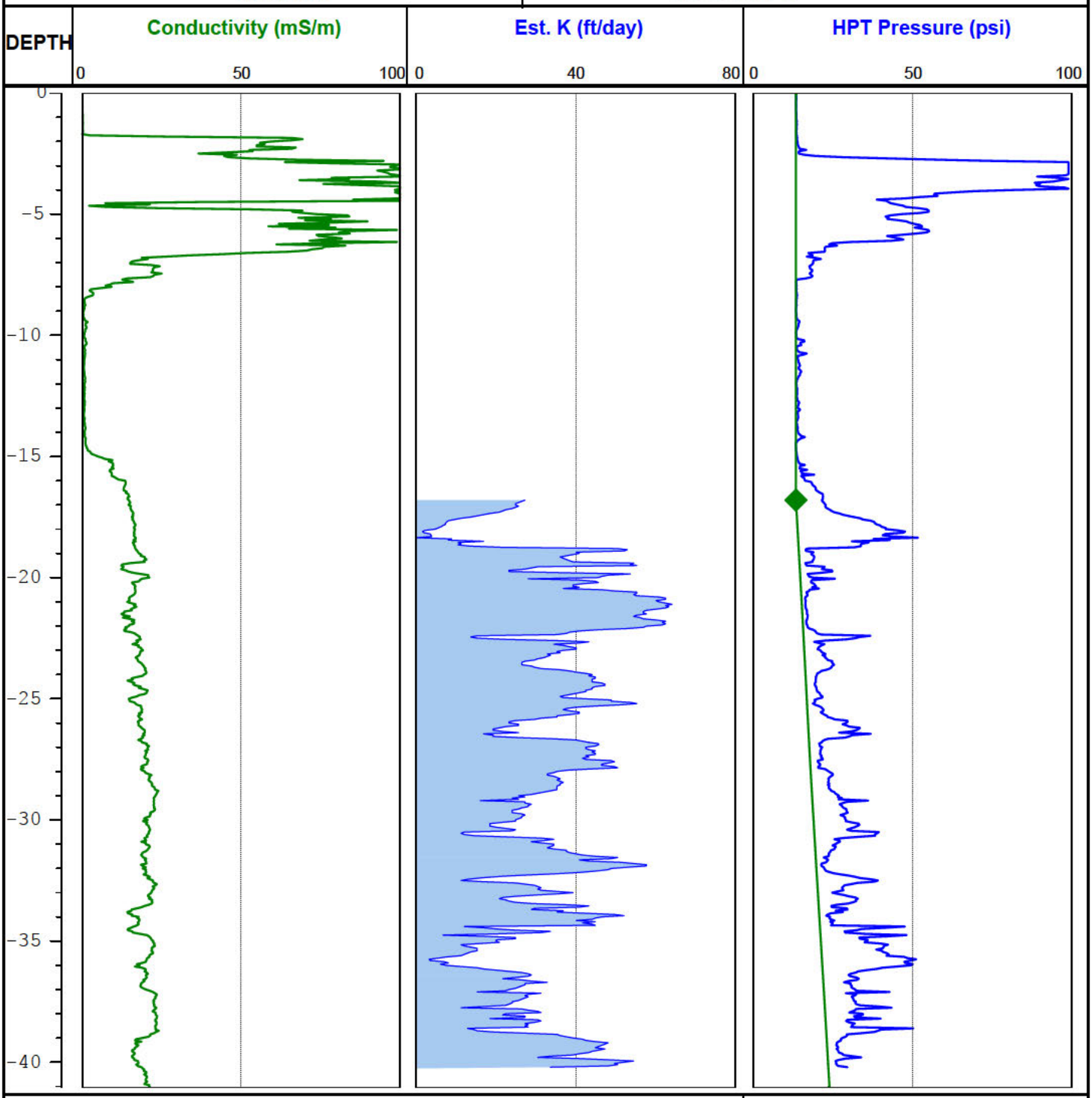
$S_2 C_2$ inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-EC-04**

TOTAL DEPTH: **41.05'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Former DSCP**	DRILLER:	[redacted]
SITE LOCATION:	**Philadelphia, PA**	RIG TYPE:	**Geoprobe 6600**
JOB NO.:	**NA**	SAMPLING METHOD:	**Hydraulic Profiling Tool**
LOGGED BY:	**FI 6000**	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	**220491.8221** ELEVATION: **19**
DATES DRILLED:	**8/29/2013**	EASTING:	**2686812.046**



NOTES: * Green diamond represents water table

0 50 100

Hydro. Press. (psi)

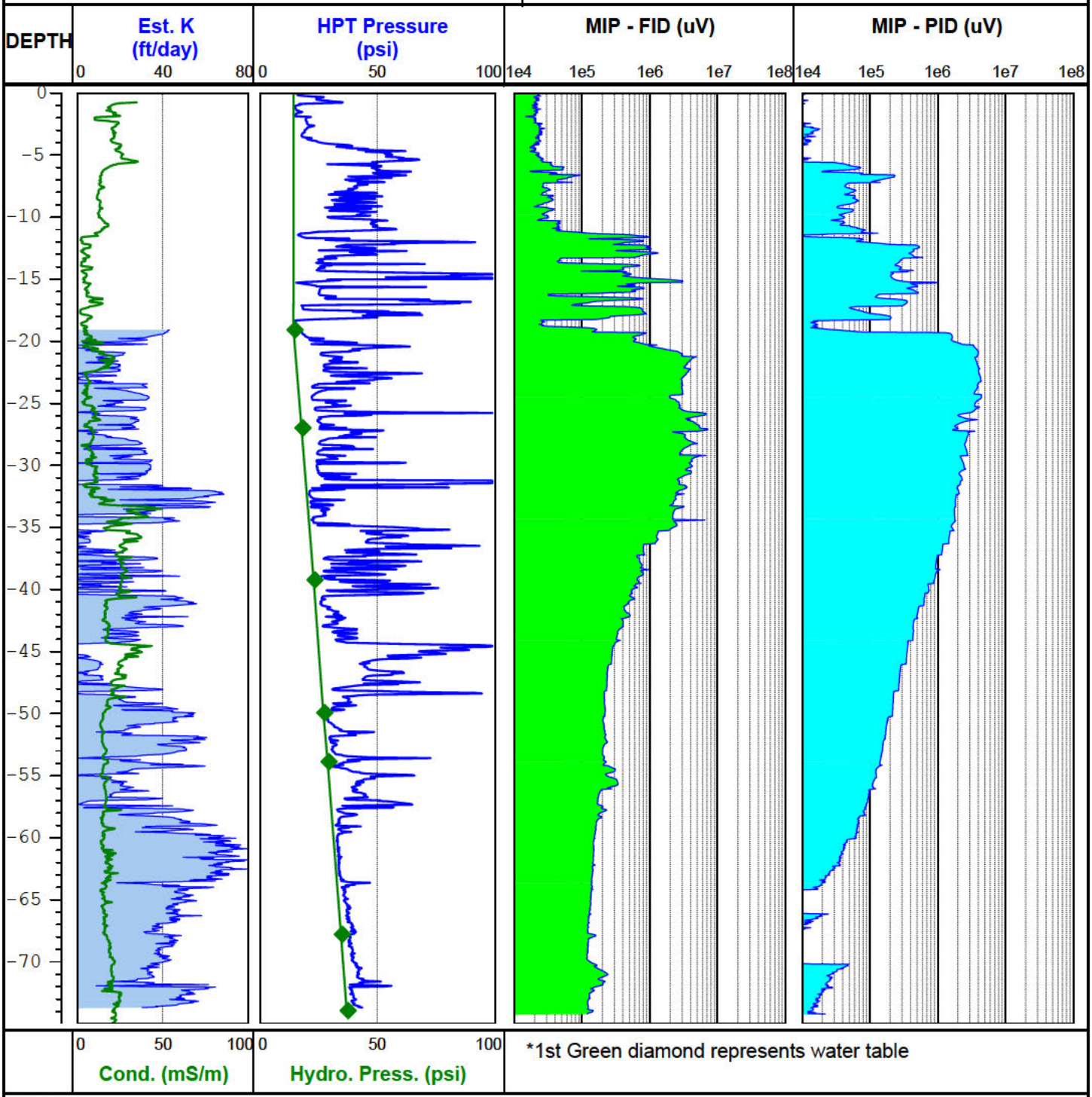
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-14**

TOTAL DEPTH: **74.95'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	222157.0129 ELEVATION: 20
DATES DRILLED:	8/5/2013	EASTING:	2686526.05



NOTES: Pre-Test Response: PID: 0.82e5 uV for 5 ppm Benzene.

Post-Test Response: PID: 0.12e5 uV for 5 ppm Benzene.

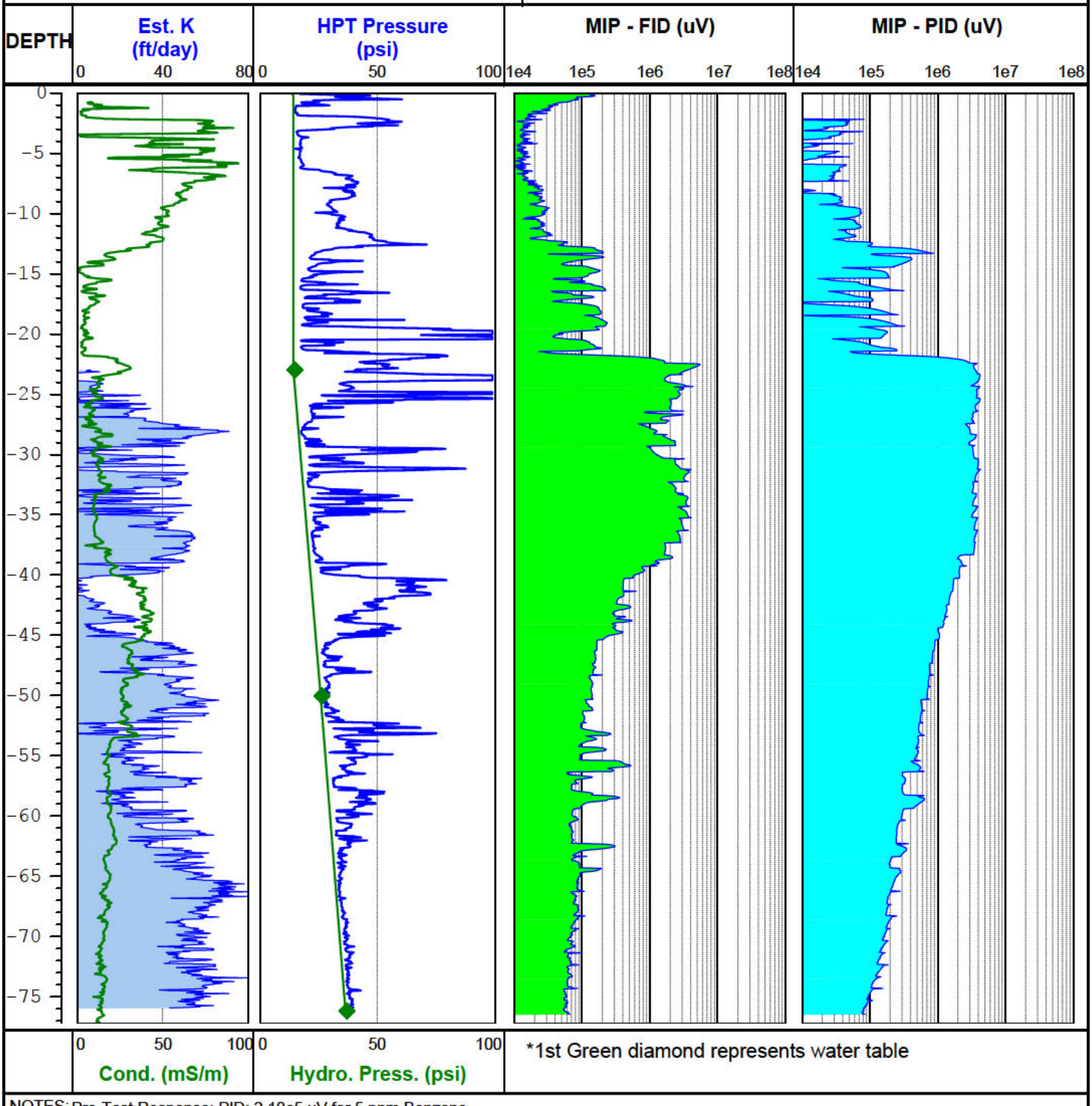
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-15**

TOTAL DEPTH: **77.2'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	222042.5354 ELEVATION: 20
DATES DRILLED:	8/1/2013	EASTING:	2686562.204



NOTES: Pre-Test Response: PID: 2.10e5 uV for 5 ppm Benzene.

Post-Test Response: PID: 0.57e5 uV for 5 ppm Benzene.

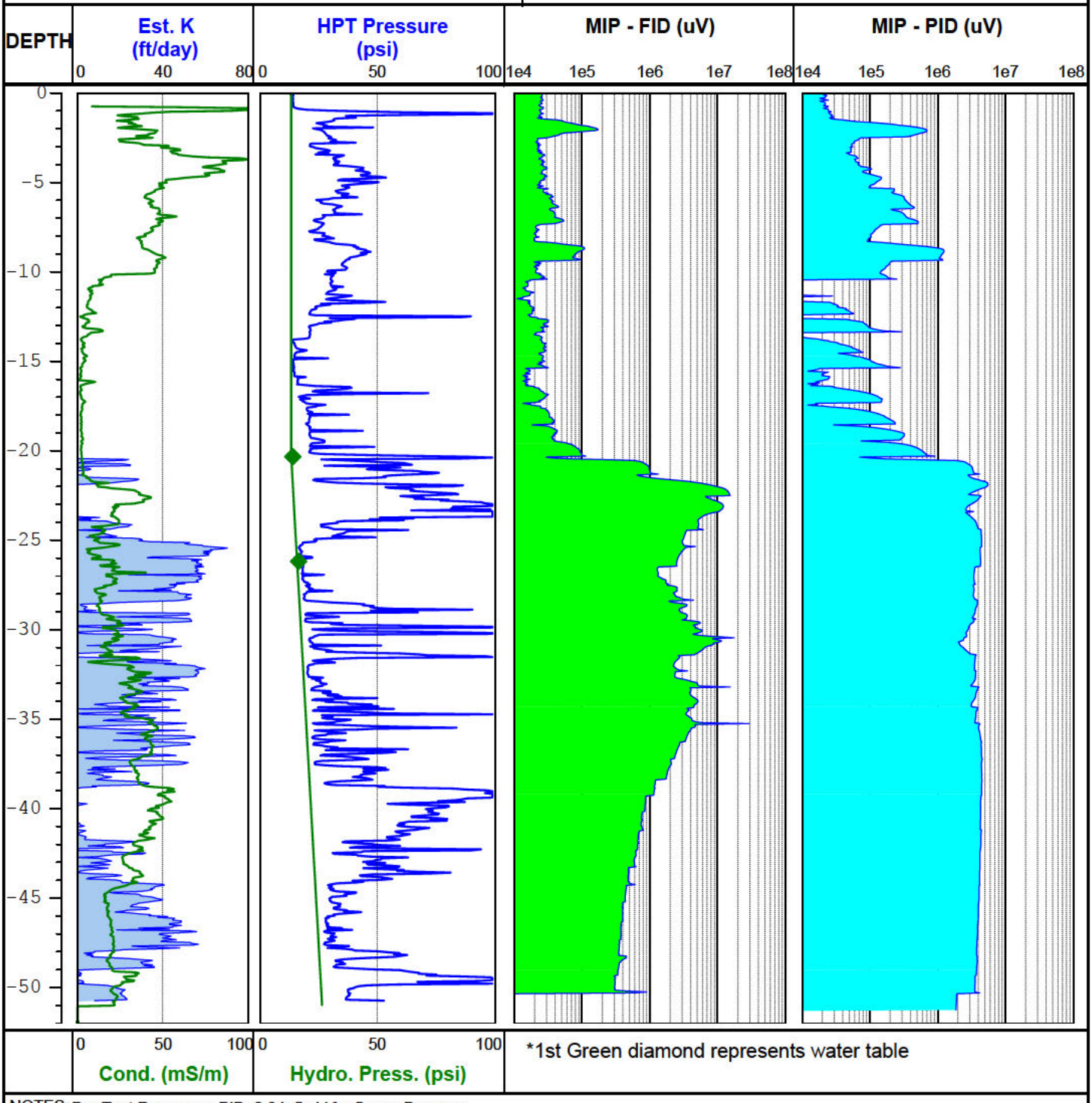
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-16**

TOTAL DEPTH: **52.0'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	222027.2889 ELEVATION: 20
DATES DRILLED:	7/30/2013	EASTING:	2686664.796



NOTES: Pre-Test Response: PID: 0.84e5 uV for 5 ppm Benzene.

Post-Test Response: PID: NA; probe had catastrophic failure at 52ft bgs.

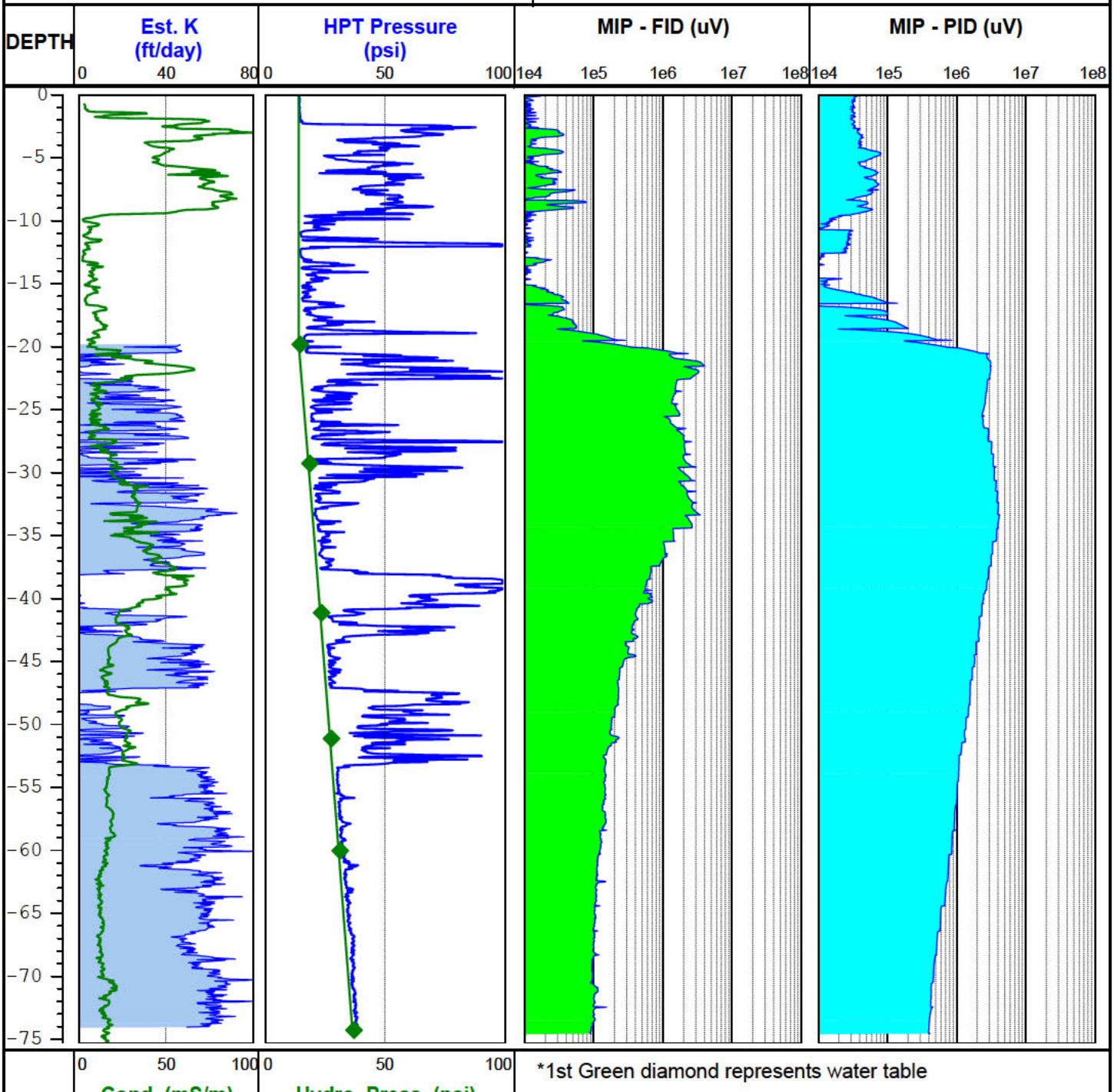
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-17**

TOTAL DEPTH: **75.3'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	222013.1758 ELEVATION: 20
DATES DRILLED:	8/1/2013	EASTING:	2686768.759



NOTES: Pre-Test Response: PID: 0.57e5 uV for 5 ppm Benzene.

Post-Test Response: PID: NA; baseline too high.

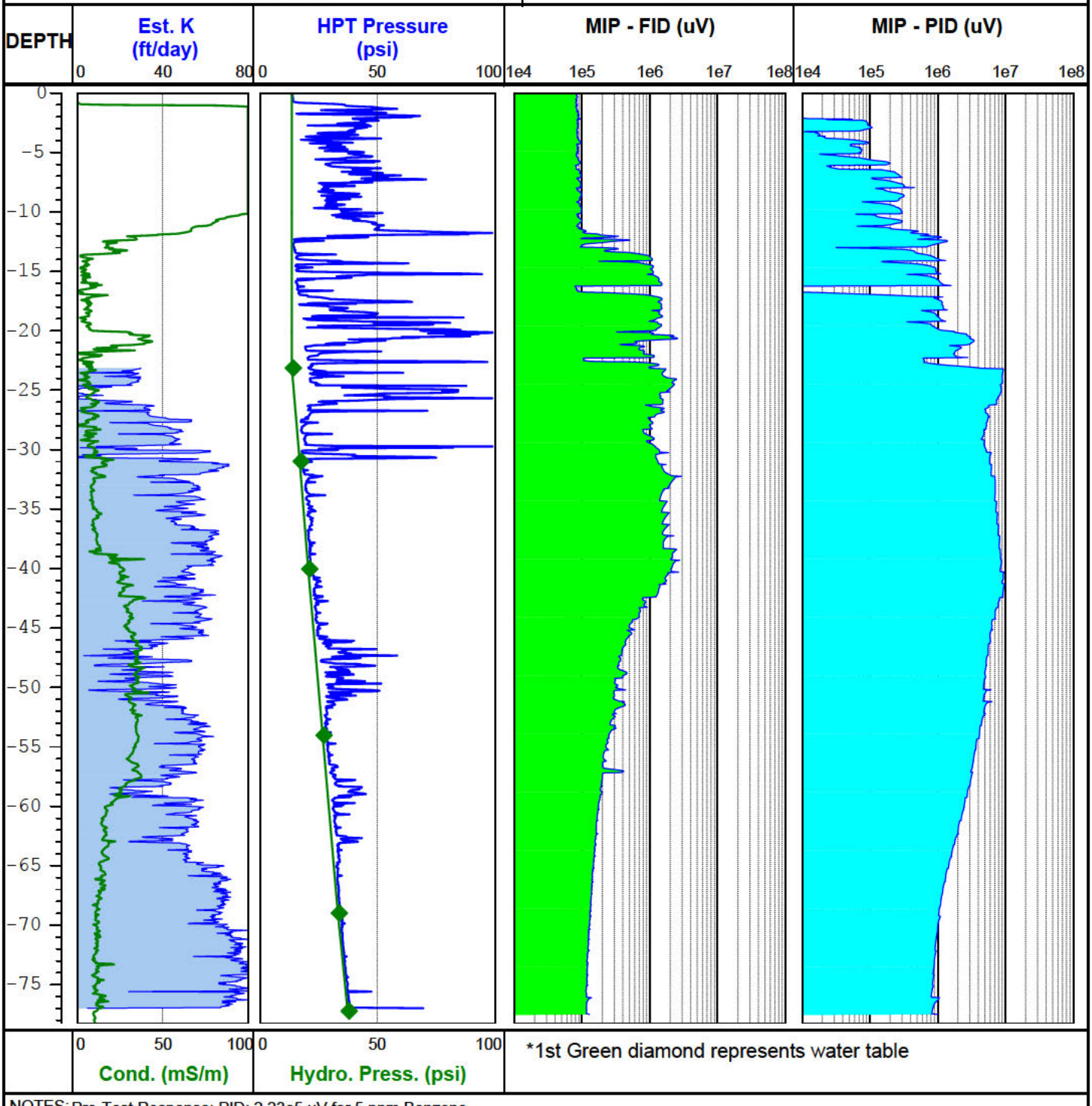
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-18**

TOTAL DEPTH: **78.25'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	221852.6286 ELEVATION: 20
DATES DRILLED:	7/30/2013	EASTING:	2686498.114



NOTES: Pre-Test Response: PID: 2.23e5 uV for 5 ppm Benzene.

Post-Test Response: PID: 0.84e5 uV for 5 ppm Benzene.

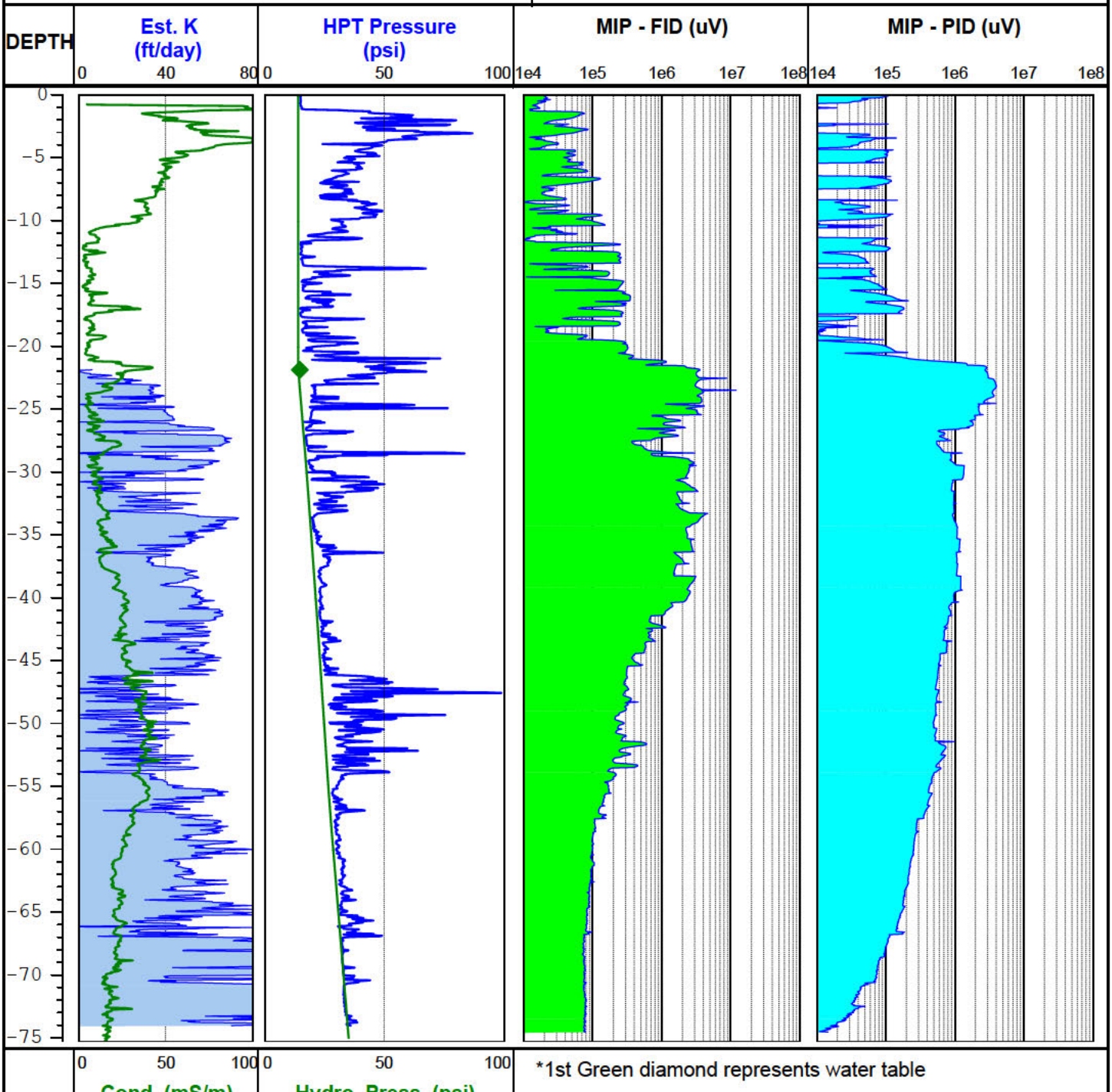
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-19**

TOTAL DEPTH: **75.3'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	221830.2221 ELEVATION: 20
DATES DRILLED:	8/2/2013	EASTING:	2686667.986



NOTES: Pre-Test Response: PID: 3.57e5 uV for 10 ppm Benzene.

Post-Test Response: PID: 0.57e5 uV for 5 ppm Benzene.

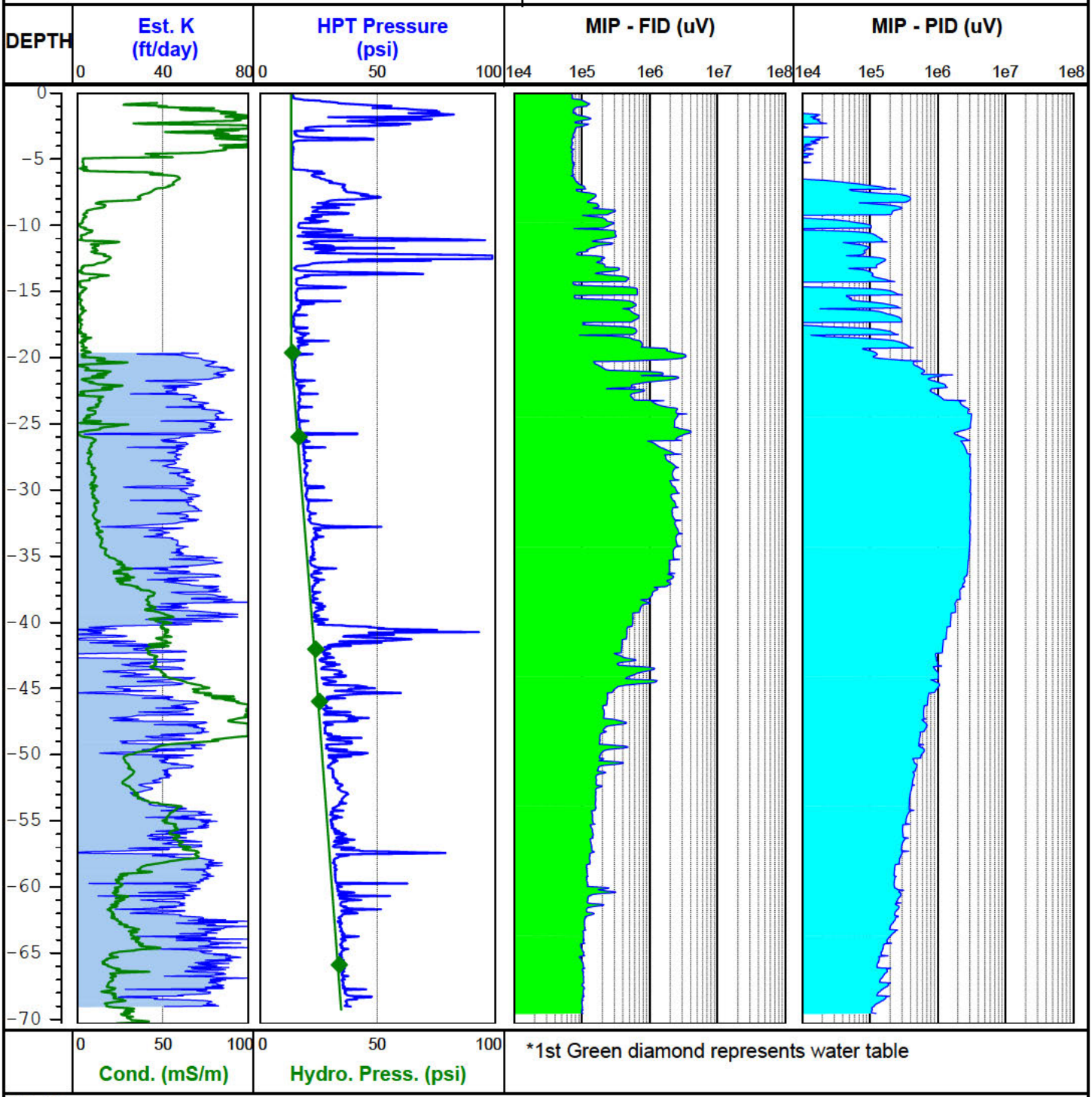
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-20**

TOTAL DEPTH: **70.3'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	221815.9659 ELEVATION: 20
DATES DRILLED:	7/29/2013	EASTING:	2686842.392



NOTES: Pre-Test Response: PID: 0.48e5 uV for 5 ppm Benzene.

Post-Test Response: PID: NA; membrane destroyed during boring abandonment.

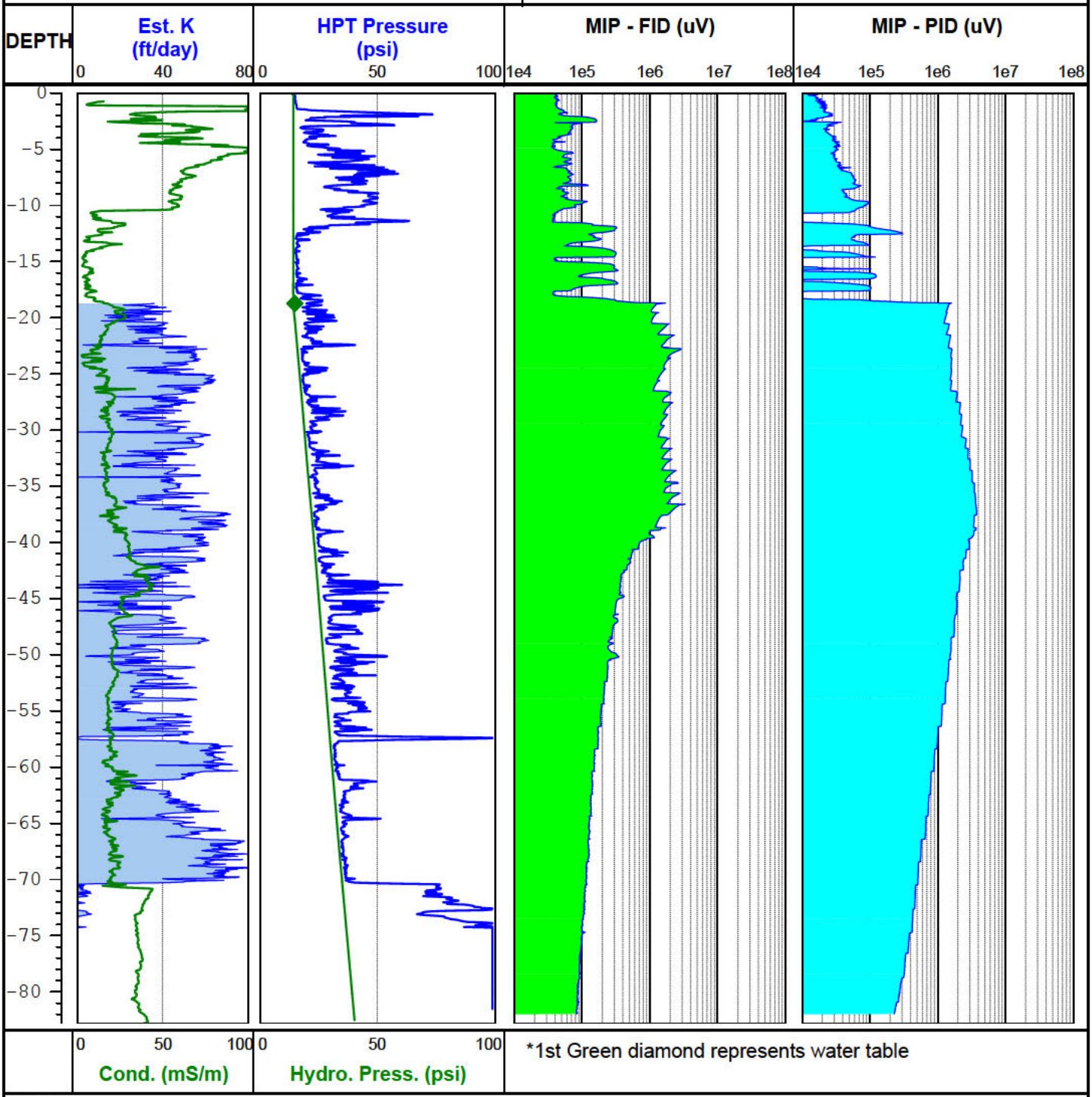
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-21**

TOTAL DEPTH: **82.8'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	221647.746 ELEVATION:
DATES DRILLED:	8/2/2013	EASTING:	2687249.424



NOTES: Pre-Test Response: PID: 0.57e5 uV for 5 ppm Benzene.

Post-Test Response: PID: NA; baseline too high for test.

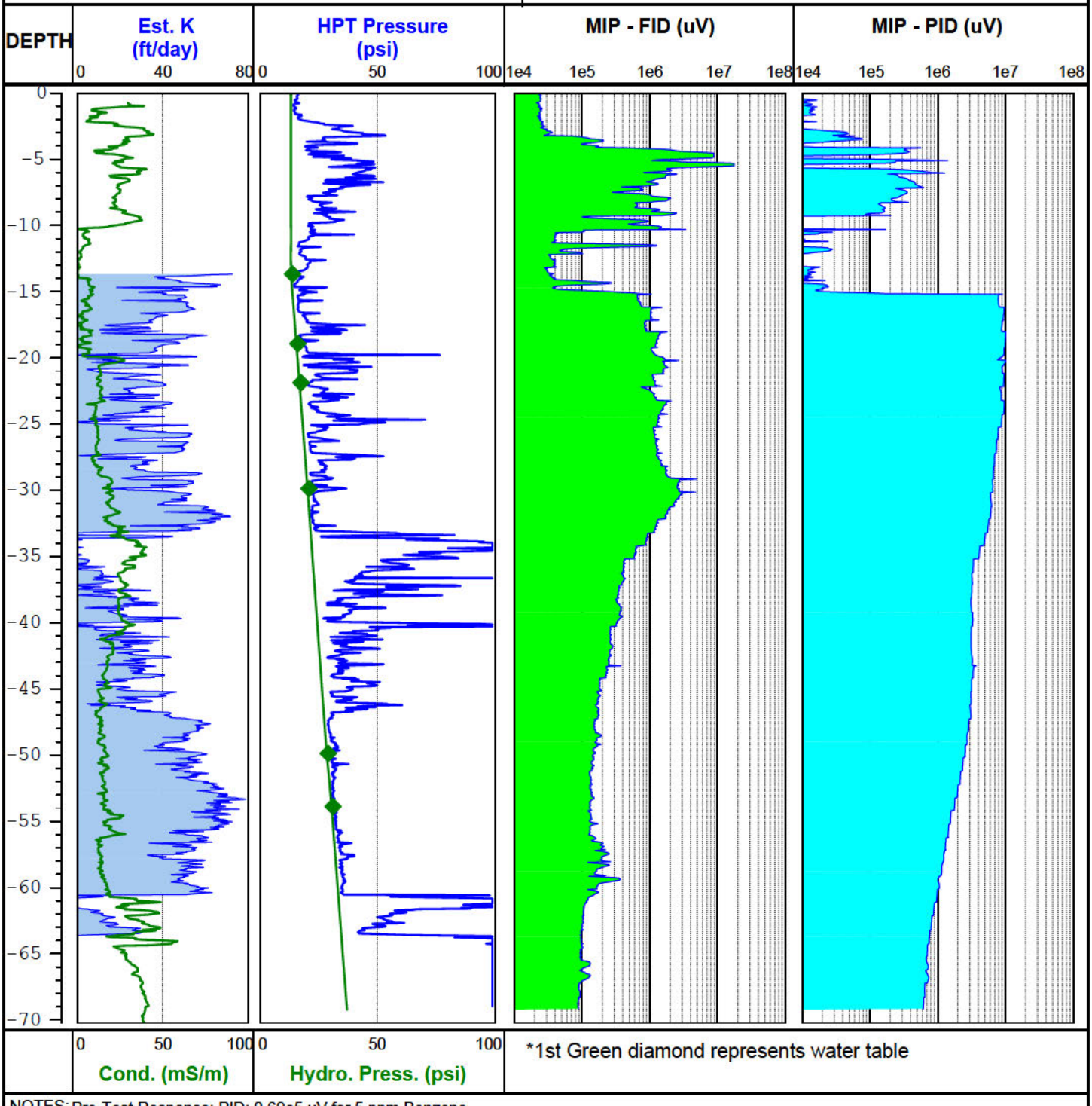
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-22**

TOTAL DEPTH: **70.25'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	221627.1357 ELEVATION: 20
DATES DRILLED:	7/29/2013	EASTING:	2687832.344



NOTES: Pre-Test Response: PID: 0.69e5 uV for 5 ppm Benzene.

Post-Test Response: PID: 0.48e5 uV for 5 ppm Benzene.

S_2C_2 inc.

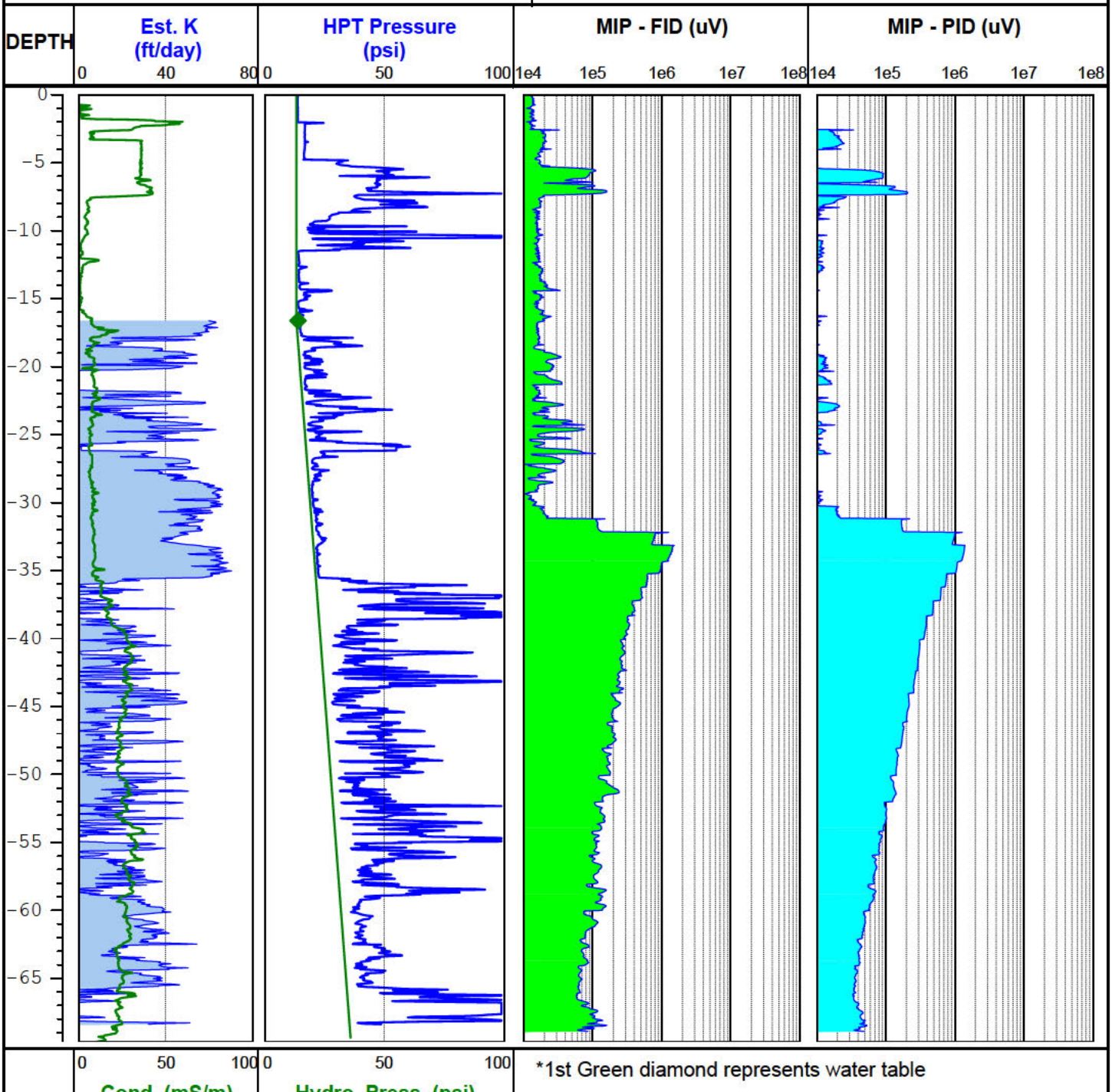
[redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-23**

TOTAL DEPTH: **69.65'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	223076.8331 ELEVATION: 20
DATES DRILLED:	8/27/2013	EASTING:	2688458.391



*1st Green diamond represents water table

NOTES: Pre-Test Response: PID: 0.84e5 uV for 5 ppm Benzene.

Post-Test Response: PID: 0.38e5 uV for 5 ppm Benzene.

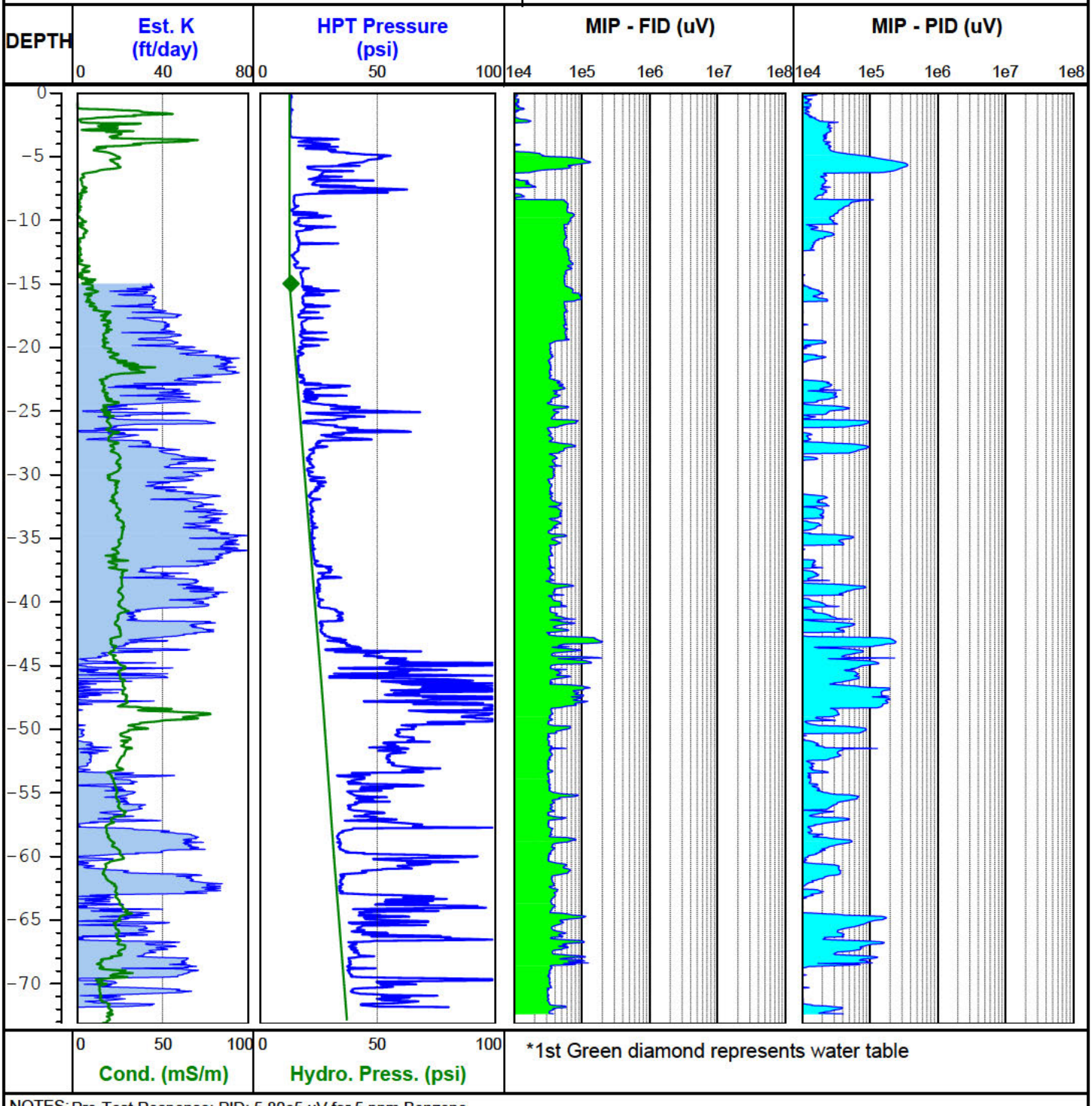
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-24**

TOTAL DEPTH: **73.1'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	223031.8361 ELEVATION: 20
DATES DRILLED:	8/28/2013	EASTING:	2688790.833



NOTES: Pre-Test Response: PID: 5.80e5 uV for 5 ppm Benzene.

Post-Test Response: PID: 0.89e5 uV for 5 ppm Benzene.

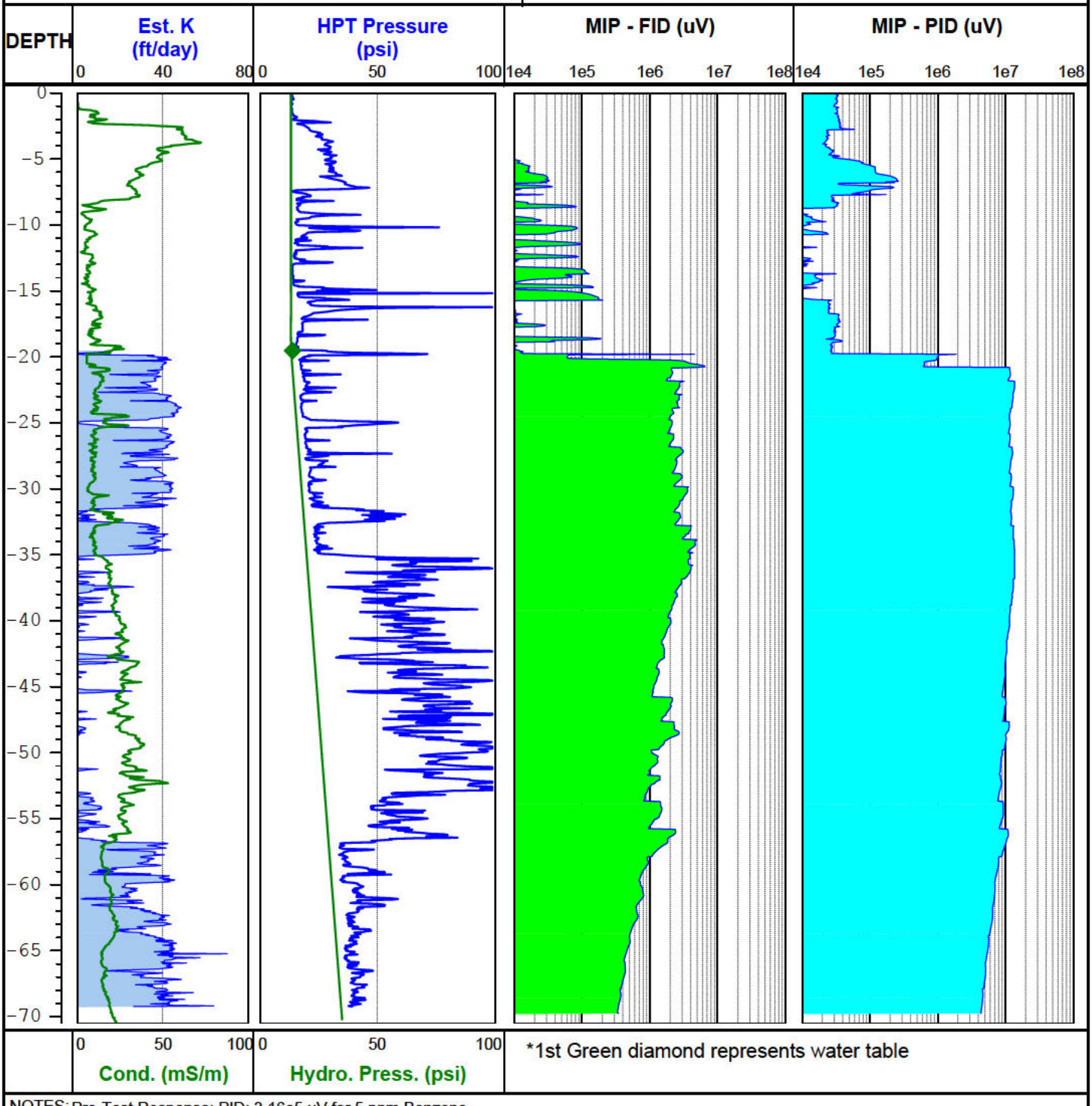
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-25**

TOTAL DEPTH: **70.5'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	222738.2866 ELEVATION: 20
DATES DRILLED:	8/27/2013	EASTING:	2688408.742



NOTES: Pre-Test Response: PID: 3.16e5 uV for 5 ppm Benzene.

Post-Test Response: PID: NA; baseline too high for test.

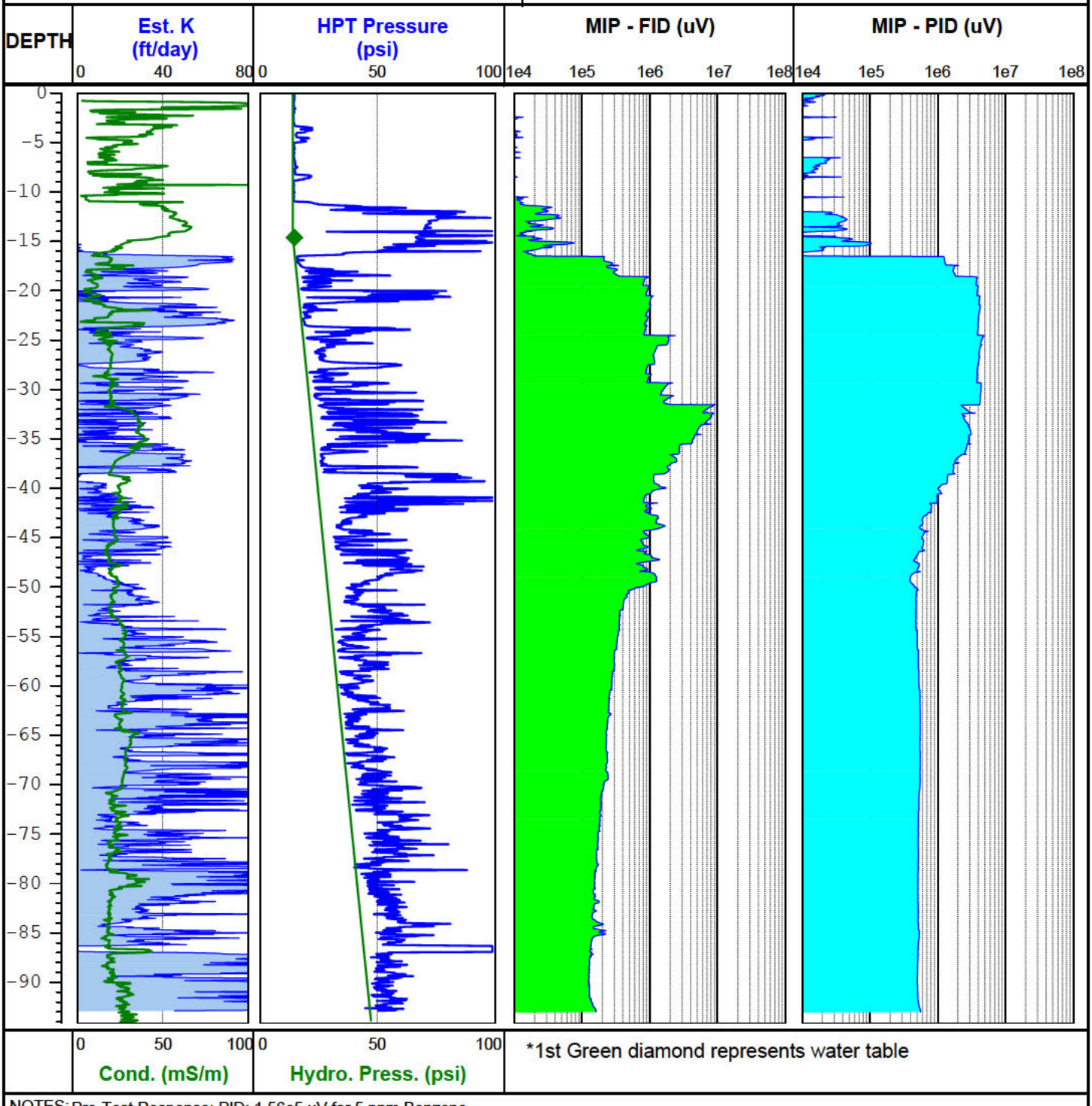
S_2C_2 inc. [redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-26**

TOTAL DEPTH: **94.15'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	222687.2035 ELEVATION: 20
DATES DRILLED:	8/6/2013	EASTING:	2688845.197



NOTES: Pre-Test Response: PID: 1.56e5 uV for 5 ppm Benzene.

Post-Test Response: PID: 0.28e5 uV for 5 ppm Benzene.

S2C2 inc.

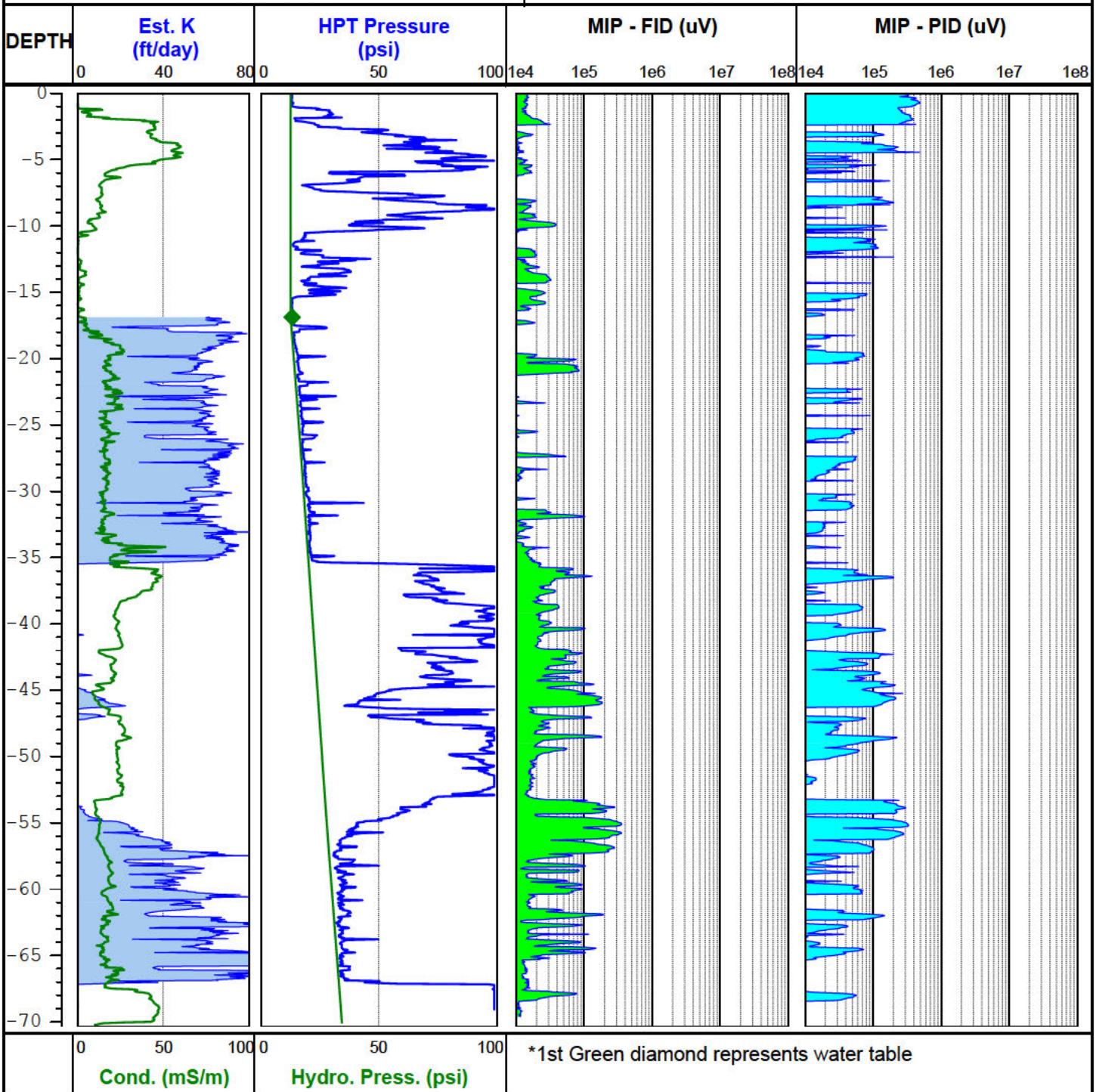
[redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-27**

TOTAL DEPTH: **70.35'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	[redacted]
PROJECT MANAGER:	[redacted]	NORTHING:	223413.2601 ELEVATION: 20
DATES DRILLED:	8/29/2013	EASTING:	2688472.742



*1st Green diamond represents water table

NOTES: Pre-Test Response: PID: 5.06e5 uV for 5 ppm Benzene.

Post-Test Response: PID: 0.66e5 uV for 5 ppm Benzene.

S_2C_2 inc.

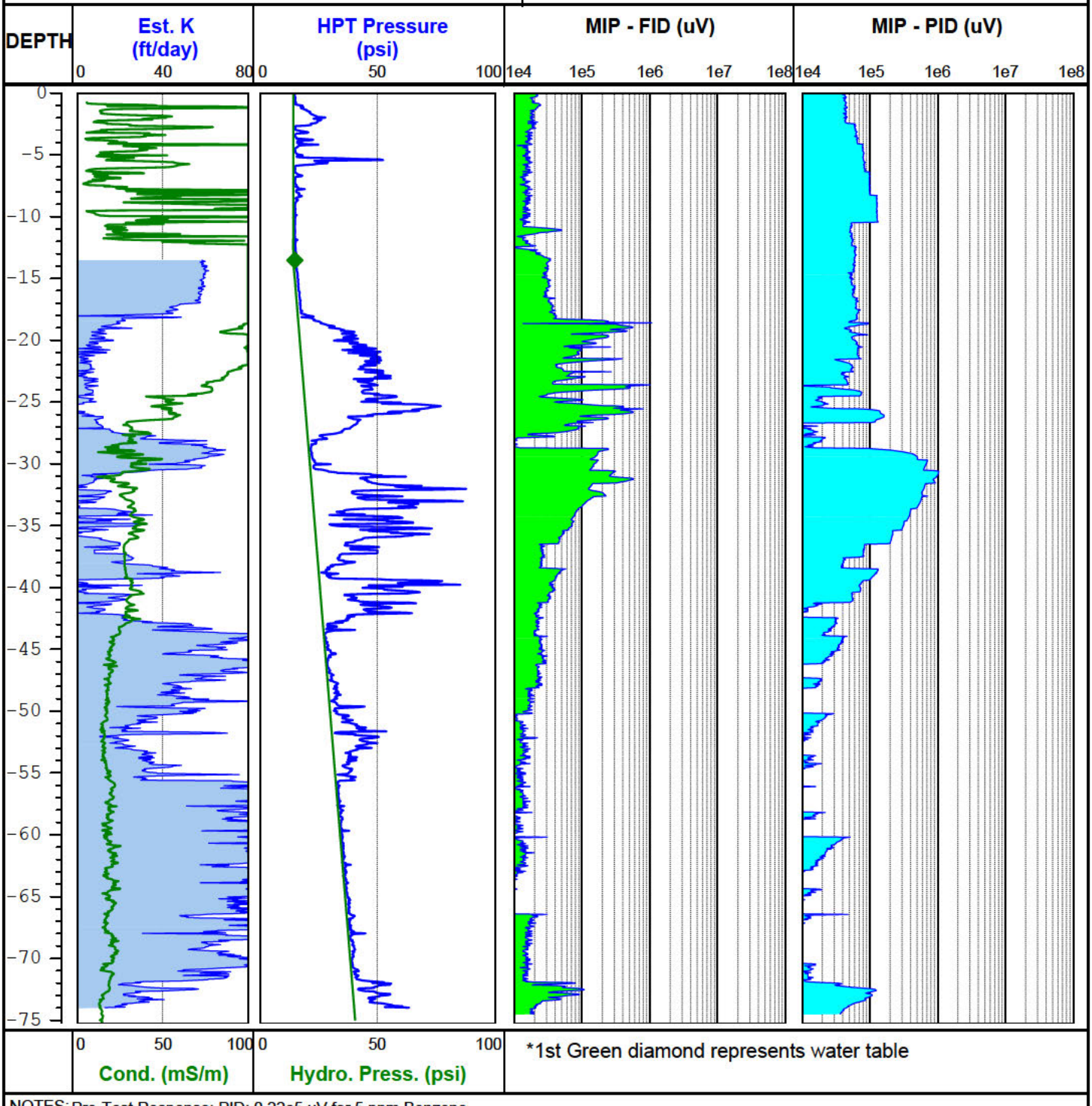
[redacted]

FIELD BOREHOLE LOG

BOREHOLE NO.: **DSCP-MiHPT-28**

TOTAL DEPTH: **75.25'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Former DSCP	DRILLER:	[redacted]
SITE LOCATION:	Philadelphia, PA	RIG TYPE:	Geoprobe 6600
JOB NO.:	NA	SAMPLING METHOD:	MiHPT
LOGGED BY:	FI 6000	OPERATOR:	Tom Koester
PROJECT MANAGER:	[redacted]	NORTHING:	222050.9369 ELEVATION: 20
DATES DRILLED:	8/5/2013	EASTING:	2688696.169



NOTES: Pre-Test Response: PID: 0.22e5 uV for 5 ppm Benzene.

Post-Test Response: PID: 0.17e5 uV for 5 ppm Benzene.

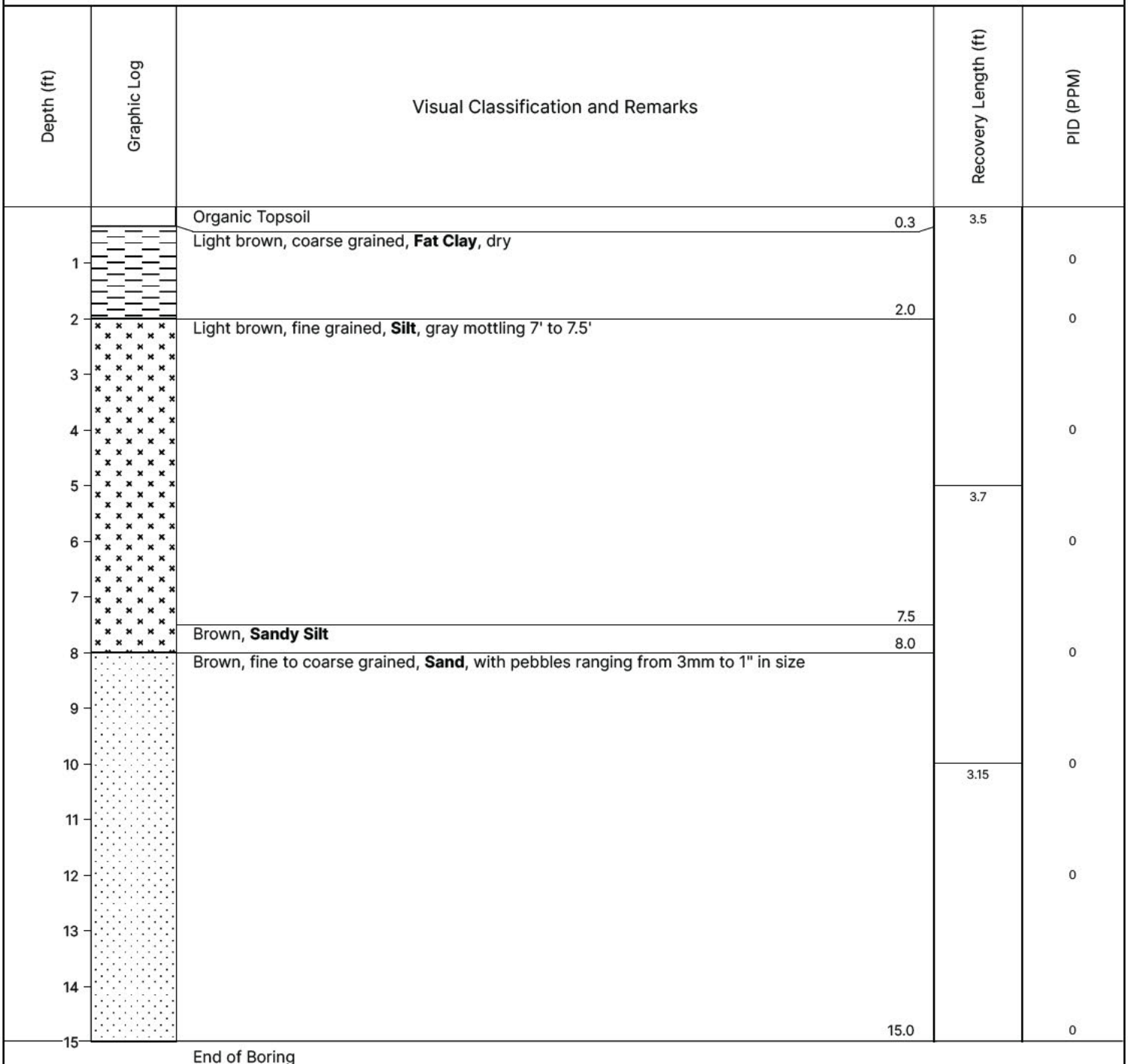
APPENDIX B
NEAR SOURCE BORING LOGS

SOIL BORING: Building 12-NS-A

Project Number: [redacted]
Project Name: DSCP VI Investigation
Address: 2990A S 20th St, Philadelphia, PA
Drilling Date: 02/19/2024
Date Completed: 02/19/2024

Drilling Company: Active
Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]

Checked By: [redacted]



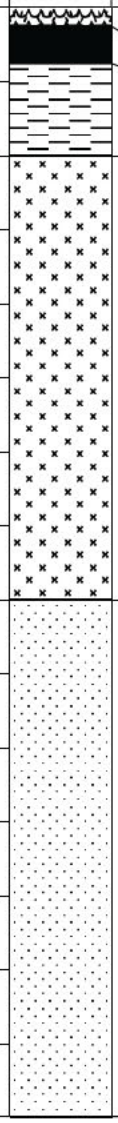
NOTES: End of boring at 15'. Soil sample Bldg 12_NS-A_14.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: Building 12-NS-B

Project Number: [redacted]
Project Name: DSCP VI Investigation
Drilling Date: 02/19/2024
Date Completed: 02/19/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]
Checked By [redacted]

Address: 2990A S 20th St, Philadelphia, PA



Depth (ft)	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
0	**Topsoil** 0.3	4	0
	Asphalt fragments 0.8		
1	Light brown, coarse grained, **Fat Clay**, dense, dry		
2	2.0		0
	Brown, coarse grained, **Silt**, gray from 6.5' to 8'		
3			
4			0
5		4	
6			0
7			
8	8.0		0
	Brown, fine to coarse grained, **Sand**, with pebbles ranging from 3mm to 1" in size		
9			
10		3.25	0
11			
12			0
13			
14			0
15	15.0		0
	End of Boring		

NOTES: End of boring at 15'. Soil sample Bldg 12_NS-B_14.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: Building 30-NS-B

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 02/21/2024
Date Completed: 02/21/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]
Checked By [redacted]

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
	[redacted]	**Asphalt** 0.7	3	0
1		stone subbase 0.8		0
		Light brown, fine grained, **Silt**		
2				0
3				0
4				0
5			3.5	0
		5.8		
6		Gray, fine grained, **Silt**		0
7				0
8				0
9				0
10			3.15	0
11				0
12				0
13		13.5		0
14		Brown to dark brown, fine to coarse grained, **Sand** with 1mm-1", subangular, **Gravel and Pebbles**		0
15		15.0		0
		End of boring		

NOTES: End of boring at 15'. Soil sample Bldg 30-NS-B-14.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: Building 30-NS-A

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 02/20/2024
Date Completed: 02/20/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]
Checked By [redacted]

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Samples: Recovery Length (ft)	Samples: PID (PPM)
		Asphalt 0.6	3	0
1		Stone subbase, gravel 1.5		0
2		Dark brown, medium grained, **Silt**, fill material/brick present 2.5		0
3		Light brown, fine grained, **Silt** 4.0		0
4		Gray, fine grained, **Silt**		0
5			3.4	0
6				0
7				0
8		8.2		
9		Brown, fine to medium grained, **Sand** with 1 mm to .5" , **Pebbles**, trace sub angular gravel 1" in size, grades to fine at 11.5'		0.1
10			3.5	
11		11.5		
12		Dark gray, **Sandy Silt** with angular to subangular, **Gravel**		0.2
13		13.5		0.4 0.9
14		Reddish brown, **Sandy Silt**, loose 14.7		0.6 0.8
15		Tan, medium grained, **Sand** 15.0		1.5 0.4
		End of Boring		

NOTES: End of boring at 15'. Soil sample Bldg 30_NS-A_14.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: Building 6-NS-A

Project Number: [redacted]
Project Name: DSCP VI Investigation
Address: 2990A S 20th St, Philadelphia, PA
Drilling Date: 02/16/2024
Date Completed: 02/16/2024

Drilling Company: Active
Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Total Depth: 15'
Borehole Diameter: 2 in
Logged By: [redacted]

Checked By: [redacted]

Depth (ft)	Graphic Log	Visual Classification and Remarks		Recovery Length (ft)	PID (PPM)
0		**Concrete**	0.4	4	0
1		Brown, fine to coarse grained, **Silt** with angular, **Gravel**			
2			2.0		0
		Light gray, **Gravel**			
3			3.0		
		Brown, coarse grained, **Sandy Silt**			
4			4.0		0
		Brown, coarse grained, **Silt**, wet at 7' to 7.5'			0.7
5				3.33	0
6					0
7					
8			8.0		0
		Dense, brown, dry, coarse grained, **Silt**			
9					
10			10.0		
		Brown, medium plasticity, coarse grained, **Fat Clay** with medium grained, **Sand**		2.5	0.4
11					0.5
					0.9
12					1.2
					1.1
13			13.0		0.4
		Brown, coarse grained, **Sand** with 1mm to 1", **Gravel**			0.5
14					0.4
			14.8		0.4
15		Soft, brown, fine grained, **Fat Clay**	15.0		1.2
		End of boring			

NOTES: End of boring at 15'. Soil sample Bldg 6_NS-A_13.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: Building 6-NS-B

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 02/19/2024
Date Completed: 02/19/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]
Checked By [redacted]

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
0		**Topsoil**	2.5	
		0.1		
1		Fill material/brick		
		2.0		
2		Light brown, coarse grained, **Fat Clay**		
		2.8		2.7
3		Light brown, fine grained, **Silt**, gray 8' to 11', damp 8' to 8.5'		1.9
4				7.5
				3.5
5			4.25	
6				
7				
8				
9				
10			4	
		11.0		
11		Brown, **Sand**, trace pebbles 1 mm in size, odor		
12				
13				
14				
		15.0		
15		End of Boring		

NOTES: End of boring at 15'. Soil sample Bldg 6_NS-B_14.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: Building 9-NS-I

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 02/20/2024
Date Completed: 02/20/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 12'
Logged By: [redacted]
Checked By [redacted]

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
		Asphalt 0.8	3.5	0
1		Tan, fine grained, **Silt**		
2				0
3				
4				0
5		5.0		
5		Light brown, fine grained, **Silt**	3	
6				0
7				
8				0
		8.5		
		Concrete 9.0		
9		Tan, fine grained, **Silt**		
		10.0		
10		Dark gray, medium grained, **Sand**	2	0
11				0.2
		11.8		
12		Boulder, Refusal 12.0		0.4
		End of Boring		

NOTES: Refusal at 12', end of boring. Soil sample Bldg 9-NS-I-11.5 collected from boring. Vapor probe set at 12'.

SOIL BORING: Building 9-NS-B

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 02/12/2024
Date Completed: 02/12/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]
Checked By [redacted]

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks		Recovery Length (ft)	PID (PPM)
		Asphalt	0.2	3	0
		Concrete	1.0		0
1		Brown, fine grained, **Silt**			0
2					0
3					0
4					0
5				3.5	0
6			6.0		0
		Blue-gray, fine grained, **Silt**			
7					0
8					0
9			9.0		
		Dark brown, coarse grained, **Sand** with **Pebbles**, odor			5.2
10			10.0	5	
		Gray, fine to medium grained, **Sand**			0.7
11					1.2
12					2.7
					7.1
13			13.0		4.7
		Gray, fine to medium grained, **Sand** with **Rounded Gravel**			4.4
14					7.2
15			15.0		4.8
		End of Boring			

NOTES: End of boring at 15'. Soil sample Bldg 9_NS-B_14.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: Building 9-NS-D

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 02/16/2024
Date Completed: 02/16/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]
Checked By [redacted]

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
0		**Asphalt** 0.2 **Concrete** 1.0	2	0
1		Brown, **Sandy Silt** 2.0		0
2		Brown, fine grained, **Silt** 3.0		0
3		Dark gray, medium to coarse grained, **Sand**, fill material/brick fragments present, wet 3' to 3.5'		0
4				0
5			2	0
6				0
7				0
8				0
9				0
10		10.0 Light brown, fine grained, **Fat Clay**, silty, soft, malleable, damp	4	0
11				
12				0
13				0
14				0
15		15.0 End of Boring		0

NOTES: End of boring at 15'. Soil sample Bldg 9_NS-D_9.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: Building 9-NS-G

Project Number: [redacted]
Project Name: DSCP VI Investigation
Drilling Date: 02/20/2024
Date Completed: 02/20/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]
Checked By [redacted]

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
	[redacted]	**Asphalt**	3.5	0
		0.8		
1		**Gravel**, Stone sub base		0
		1.5		
2		Light brown, fine grained, **Silt**		0
3				0
4				0
5			3.75	0
6				0
7				0
8				0
9		9.0		1.8
		Light brown, fine to medium grained, **Sand** with 1 mm-0.5", **Pebbles**		0.4
10			3	
				0.1
11				
12				
13				
14				
15		15.0		1.3
		End of boring		0.2

NOTES: End of boring at 15'. Soil sample Bldg 9_NS-G_14.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: Building 9-NS-K

Project Number: [redacted]
Project Name: DSCP VI Investigation
Address: 2990A S 20th St, Philadelphia, PA
Drilling Date: 02/21/2024
Date Completed: 02/21/2024

Drilling Company: Active
Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Total Depth: 15'
Borehole Diameter: 2 in
Logged By: [redacted]

Checked By: [redacted]

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
	[redacted]	**Asphalt** 0.7	3	0
1		Dense, light gray olive green, fine grained, **Silt** with 1-3 mm, **Gravel**		0
2				0
3		3.3		0
4		Fine to coarse grained, **Silty Sand** with various sized, **Gravel**, fill material throughout		0
5			2.5	0
6				0
7				0
8				0
9				0
10			1	0
11				0
12				0
13				0
14				0
15		15.0		0
		End of boring		

NOTES: End of boring at 15'. Soil sample Blgd 9_NS-K_14.5 collected from boring. Vapor probe set at 12'. Water observed in boring at 12' after drilling.

SOIL BORING: Building 9-NS-E

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 02/16/2024
Date Completed: 02/16/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By:
Checked By [redacted]

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
		Asphalt 0.8	4	0
1		Dark gray, coarse grained, **Sand**, some rounded pebbles 2.0		0
2		Brown, coarse grained, **Silt**, little sand at 4.5'		0
3				
4				0
5			2	
6				0
7				
8				0
9		9.0		
		Brown, coarse grained, **Silt**, gravel at 10'-10.25'		
10			3	
11				
12				0
13		13.5		
		Dark gray, coarse grained, **Fat Clay**, with pebbles 1mm in size		
14				0
15		15.0		
		End of Boring		

NOTES: End of boring at 15'. Soil sample Bldg 9_NS-E_14.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: Building 9-NS-H

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 02/20/2024
Date Completed: 02/20/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]
Checked By

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
		Asphalt	3	0
		0.8		
1		**Gravel**, Stone subbase		0
		1.0		
		Brown, fine grained, **Silt**		
2				0
		3.0		
3		Light blue-gray, fine grained, **Silt**		0
4				0
5			3.5	0
		6.0		
6		Light blue-gray, moist to wet, fine grained, **Silt**		0
		7.0		
7		Light blue-gray, fine grained, **Silt**		0
8				0
		8.5		
9		Light brown, fine to medium grained, **Sand** with 1 mm-1", **Gravel and Pebbles**		0.1
10			3	0.1
11				0
12				0
13				0
14				0
15		15.0		0
		End of boring		

NOTES: End of boring at 15'. Soil sample Bldg 9_NS-H_14.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: Building 9-NS-A

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 02/12/2024
Date Completed: 02/12/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]
Checked By:

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
		Asphalt 0.2	2.5	0
		Concrete 1.0		0
1		Brown, fine grained, **Silt**		0
2				0
3				0
4		4.0		0
		Gray, fine grained, **Silt**		
5			4	0
		6.0		
6		Brown, fine grained, **Sand**, wet		0
7		7.5		0
		Gray, fine grained, **Silt**		
8		8.5		0
9		Dark gray, coarse grained, **Sand**, some pebbles, dry to moist, odor		2
		10.0		
10		Dark brown, medium to coarse grained, **Sand**, dry, odor	4	
11				
12		12.5		3.2
		Gray, fine to medium grained, **Sand**, dry		
13				
14				2
		15.0		
15		End of Boring		1.2

NOTES: End of boring at 15'. Soil sample Bldg 9_NS-A_14.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: Building 9-NS-J

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 02/20/2024
Date Completed: 02/20/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By:
Checked By [redacted]

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
	[redacted]	**Asphalt** 0.8	3.5	0
1		**Gravel** 0.9		
		Light brown, fine grained, **Silt**		
2				0
3				
4				0
5		5.0		
		Light brown, damp, fine grained, **Silt**	3.5	
		6.0		
6		Light brown, fine grained, **Silt**		0
7				
8				0
9		9.0		
		Light brownish gray, fine to medium grained, **Sand** with 1mm-1", **Pebbles**		
10			5	0
11				
12				0
13				
14		14.5		
		Dense, red, fine grained, **Silt** 15.0		1.5
15		End of boring		

NOTES: End of boring at 15'. Soil sample Bldg 9_NS-J_14.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: Building 9-NS-C

Project Number: [redacted]
Project Name: DSCP VI Investigation
Address: 2990A S 20th St, Philadelphia, PA
Drilling Date: 02/12/2024
Date Completed: 02/12/2024

Drilling Company: Active
Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Total Depth: 15'
Borehole Diameter: 2 in
Logged By: [redacted]

Checked By: [redacted]

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
		Asphalt 0.3	2.5	0
1		**Concrete** 1.0		0
		Gray, damp, fine grained, **Silt**		
2				0
		3.0		
3		Light brown, dry to moist, fine grained, **Silt**		0
4				0
5			3.6	0
6				0
7				0
8				0
9		9.0		0
		Dense, dark gray, fine grained, **Silt**		
10			3	0
11		11.0		0
		Brown, coarse grained, **Sand** with rounded, **Gravel**		
12				0.4
13				0
14				0
15		15.0		0
		End of boring		

NOTES: End of boring at 15'. Soil sample Bldg 9_NS-C_12.5 collected from boring. Vapor probe set at 14.5'.

SOIL BORING: Building 9-NS-F

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 02/20/2024
Date Completed: 02/20/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]
Checked By

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
0		**Asphalt**	3	0
1		1.0		
		Stone subbase		
2		1.8		0
		Dense, light brown, fine grained, **Silt**		
3		3.5		
		Brown, fine to medium grained, **Sand**, some pebbles ranging from 1 mm to .5" in size		0
4				
5		5.0		
		Light brown, fine grained, **Silt**, brick noted at 5' to 5.5' and 8' to 8.5'	3	
6				0
7				
8				0
9		9.5		
		Dark gray, medium grained, **Sand**, gravel at 9.5' to 10'		
10			3.5	0
11				0.8
12				0.6
13				
14				0.4
				0.2
15		15.0		0.1
		End of Boring		

NOTES: End of boring at 15'. Soil sample Bldg 9_NS-F_14.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: Building E-NS-A

Project Number: [redacted]
Project Name: DSCP VI Investigation
Address: 2990A S 20th St, Philadelphia, PA
Drilling Date: 02/29/2024
Date Completed: 02/29/2024

Drilling Company: Active
Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Total Depth: 15'
Borehole Diameter: 2 in
Logged By: [redacted]

Checked By: [redacted]

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
		Concrete 0.7	2.66	0
1		Brown, damp, fine grained, **Silt**		0
2				0
3				0
4				0
5			4	0
6				0
7		7.0		0
		Brown, damp to slightly moist, fine to medium grained, **Sand** with subangular, **Gravel**		
8				0
9				0
10			4	0
11				0
12		12.0		0
		Light brown, saturated, medium grained, **Sandy Silt**		
13				0
14				0
15		15.0		0
		End of boring		

NOTES: End of boring at 15'. Soil sample Bldg E_NS-A_9.5 collected from boring. Vapor probe set at 10'.

SOIL BORING: Building E-NS-B

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 03/01/2024
Date Completed: 03/01/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]
Checked By [redacted]

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
		Concrete 0.7	3	0
1		Dark brown, dry, fine grained, **Silt**		0
2				0
3				0
4				0
5			5	0
6		6.0 Light brown, dry, fine grained, **Silt**		0
7				0
8		8.0 Brown, moist, fine grained, **Silt**		0
9				0
10		10.5	4	0
11		Brown, medium grained, **Sand** with **Pebbles**		0
12		12.5		0
13		Brown, wet, medium grained, **Sand** with **Pebbles**		0
14				0
15		15.0 End of boring		0

NOTES: End of boring at 15'. Soil sample Bldg E_NS-B_10.5 collected from boring. Vapor probe set at 10'.

SOIL BORING: Hotel-NS-B

Project Number: [redacted]
Project Name: DSCP VI Investigation
Address: 2990A S 20th St, Philadelphia, PA
Drilling Date: 02/28/2024
Date Completed: 02/28/2024

Drilling Company: Active
Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Total Depth: 10'
Borehole Diameter: 2 in
Logged By: [redacted]

Checked By: [redacted]

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
		Asphalt 0.3	2.5	0
1		Brown, coarse grained, **Silt**, brick fragments		0
2		2.5		0
3		Dark gray, medium to coarse grained, **Sand** with angular to subangular, **Gravel**		0
4				0
5			2	0
6				0
7		7.0		0
		Brown, saturated, medium to coarse grained, **Sand** with angular to subangular, **Gravel**		
8				0
9				0
10		10.0		0
		End of boring		

NOTES: End of boring at 10'. Soil sample Hotel_NS-B_7.5 collected from boring. Vapor probe set at 7'.

SOIL BORING: Hotel-NS-A

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 02/28/2024
Date Completed: 02/28/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]
Checked By [redacted]

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
0		**Asphalt** 0.3	1.7	0
1		Fine to coarse grained, **Sand** with subangular, **Gravel and Pebbles**, brick fragments		0
2				0
3				0
4				0
5			1	0
6				0
7				0
8				0
9				0
10		10.0 Saturated, fine to coarse grained, **Sand** with subangular, **Gravel and Pebbles**, brick fragments	2	0
11				0
12		12.0 Dark gray, wet, fine grained, **Silt**		0
13				0
14				0
15		15.0 End of boring		0

NOTES: End of boring at 15'. Soil sample Hotel_NS-A_7.5 collected from boring. Vapor probe set at 7'.

SOIL BORING: PAgnesS-NS-B

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 02/29/2024
Date Completed: 02/29/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]
Checked By [redacted]

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
		Asphalt 0.3	2	0
1		Black, dry, **Poorly Graded Sand** with fine to coarse grained, **Gravel and Pebbles**, brick fragments		0
2		2.5		0
3		Brown, dry to slightly moist, **Poorly Graded Sand** with fine to coarse grained, **Gravel and Pebbles**		0
4				0
5		5.0		0
		Tan, dry, **Poorly Graded Sand** with fine to coarse grained, **Gravel and Pebbles**	2	
6		6.3		0
7		Tan, dry, **Poorly Graded Sand** with fine to coarse grained, **Gravel and Pebbles**, brick fragments		0
8				0
9		9.0		0
		Dark gray, dry, **Poorly Graded Sand** with fine to coarse grained, **Gravel and Pebbles**		
10		10.0		
		Dark gray, wet, **Poorly Graded Sand** with fine to coarse grained, **Gravel and Pebbles**, brick fragments	2	
11				0
12				0
13		13.0		0
		Dark gray, fine grained, **Silt**		
14				0
15		15.0		0
		End of boring		

NOTES: End of boring at 15'. Soil sample PAgnesS_NS-B_7.5 collected from boring. Vapor probe set at 7'.

SOIL BORING: PAgnesS-NS-A

Project Number: [redacted]
Project: DSCP VI Investigation
Drilling Date: 02/28/2024
Date Completed: 02/28/2024
Drilling Company: Active

Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Boring Diameter: 2 in
Total Depth: 15'
Logged By: [redacted]
Checked By [redacted]

Address: 2990A S 20th St, Philadelphia, PA

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
		Asphalt 0.3	2.5	0
1		Dark gray, medium to coarse grained, **Sand** with subangular, **Gravel and Pebbles**, brick fragments 1.0		0
2		Brown, coarse grained, **Silt** with **Pebbles**, brick fragments at 3'		0
3		3.0		0
4		Dark brown gray, moist, medium to coarse grained, **Sand** with angular to subangular, **Gravel and Pebbles**		0
5			2.5	0
6				0
7				0
8				0
9				0
10		10.5	2.5	0
11		Brown, coarse grained, **Sandy Silt**		0
12				0
13				0
14				0.7
15		15.0		0
		End of boring		

NOTES: End of boring at 15'. Soil sample PAgnesS_NS-A_13.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: PHA Gym-NS-B

Project Number: [redacted]
Project Name: DSCP VI Investigation
Address: 2990A S 20th St, Philadelphia, PA
Drilling Date: 03/01/2024
Date Completed: 03/01/2024

Drilling Company: Active
Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Total Depth: 15'
Borehole Diameter: 2 in
Logged By: [redacted]

Checked By: [redacted]

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
0		**Topsoil** 0.5	2.75	0
1		Brown, medium to coarse grained, **Sand** with rounded, **Gravel and Pebbles**		
2		2.5		0
3		Light brown, damp to moist, medium grained, **Silt**, damp to wet at 8.5'		
4				0
5			3.7	0
6				0
7				
8				0
9		9.5		
10		Dense, light green and tan, fine grained, **Silt** 10.0		
10		Dark gray, coarse grained, **Silty Sand** with subangular, **Gravel**, black 12.5' to 15'	2.2	0
11				
12				0
13				
14				0
15		15.0		
		End of boring		

NOTES: End of boring at 15'. Soil sample PHA Gym_NS-B_12.5 collected from boring. Vapor probe set at 6.5'.

SOIL BORING: PHA Gym-NS-A

Project Number: [redacted]
Project Name: DSCP VI Investigation
Address: 2990A S 20th St, Philadelphia, PA
Drilling Date: 03/01/2024
Date Completed: 03/01/2024

Drilling Company: Active
Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Total Depth: 15'
Borehole Diameter: 2 in
Logged By: [redacted]

Checked By: [redacted]

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
0		**Topsoil** 0.3	3	0
1		Dense, brown, dry, **Silt** 1.3		0
2		Light brown, dry to slightly moist, fine grained, **Silt**		0
3				0
4				0
5			3.5	0
6				0
7				0
8				0
9				0
10		10.0 Tan, fine to medium grained, **Sand** with angular to subangular, **Gravel and Pebbles**	3.75	0
11				0
12		12.5		0
13		Dark brown, fine to medium grained, **Sand** with angular to subangular, **Gravel and Pebbles** 14.0		0
14		Brown to light brown, wet, coarse grained, **Sand** with angular to subangular, **Gravel and Pebbles** 15.0		0
15		End of boring		0

NOTES: End of boring at 15'. Soil sample PHA Gym_NS-A_11.5 collected from boring. Vapor probe set at 12'.

SOIL BORING: STEEN-NS-B

Project Number: [redacted]
Project Name: DSCP VI Investigation
Address: 2990A S 20th St, Philadelphia, PA
Drilling Date: 03/06/2024
Date Completed: 03/06/2024

Drilling Company: Active
Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Total Depth: 15'
Borehole Diameter: 2 in
Logged By: [redacted]

Checked By: [redacted]

Depth (ft)	Graphic Log	Visual Classification and Remarks	PID (PPM)
1		**Sand** with **Gravel**, some brick	12
2			13
		2.5	
3		Light green, damp, medium grained, **Silt**	25
4			9
5			15
6			4
7			0.2
8			0.1
9			0.1
10			0.4
11			0.1
12			0.3
13			0.4
		14.0	
14		Damp, medium grained, **Sand** with **Pebbles**	0.3
			5.7
		15.0	
15		End of boring	0.7

NOTES: End of boring at 15'. Soil sample STEEN_NS-B_14.5 collected from boring. Vapor probe set at 15'.

SOIL BORING: STEEN-NS-A

Project Number: [redacted]
Project Name: DSCP VI Investigation
Address: 2990A S 20th St, Philadelphia, PA
Drilling Date: 03/06/2024
Date Completed: 03/06/2024

Drilling Company: Active
Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Total Depth: 15'
Borehole Diameter: 2 in
Logged By: [redacted]

Checked By: [redacted]

Depth (ft)	Graphic Log	Visual Classification and Remarks	Recovery Length (ft)	PID (PPM)
0		**Asphalt** 0.3	1.5	0
1		Dark brown, fine to coarse grained, **Sandy Silt** with **Gravel and Pebbles**, brick fragments		0
2				0
3				0
4				0
5		5.0		
5		Light green, damp, fine to medium grained, **Silt**, slight odor	3.5	0.2
6				0.2
7				0.7
8				15.2
9				19.2
10			3.8	22.4
11				6.2
12		12.0		15.1
12		Dark gray and tan, medium to coarse grained, **Sand** with angular, **Gravel and Pebbles**, damp 12' to 15', slight odor		
13				22.1
14				20.7
15		15.0		9.7
		End of boring		

NOTES: End of boring at 15'. Soil sample STEEN_NS-A_13 collected from boring. Vapor probe set at 15'.

SOIL BORING: VES Building-NS-A

Project Number: [redacted]
Project Name: DSCP VI Investigation
Address: 2990A S 20th St, Philadelphia, PA
Drilling Date: 02/21/2024
Date Completed: 02/21/2024

Drilling Company: Active
Drill Rig: Geoprobe 7822DT
Drilling Method: Direct Push
Total Depth: 15'
Borehole Diameter: 2 in
Logged By: [redacted]

Checked By: [redacted]

Depth (ft)	Graphic Log	Visual Classification and Remarks		Recovery Length (ft)	PID (PPM)
	[redacted]	**Asphalt**	0.8	3	0
1		Dense, grayish brown, medium grained, **Silt**, trace pebbles 1mm in size	1.5		0
2		Black, coarse grained, **Sand**, with pebbles 1mm in size			0
3			3.5		0
4		Light brown, fine grained, **Silt**			0
5				3.7	0
6					
7					0
8			8.0		
		Brown, fine grained, **Silt**	8.8		
9		Tan brown, coarse grained, **Sandy Silt** with angular, **Gravel**, ranging from pebble to gravel size			0
10				3.25	0
11					0
12					0
13					0
14					0
			14.8		
15		Tan, medium grained, **Sand**	15.0		0
		End of boring			

NOTES: End of boring at 15'. Soil sample VES Bldg_NS-A_14.5 collected from boring. Vapor probe set at 15'.

APPENDIX C
NEAR SOURCE SAMPLE LABORATORY ANALYTICAL REPORTS

Main Site: [redacted] | www.alsglobal.com
Associated Site: [redacted]

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343, NJ PA101

Analytical Results Report For

Montrose Environmental fka PARS Env

Project DSCP VI Investigatio[redacted]
Workorder [redacted]
Report ID 304550 on 2/29/2024

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Feb 22, 2024.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact[redacted]

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
ALS [redacted]

Recipient(s):
[redacted] - Montrose Environmental fka PARS Env
[redacted] - PARS Environmental

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

[redacted]
(ALS Digital Signature)
[redacted]
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3346845001	Bldg9_NS-A_14.5	Solid	02/12/2024 10:40	02/22/2024 09:19	CBC	Collected By Client
3346845002	Bldg9_NS-B_14.5	Solid	02/12/2024 11:49	02/22/2024 09:19	CBC	Collected By Client
3346845003	Bldg9_NS-C_12.5	Solid	02/12/2024 14:02	02/22/2024 09:19	CBC	Collected By Client
3346845004	Bldg9_NS-D_9.5	Solid	02/15/2024 13:58	02/22/2024 09:19	CBC	Collected By Client
3346845005	Bldg9_NS-E_14.5	Solid	02/16/2024 11:05	02/22/2024 09:19	CBC	Collected By Client
3346845006	Bldg6_NS-A_13.5	Solid	02/16/2024 13:25	02/22/2024 09:19	CBC	Collected By Client
3346845007	Bldg12_NS-A_14.5	Solid	02/19/2024 09:35	02/22/2024 09:19	CBC	Collected By Client
3346845008	Bldg12_NS-B_14.5	Solid	02/19/2024 10:27	02/22/2024 09:19	CBC	Collected By Client
3346845009	Bldg30_NS-A_14.5	Solid	02/20/2024 09:02	02/22/2024 09:19	CBC	Collected By Client
3346845010	Bldg9_NS-F_14.5	Solid	02/20/2024 11:17	02/22/2024 09:19	CBC	Collected By Client
3346845011	Bldg9_NS-G_14.5	Solid	02/20/2024 12:05	02/22/2024 09:19	CBC	Collected By Client
3346845012	Bldg9_NS-H_14.5	Solid	02/20/2024 12:37	02/22/2024 09:19	CBC	Collected By Client
3346845013	Bldg9_NS-I_11.5	Solid	02/20/2024 14:35	02/22/2024 09:19	CBC	Collected By Client
3346845014	Bldg9_NS-J_14.5	Solid	02/20/2024 15:28	02/22/2024 09:19	CBC	Collected By Client
3346845015	Bldg30_NS-B_14.5	Solid	02/21/2024 09:20	02/22/2024 09:19	CBC	Collected By Client
3346845016	VES Bldg_NS-A_14.5	Solid	02/21/2024 10:35	02/22/2024 09:19	CBC	Collected By Client
3346845017	Bldg9_NS-K_14.5	Solid	02/21/2024 12:45	02/22/2024 09:19	CBC	Collected By Client
3346845018	Bldg6_NS-B_14.5	Solid	02/19/2024 11:45	02/22/2024 09:19	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136, including but not limited to the following EPA Method reference revisions:
  EPA 300.1 Rev. 1.0-1997
  EPA 300.0 Rev. 2.1-1993
  EPA 353.2 Rev. 2.0-1993
  EPA 410.4 Rev. 1.0-1993
  EPA 420.4 Rev. 1.0-1993
  EPA 365.1 Rev. 2.0-1993
  EPA 200.7 Rev. 4.4-1994
  EPA 200.8 Rev. 5.4-1994
  EPA 245.1 Rev. 3.0-1994
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID		
3346845001	Bldg9_NS-A_14.5	**S1**	This sample was analyzed past the 8260 method specified 14 day holding time.

Result Notations

Notation Ref.	
1	Analyte was analyzed past the 7 day holding time.
2	The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Isopropylbenzene. The % Recovery was reported as 159 and the control limits were 72 to 137.
3	The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Toluene. The % Recovery was reported as 136 and the control limits were 73 to 134.
4	The QC sample type MS for method SW846 8260B was outside the control limits for the analyte 1,2,4-Trimethylbenzene. The % Recovery was reported as 136 and the control limits were 75 to 134.
5	The QC sample type MS for method SW846 8260B was outside the control limits for the analyte 1,3,5-Trimethylbenzene. The % Recovery was reported as 143 and the control limits were 74 to 137.
6	The QC sample type DUP for method S2540G-11 was outside the control limits for the analyte Moisture. The RPD was reported as 20.8 and the upper control limit is 10.

Detected Results Summary

Client Sample ID	Bldg9_NS-A_14.5	Collected	02/12/2024 10:40
Lab Sample ID	3346845001	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	3.9	mg/kg	1.2	SW846 6020A	#
WET CHEMISTRY					
Moisture	19.2	%	0.1	S2540G-11	#
Total Solids	80.8	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg9_NS-B_14.5	Collected	02/12/2024 11:49
Lab Sample ID	3346845002	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	2.8	mg/kg	0.90	SW846 6020A	#
WET CHEMISTRY					
Moisture	3.9	%	0.1	S2540G-11	#
Total Solids	96.1	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg9_NS-C_12.5	Collected	02/12/2024 14:02
Lab Sample ID	3346845003	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	2.3	mg/kg	0.95	SW846 6020A	#
WET CHEMISTRY					
Moisture	6.4	%	0.1	S2540G-11	#
Total Solids	93.6	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg9_NS-D_9.5	Collected	02/15/2024 13:58
Lab Sample ID	3346845004	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	111	mg/kg	1.2	SW846 6020A	#
WET CHEMISTRY					
Moisture	18.1	%	0.1	S2540G-11	#
Total Solids	81.9	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg9_NS-E_14.5	Collected	02/16/2024 11:05
Lab Sample ID	3346845005	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	493	mg/kg	1.1	SW846 6020A	#
WET CHEMISTRY					
Moisture	20.8	%	0.1	S2540G-11	#
Total Solids	79.2	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg6_NS-A_13.5	Collected	02/16/2024 13:25
Lab Sample ID	3346845006	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	4.2	mg/kg	1.0	SW846 6020A	#
WET CHEMISTRY					
Moisture	8.0	%	0.1	S2540G-11	#
Total Solids	92.0	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg12_NS-A_14.5	Collected	02/19/2024 09:35
Lab Sample ID	3346845007	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	2.5	mg/kg	0.92	SW846 6020A	#
WET CHEMISTRY					
Moisture	7.9	%	0.1	S2540G-11	#
Total Solids	92.1	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg12_NS-B_14.5	Collected	02/19/2024 10:27
Lab Sample ID	3346845008	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	3.9	mg/kg	1.1	SW846 6020A	#
WET CHEMISTRY					
Moisture	7.1	%	0.1	S2540G-11	#
Total Solids	92.9	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg30_NS-A_14.5	Collected	02/20/2024 09:02
Lab Sample ID	3346845009	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	7.6	mg/kg	1.1	SW846 6020A	#
VOLATILE ORGANICS					
Benzene	52.4	ug/kg	48.6	SW846 8260B	#
WET CHEMISTRY					
Moisture	7.7	%	0.1	S2540G-11	#
Total Solids	92.3	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg9_NS-F_14.5	Collected	02/20/2024 11:17
Lab Sample ID	3346845010	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	11.9	mg/kg	1.1	SW846 6020A	#
WET CHEMISTRY					
Moisture	17.5	%	0.1	S2540G-11	#
Total Solids	82.5	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg9_NS-G_14.5	Collected	02/20/2024 12:05
Lab Sample ID	3346845011	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	3.2	mg/kg	0.93	SW846 6020A	#
WET CHEMISTRY					
Moisture	6.9	%	0.1	S2540G-11	#
Total Solids	93.1	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg9_NS-H_14.5	Collected	02/20/2024 12:37
Lab Sample ID	3346845012	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	2.6	mg/kg	1.0	SW846 6020A	#
WET CHEMISTRY					
Moisture	4.8	%	0.1	S2540G-11	#
Total Solids	95.2	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg9_NS-I_11.5	Collected	02/20/2024 14:35
Lab Sample ID	3346845013	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	3.9	mg/kg	1.0	SW846 6020A	#
WET CHEMISTRY					
Moisture	6.3	%	0.1	S2540G-11	#
Total Solids	93.7	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg9_NS-J_14.5	Collected	02/20/2024 15:28
Lab Sample ID	3346845014	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	12.1	mg/kg	0.99	SW846 6020A	#
VOLATILE ORGANICS					
Benzene	91.2	ug/kg	52.9	SW846 8260B	#
WET CHEMISTRY					
Moisture	14.9	%	0.1	S2540G-11	#
Total Solids	85.1	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg30_NS-B_14.5	Collected	02/21/2024 09:20
Lab Sample ID	3346845015	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	3.7	mg/kg	1.0	SW846 6020A	#
WET CHEMISTRY					
Moisture	6.2	%	0.1	S2540G-11	#
Total Solids	93.8	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	VES Bldg_NS-A_14.5	Collected	02/21/2024 10:35
Lab Sample ID	3346845016	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	6.8	mg/kg	1.1	SW846 6020A	#
WET CHEMISTRY					
Moisture	9.0	%	0.1	S2540G-11	#
Total Solids	91.0	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg9_NS-K_14.5	Collected	02/21/2024 12:45
Lab Sample ID	3346845017	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	592	mg/kg	1.1	SW846 6020A	#
VOLATILE ORGANICS					
Naphthalene	4980	ug/kg	685	SW846 8260B	#
WET CHEMISTRY					
Moisture	14.5	%	0.1	S2540G-11	#
Total Solids	85.5	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg6_NS-B_14.5	Collected	02/19/2024 11:45
Lab Sample ID	3346845018	Lab Receipt	02/22/2024 09:19

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	3.4	mg/kg	0.96	SW846 6020A	#
WET CHEMISTRY					
Moisture	5.4	%	0.1	S2540G-11	#
Total Solids	94.6	%	0.1	S2540G-11	#

Results

Client Sample ID	Bldg9_NS-A_14.5	Collected	02/12/2024 10:40
Lab Sample ID	3346845001	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	3.9	S1	mg/kg	1.2	SW846 6020A	5	02/23/2024 10:04	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND,S1	ug/kg	57.8	SW846 8260B	50	02/29/2024 02:35	BST	A
1,2-Dibromoethane	ND	ND,S1	ug/kg	57.8	SW846 8260B	50	02/29/2024 02:35	BST	A
1,2-Dichloroethane	ND	ND,S1	ug/kg	57.8	SW846 8260B	50	02/29/2024 02:35	BST	A
1,3,5-Trimethylbenzene	ND	ND,S1	ug/kg	57.8	SW846 8260B	50	02/29/2024 02:35	BST	A
Benzene	ND	ND,S1	ug/kg	57.8	SW846 8260B	50	02/29/2024 02:35	BST	A
Ethylbenzene	ND	ND,S1	ug/kg	57.8	SW846 8260B	50	02/29/2024 02:35	BST	A
Isopropylbenzene	ND	ND,S1	ug/kg	57.8	SW846 8260B	50	02/29/2024 02:35	BST	A
Naphthalene	ND	ND,S1	ug/kg	116	SW846 8260B	50	02/29/2024 02:35	BST	A
Toluene	ND	ND,S1	ug/kg	57.8	SW846 8260B	50	02/29/2024 02:35	BST	A
Total Xylenes	ND	ND,S1	ug/kg	173	SW846 8260B	50	02/29/2024 02:35	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	71 – 146	02/29/2024 02:35	
4-Bromofluorobenzene	460-00-4	93.5%	46 – 138	02/29/2024 02:35	
Dibromofluoromethane	1868-53-7	93.3%	42 – 143	02/29/2024 02:35	
Toluene-d8	2037-26-5	103%	54 – 141	02/29/2024 02:35	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	19.2	S1	%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	80.8	1,S1	%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg9_NS-B_14.5	Collected	02/12/2024 11:49
Lab Sample ID	3346845002	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	2.8		mg/kg	0.90	SW846 6020A	5	02/23/2024 10:06	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND,4	ug/kg	65.6	SW846 8260B	50	02/23/2024 18:55	ILY	A
1,2-Dibromoethane	ND	ND	ug/kg	65.6	SW846 8260B	50	02/23/2024 18:55	ILY	A
1,2-Dichloroethane	ND	ND	ug/kg	65.6	SW846 8260B	50	02/23/2024 18:55	ILY	A
1,3,5-Trimethylbenzene	ND	ND,5	ug/kg	65.6	SW846 8260B	50	02/23/2024 18:55	ILY	A
Benzene	ND	ND	ug/kg	65.6	SW846 8260B	50	02/23/2024 18:55	ILY	A
Ethylbenzene	ND	ND	ug/kg	65.6	SW846 8260B	50	02/23/2024 18:55	ILY	A
Isopropylbenzene	ND	ND,2	ug/kg	65.6	SW846 8260B	50	02/23/2024 18:55	ILY	A
Naphthalene	ND	ND	ug/kg	131	SW846 8260B	50	02/23/2024 18:55	ILY	A
Toluene	ND	ND,3	ug/kg	65.6	SW846 8260B	50	02/23/2024 18:55	ILY	A
Total Xylenes	ND	ND	ug/kg	197	SW846 8260B	50	02/23/2024 18:55	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	71 – 146	02/23/2024 18:55	
4-Bromofluorobenzene	460-00-4	97.4%	46 – 138	02/23/2024 18:55	
Dibromofluoromethane	1868-53-7	88.1%	42 – 143	02/23/2024 18:55	
Toluene-d8	2037-26-5	104%	54 – 141	02/23/2024 18:55	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	3.9		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	96.1	1	%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg9_NS-C_12.5	Collected	02/12/2024 14:02
Lab Sample ID	3346845003	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	2.3		mg/kg	0.95	SW846 6020A	5	02/23/2024 15:58	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	46.8	SW846 8260B	50	02/23/2024 18:15	ILY	A
1,2-Dibromoethane	ND	ND	ug/kg	46.8	SW846 8260B	50	02/23/2024 18:15	ILY	A
1,2-Dichloroethane	ND	ND	ug/kg	46.8	SW846 8260B	50	02/23/2024 18:15	ILY	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	46.8	SW846 8260B	50	02/23/2024 18:15	ILY	A
Benzene	ND	ND	ug/kg	46.8	SW846 8260B	50	02/23/2024 18:15	ILY	A
Ethylbenzene	ND	ND	ug/kg	46.8	SW846 8260B	50	02/23/2024 18:15	ILY	A
Isopropylbenzene	ND	ND	ug/kg	46.8	SW846 8260B	50	02/23/2024 18:15	ILY	A
Naphthalene	ND	ND	ug/kg	93.5	SW846 8260B	50	02/23/2024 18:15	ILY	A
Toluene	ND	ND	ug/kg	46.8	SW846 8260B	50	02/23/2024 18:15	ILY	A
Total Xylenes	ND	ND	ug/kg	140	SW846 8260B	50	02/23/2024 18:15	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	71 – 146	02/23/2024 18:15	
4-Bromofluorobenzene	460-00-4	100%	46 – 138	02/23/2024 18:15	
Dibromofluoromethane	1868-53-7	87.2%	42 – 143	02/23/2024 18:15	
Toluene-d8	2037-26-5	103%	54 – 141	02/23/2024 18:15	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	6.4	6	%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	93.6	1	%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg9_NS-D_9.5	Collected	02/15/2024 13:58
Lab Sample ID	3346845004	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	111		mg/kg	1.2	SW846 6020A	5	02/23/2024 16:01	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	63.5	SW846 8260B	50	02/23/2024 18:35	ILY	A
1,2-Dibromoethane	ND	ND	ug/kg	63.5	SW846 8260B	50	02/23/2024 18:35	ILY	A
1,2-Dichloroethane	ND	ND	ug/kg	63.5	SW846 8260B	50	02/23/2024 18:35	ILY	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	63.5	SW846 8260B	50	02/23/2024 18:35	ILY	A
Benzene	ND	ND	ug/kg	63.5	SW846 8260B	50	02/23/2024 18:35	ILY	A
Ethylbenzene	ND	ND	ug/kg	63.5	SW846 8260B	50	02/23/2024 18:35	ILY	A
Isopropylbenzene	ND	ND	ug/kg	63.5	SW846 8260B	50	02/23/2024 18:35	ILY	A
Naphthalene	ND	ND	ug/kg	127	SW846 8260B	50	02/23/2024 18:35	ILY	A
Toluene	ND	ND	ug/kg	63.5	SW846 8260B	50	02/23/2024 18:35	ILY	A
Total Xylenes	ND	ND	ug/kg	190	SW846 8260B	50	02/23/2024 18:35	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	71 – 146	02/23/2024 18:35	
4-Bromofluorobenzene	460-00-4	97.6%	46 – 138	02/23/2024 18:35	
Dibromofluoromethane	1868-53-7	86.6%	42 – 143	02/23/2024 18:35	
Toluene-d8	2037-26-5	101%	54 – 141	02/23/2024 18:35	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	18.1		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	81.9	1	%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg9_NS-E_14.5	Collected	02/16/2024 11:05
Lab Sample ID	3346845005	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	493		mg/kg	1.1	SW846 6020A	5	02/23/2024 16:03	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	58.7	SW846 8260B	50	02/29/2024 02:56	BST	A
1,2-Dibromoethane	ND	ND	ug/kg	58.7	SW846 8260B	50	02/29/2024 02:56	BST	A
1,2-Dichloroethane	ND	ND	ug/kg	58.7	SW846 8260B	50	02/29/2024 02:56	BST	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	58.7	SW846 8260B	50	02/29/2024 02:56	BST	A
Benzene	ND	ND	ug/kg	58.7	SW846 8260B	50	02/29/2024 02:56	BST	A
Ethylbenzene	ND	ND	ug/kg	58.7	SW846 8260B	50	02/29/2024 02:56	BST	A
Isopropylbenzene	ND	ND	ug/kg	58.7	SW846 8260B	50	02/29/2024 02:56	BST	A
Naphthalene	ND	ND	ug/kg	117	SW846 8260B	50	02/29/2024 02:56	BST	A
Toluene	ND	ND	ug/kg	58.7	SW846 8260B	50	02/29/2024 02:56	BST	A
Total Xylenes	ND	ND	ug/kg	176	SW846 8260B	50	02/29/2024 02:56	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	71 – 146	02/29/2024 02:56	
4-Bromofluorobenzene	460-00-4	97.9%	46 – 138	02/29/2024 02:56	
Dibromofluoromethane	1868-53-7	93.3%	42 – 143	02/29/2024 02:56	
Toluene-d8	2037-26-5	108%	54 – 141	02/29/2024 02:56	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	20.8		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	79.2		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg6_NS-A_13.5	Collected	02/16/2024 13:25
Lab Sample ID	3346845006	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	4.2		mg/kg	1.0	SW846 6020A	5	02/23/2024 16:05	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	53.7	SW846 8260B	50	02/29/2024 03:16	BST	A
1,2-Dibromoethane	ND	ND	ug/kg	53.7	SW846 8260B	50	02/29/2024 03:16	BST	A
1,2-Dichloroethane	ND	ND	ug/kg	53.7	SW846 8260B	50	02/29/2024 03:16	BST	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	53.7	SW846 8260B	50	02/29/2024 03:16	BST	A
Benzene	ND	ND	ug/kg	53.7	SW846 8260B	50	02/29/2024 03:16	BST	A
Ethylbenzene	ND	ND	ug/kg	53.7	SW846 8260B	50	02/29/2024 03:16	BST	A
Isopropylbenzene	ND	ND	ug/kg	53.7	SW846 8260B	50	02/29/2024 03:16	BST	A
Naphthalene	ND	ND	ug/kg	107	SW846 8260B	50	02/29/2024 03:16	BST	A
Toluene	ND	ND	ug/kg	53.7	SW846 8260B	50	02/29/2024 03:16	BST	A
Total Xylenes	ND	ND	ug/kg	161	SW846 8260B	50	02/29/2024 03:16	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	100%	71 – 146	02/29/2024 03:16	
4-Bromofluorobenzene	460-00-4	94.4%	46 – 138	02/29/2024 03:16	
Dibromofluoromethane	1868-53-7	91.7%	42 – 143	02/29/2024 03:16	
Toluene-d8	2037-26-5	105%	54 – 141	02/29/2024 03:16	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	8.0		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	92.0		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg12_NS-A_14.5	Collected	02/19/2024 09:35
Lab Sample ID	3346845007	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	2.5		mg/kg	0.92	SW846 6020A	5	02/23/2024 16:07	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	49.2	SW846 8260B	50	02/29/2024 03:36	BST	A
1,2-Dibromoethane	ND	ND	ug/kg	49.2	SW846 8260B	50	02/29/2024 03:36	BST	A
1,2-Dichloroethane	ND	ND	ug/kg	49.2	SW846 8260B	50	02/29/2024 03:36	BST	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	49.2	SW846 8260B	50	02/29/2024 03:36	BST	A
Benzene	ND	ND	ug/kg	49.2	SW846 8260B	50	02/29/2024 03:36	BST	A
Ethylbenzene	ND	ND	ug/kg	49.2	SW846 8260B	50	02/29/2024 03:36	BST	A
Isopropylbenzene	ND	ND	ug/kg	49.2	SW846 8260B	50	02/29/2024 03:36	BST	A
Naphthalene	ND	ND	ug/kg	98.4	SW846 8260B	50	02/29/2024 03:36	BST	A
Toluene	ND	ND	ug/kg	49.2	SW846 8260B	50	02/29/2024 03:36	BST	A
Total Xylenes	ND	ND	ug/kg	148	SW846 8260B	50	02/29/2024 03:36	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	96.5%	71 – 146	02/29/2024 03:36	
4-Bromofluorobenzene	460-00-4	93.8%	46 – 138	02/29/2024 03:36	
Dibromofluoromethane	1868-53-7	88.4%	42 – 143	02/29/2024 03:36	
Toluene-d8	2037-26-5	101%	54 – 141	02/29/2024 03:36	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	7.9		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	92.1		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg12_NS-B_14.5	Collected	02/19/2024 10:27
Lab Sample ID	3346845008	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	3.9		mg/kg	1.1	SW846 6020A	5	02/23/2024 16:09	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	72.3	SW846 8260B	50	02/29/2024 03:57	BST	A
1,2-Dibromoethane	ND	ND	ug/kg	72.3	SW846 8260B	50	02/29/2024 03:57	BST	A
1,2-Dichloroethane	ND	ND	ug/kg	72.3	SW846 8260B	50	02/29/2024 03:57	BST	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	72.3	SW846 8260B	50	02/29/2024 03:57	BST	A
Benzene	ND	ND	ug/kg	72.3	SW846 8260B	50	02/29/2024 03:57	BST	A
Ethylbenzene	ND	ND	ug/kg	72.3	SW846 8260B	50	02/29/2024 03:57	BST	A
Isopropylbenzene	ND	ND	ug/kg	72.3	SW846 8260B	50	02/29/2024 03:57	BST	A
Naphthalene	ND	ND	ug/kg	145	SW846 8260B	50	02/29/2024 03:57	BST	A
Toluene	ND	ND	ug/kg	72.3	SW846 8260B	50	02/29/2024 03:57	BST	A
Total Xylenes	ND	ND	ug/kg	217	SW846 8260B	50	02/29/2024 03:57	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.8%	71 – 146	02/29/2024 03:57	
4-Bromofluorobenzene	460-00-4	94.7%	46 – 138	02/29/2024 03:57	
Dibromofluoromethane	1868-53-7	89.9%	42 – 143	02/29/2024 03:57	
Toluene-d8	2037-26-5	104%	54 – 141	02/29/2024 03:57	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	7.1		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	92.9		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg30_NS-A_14.5	Collected	02/20/2024 09:02
Lab Sample ID	3346845009	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	7.6		mg/kg	1.1	SW846 6020A	5	02/23/2024 16:11	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	48.6	SW846 8260B	50	02/29/2024 04:17	BST	A
1,2-Dibromoethane	ND	ND	ug/kg	48.6	SW846 8260B	50	02/29/2024 04:17	BST	A
1,2-Dichloroethane	ND	ND	ug/kg	48.6	SW846 8260B	50	02/29/2024 04:17	BST	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	48.6	SW846 8260B	50	02/29/2024 04:17	BST	A
Benzene	52.4		ug/kg	48.6	SW846 8260B	50	02/29/2024 04:17	BST	A
Ethylbenzene	ND	ND	ug/kg	48.6	SW846 8260B	50	02/29/2024 04:17	BST	A
Isopropylbenzene	ND	ND	ug/kg	48.6	SW846 8260B	50	02/29/2024 04:17	BST	A
Naphthalene	ND	ND	ug/kg	97.2	SW846 8260B	50	02/29/2024 04:17	BST	A
Toluene	ND	ND	ug/kg	48.6	SW846 8260B	50	02/29/2024 04:17	BST	A
Total Xylenes	ND	ND	ug/kg	146	SW846 8260B	50	02/29/2024 04:17	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.1%	71 – 146	02/29/2024 04:17	
4-Bromofluorobenzene	460-00-4	97.5%	46 – 138	02/29/2024 04:17	
Dibromofluoromethane	1868-53-7	88.9%	42 – 143	02/29/2024 04:17	
Toluene-d8	2037-26-5	103%	54 – 141	02/29/2024 04:17	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	7.7		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	92.3		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg9_NS-F_14.5	Collected	02/20/2024 11:17
Lab Sample ID	3346845010	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	11.9		mg/kg	1.1	SW846 6020A	5	02/23/2024 16:13	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	48.2	SW846 8260B	50	02/29/2024 04:37	BST	A
1,2-Dibromoethane	ND	ND	ug/kg	48.2	SW846 8260B	50	02/29/2024 04:37	BST	A
1,2-Dichloroethane	ND	ND	ug/kg	48.2	SW846 8260B	50	02/29/2024 04:37	BST	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	48.2	SW846 8260B	50	02/29/2024 04:37	BST	A
Benzene	ND	ND	ug/kg	48.2	SW846 8260B	50	02/29/2024 04:37	BST	A
Ethylbenzene	ND	ND	ug/kg	48.2	SW846 8260B	50	02/29/2024 04:37	BST	A
Isopropylbenzene	ND	ND	ug/kg	48.2	SW846 8260B	50	02/29/2024 04:37	BST	A
Naphthalene	ND	ND	ug/kg	96.4	SW846 8260B	50	02/29/2024 04:37	BST	A
Toluene	ND	ND	ug/kg	48.2	SW846 8260B	50	02/29/2024 04:37	BST	A
Total Xylenes	ND	ND	ug/kg	145	SW846 8260B	50	02/29/2024 04:37	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104%	71 – 146	02/29/2024 04:37	
4-Bromofluorobenzene	460-00-4	99.5%	46 – 138	02/29/2024 04:37	
Dibromofluoromethane	1868-53-7	95.3%	42 – 143	02/29/2024 04:37	
Toluene-d8	2037-26-5	108%	54 – 141	02/29/2024 04:37	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	17.5		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	82.5		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg9_NS-G_14.5	Collected	02/20/2024 12:05
Lab Sample ID	3346845011	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	3.2		mg/kg	0.93	SW846 6020A	5	02/23/2024 16:15	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	52.2	SW846 8260B	50	02/29/2024 04:58	BST	A
1,2-Dibromoethane	ND	ND	ug/kg	52.2	SW846 8260B	50	02/29/2024 04:58	BST	A
1,2-Dichloroethane	ND	ND	ug/kg	52.2	SW846 8260B	50	02/29/2024 04:58	BST	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	52.2	SW846 8260B	50	02/29/2024 04:58	BST	A
Benzene	ND	ND	ug/kg	52.2	SW846 8260B	50	02/29/2024 04:58	BST	A
Ethylbenzene	ND	ND	ug/kg	52.2	SW846 8260B	50	02/29/2024 04:58	BST	A
Isopropylbenzene	ND	ND	ug/kg	52.2	SW846 8260B	50	02/29/2024 04:58	BST	A
Naphthalene	ND	ND	ug/kg	104	SW846 8260B	50	02/29/2024 04:58	BST	A
Toluene	ND	ND	ug/kg	52.2	SW846 8260B	50	02/29/2024 04:58	BST	A
Total Xylenes	ND	ND	ug/kg	156	SW846 8260B	50	02/29/2024 04:58	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	96.7%	71 – 146	02/29/2024 04:58	
4-Bromofluorobenzene	460-00-4	96.5%	46 – 138	02/29/2024 04:58	
Dibromofluoromethane	1868-53-7	87.9%	42 – 143	02/29/2024 04:58	
Toluene-d8	2037-26-5	102%	54 – 141	02/29/2024 04:58	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	6.9		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	93.1		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg9_NS-H_14.5	Collected	02/20/2024 12:37
Lab Sample ID	3346845012	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	2.6		mg/kg	1.0	SW846 6020A	5	02/23/2024 16:24	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	53.9	SW846 8260B	50	02/29/2024 05:18	BST	A
1,2-Dibromoethane	ND	ND	ug/kg	53.9	SW846 8260B	50	02/29/2024 05:18	BST	A
1,2-Dichloroethane	ND	ND	ug/kg	53.9	SW846 8260B	50	02/29/2024 05:18	BST	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	53.9	SW846 8260B	50	02/29/2024 05:18	BST	A
Benzene	ND	ND	ug/kg	53.9	SW846 8260B	50	02/29/2024 05:18	BST	A
Ethylbenzene	ND	ND	ug/kg	53.9	SW846 8260B	50	02/29/2024 05:18	BST	A
Isopropylbenzene	ND	ND	ug/kg	53.9	SW846 8260B	50	02/29/2024 05:18	BST	A
Naphthalene	ND	ND	ug/kg	108	SW846 8260B	50	02/29/2024 05:18	BST	A
Toluene	ND	ND	ug/kg	53.9	SW846 8260B	50	02/29/2024 05:18	BST	A
Total Xylenes	ND	ND	ug/kg	162	SW846 8260B	50	02/29/2024 05:18	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.4%	71 – 146	02/29/2024 05:18	
4-Bromofluorobenzene	460-00-4	93.1%	46 – 138	02/29/2024 05:18	
Dibromofluoromethane	1868-53-7	89.1%	42 – 143	02/29/2024 05:18	
Toluene-d8	2037-26-5	104%	54 – 141	02/29/2024 05:18	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	4.8		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	95.2		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg9_NS-I_11.5	Collected	02/20/2024 14:35
Lab Sample ID	3346845013	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	3.9		mg/kg	1.0	SW846 6020A	5	02/23/2024 16:26	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	54.1	SW846 8260B	50	02/29/2024 07:00	BST	A
1,2-Dibromoethane	ND	ND	ug/kg	54.1	SW846 8260B	50	02/29/2024 07:00	BST	A
1,2-Dichloroethane	ND	ND	ug/kg	54.1	SW846 8260B	50	02/29/2024 07:00	BST	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	54.1	SW846 8260B	50	02/29/2024 07:00	BST	A
Benzene	ND	ND	ug/kg	54.1	SW846 8260B	50	02/29/2024 07:00	BST	A
Ethylbenzene	ND	ND	ug/kg	54.1	SW846 8260B	50	02/29/2024 07:00	BST	A
Isopropylbenzene	ND	ND	ug/kg	54.1	SW846 8260B	50	02/29/2024 07:00	BST	A
Naphthalene	ND	ND	ug/kg	108	SW846 8260B	50	02/29/2024 07:00	BST	A
Toluene	ND	ND	ug/kg	54.1	SW846 8260B	50	02/29/2024 07:00	BST	A
Total Xylenes	ND	ND	ug/kg	162	SW846 8260B	50	02/29/2024 07:00	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	71 – 146	02/29/2024 07:00	
4-Bromofluorobenzene	460-00-4	95.7%	46 – 138	02/29/2024 07:00	
Dibromofluoromethane	1868-53-7	93%	42 – 143	02/29/2024 07:00	
Toluene-d8	2037-26-5	105%	54 – 141	02/29/2024 07:00	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	6.3		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	93.7		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg9_NS-J_14.5	Collected	02/20/2024 15:28
Lab Sample ID	3346845014	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	12.1		mg/kg	0.99	SW846 6020A	5	02/23/2024 16:28	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	52.9	SW846 8260B	50	02/29/2024 05:39	BST	A
1,2-Dibromoethane	ND	ND	ug/kg	52.9	SW846 8260B	50	02/29/2024 05:39	BST	A
1,2-Dichloroethane	ND	ND	ug/kg	52.9	SW846 8260B	50	02/29/2024 05:39	BST	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	52.9	SW846 8260B	50	02/29/2024 05:39	BST	A
Benzene	91.2		ug/kg	52.9	SW846 8260B	50	02/29/2024 05:39	BST	A
Ethylbenzene	ND	ND	ug/kg	52.9	SW846 8260B	50	02/29/2024 05:39	BST	A
Isopropylbenzene	ND	ND	ug/kg	52.9	SW846 8260B	50	02/29/2024 05:39	BST	A
Naphthalene	ND	ND	ug/kg	106	SW846 8260B	50	02/29/2024 05:39	BST	A
Toluene	ND	ND	ug/kg	52.9	SW846 8260B	50	02/29/2024 05:39	BST	A
Total Xylenes	ND	ND	ug/kg	159	SW846 8260B	50	02/29/2024 05:39	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	71 – 146	02/29/2024 05:39	
4-Bromofluorobenzene	460-00-4	95.5%	46 – 138	02/29/2024 05:39	
Dibromofluoromethane	1868-53-7	92.7%	42 – 143	02/29/2024 05:39	
Toluene-d8	2037-26-5	106%	54 – 141	02/29/2024 05:39	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	14.9		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	85.1		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg30_NS-B_14.5	Collected	02/21/2024 09:20
Lab Sample ID	3346845015	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	3.7		mg/kg	1.0	SW846 6020A	5	02/23/2024 16:30	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	47.3	SW846 8260B	50	02/29/2024 05:59	BST	A
1,2-Dibromoethane	ND	ND	ug/kg	47.3	SW846 8260B	50	02/29/2024 05:59	BST	A
1,2-Dichloroethane	ND	ND	ug/kg	47.3	SW846 8260B	50	02/29/2024 05:59	BST	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	47.3	SW846 8260B	50	02/29/2024 05:59	BST	A
Benzene	ND	ND	ug/kg	47.3	SW846 8260B	50	02/29/2024 05:59	BST	A
Ethylbenzene	ND	ND	ug/kg	47.3	SW846 8260B	50	02/29/2024 05:59	BST	A
Isopropylbenzene	ND	ND	ug/kg	47.3	SW846 8260B	50	02/29/2024 05:59	BST	A
Naphthalene	ND	ND	ug/kg	94.7	SW846 8260B	50	02/29/2024 05:59	BST	A
Toluene	ND	ND	ug/kg	47.3	SW846 8260B	50	02/29/2024 05:59	BST	A
Total Xylenes	ND	ND	ug/kg	142	SW846 8260B	50	02/29/2024 05:59	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	102%	71 – 146	02/29/2024 05:59	
4-Bromofluorobenzene	460-00-4	99.1%	46 – 138	02/29/2024 05:59	
Dibromofluoromethane	1868-53-7	93.9%	42 – 143	02/29/2024 05:59	
Toluene-d8	2037-26-5	108%	54 – 141	02/29/2024 05:59	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	6.2		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	93.8		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	VES Bldg_NS-A_14.5	Collected	02/21/2024 10:35
Lab Sample ID	3346845016	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	6.8		mg/kg	1.1	SW846 6020A	5	02/23/2024 16:32	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	45.3	SW846 8260B	50	02/29/2024 06:19	BST	A
1,2-Dibromoethane	ND	ND	ug/kg	45.3	SW846 8260B	50	02/29/2024 06:19	BST	A
1,2-Dichloroethane	ND	ND	ug/kg	45.3	SW846 8260B	50	02/29/2024 06:19	BST	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	45.3	SW846 8260B	50	02/29/2024 06:19	BST	A
Benzene	ND	ND	ug/kg	45.3	SW846 8260B	50	02/29/2024 06:19	BST	A
Ethylbenzene	ND	ND	ug/kg	45.3	SW846 8260B	50	02/29/2024 06:19	BST	A
Isopropylbenzene	ND	ND	ug/kg	45.3	SW846 8260B	50	02/29/2024 06:19	BST	A
Naphthalene	ND	ND	ug/kg	90.6	SW846 8260B	50	02/29/2024 06:19	BST	A
Toluene	ND	ND	ug/kg	45.3	SW846 8260B	50	02/29/2024 06:19	BST	A
Total Xylenes	ND	ND	ug/kg	136	SW846 8260B	50	02/29/2024 06:19	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	71 – 146	02/29/2024 06:19	
4-Bromofluorobenzene	460-00-4	96%	46 – 138	02/29/2024 06:19	
Dibromofluoromethane	1868-53-7	92.8%	42 – 143	02/29/2024 06:19	
Toluene-d8	2037-26-5	106%	54 – 141	02/29/2024 06:19	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	9.0		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	91.0		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg9_NS-K_14.5	Collected	02/21/2024 12:45
Lab Sample ID	3346845017	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	592		mg/kg	1.1	SW846 6020A	5	02/23/2024 16:34	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	343	SW846 8260B	250	02/29/2024 07:21	BST	A
1,2-Dibromoethane	ND	ND	ug/kg	343	SW846 8260B	250	02/29/2024 07:21	BST	A
1,2-Dichloroethane	ND	ND	ug/kg	343	SW846 8260B	250	02/29/2024 07:21	BST	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	343	SW846 8260B	250	02/29/2024 07:21	BST	A
Benzene	ND	ND	ug/kg	343	SW846 8260B	250	02/29/2024 07:21	BST	A
Ethylbenzene	ND	ND	ug/kg	343	SW846 8260B	250	02/29/2024 07:21	BST	A
Isopropylbenzene	ND	ND	ug/kg	343	SW846 8260B	250	02/29/2024 07:21	BST	A
Naphthalene	4980		ug/kg	685	SW846 8260B	250	02/29/2024 07:21	BST	A
Toluene	ND	ND	ug/kg	343	SW846 8260B	250	02/29/2024 07:21	BST	A
Total Xylenes	ND	ND	ug/kg	1030	SW846 8260B	250	02/29/2024 07:21	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104%	71 – 146	02/29/2024 07:21	
4-Bromofluorobenzene	460-00-4	92.1%	46 – 138	02/29/2024 07:21	
Dibromofluoromethane	1868-53-7	96%	42 – 143	02/29/2024 07:21	
Toluene-d8	2037-26-5	102%	54 – 141	02/29/2024 07:21	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	14.5		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	85.5		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Results

Client Sample ID	Bldg6_NS-B_14.5	Collected	02/19/2024 11:45
Lab Sample ID	3346845018	Lab Receipt	02/22/2024 09:19

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	3.4		mg/kg	0.96	SW846 6020A	5	02/23/2024 16:36	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	52.5	SW846 8260B	50	02/29/2024 06:40	BST	A
1,2-Dibromoethane	ND	ND	ug/kg	52.5	SW846 8260B	50	02/29/2024 06:40	BST	A
1,2-Dichloroethane	ND	ND	ug/kg	52.5	SW846 8260B	50	02/29/2024 06:40	BST	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	52.5	SW846 8260B	50	02/29/2024 06:40	BST	A
Benzene	ND	ND	ug/kg	52.5	SW846 8260B	50	02/29/2024 06:40	BST	A
Ethylbenzene	ND	ND	ug/kg	52.5	SW846 8260B	50	02/29/2024 06:40	BST	A
Isopropylbenzene	ND	ND	ug/kg	52.5	SW846 8260B	50	02/29/2024 06:40	BST	A
Naphthalene	ND	ND	ug/kg	105	SW846 8260B	50	02/29/2024 06:40	BST	A
Toluene	ND	ND	ug/kg	52.5	SW846 8260B	50	02/29/2024 06:40	BST	A
Total Xylenes	ND	ND	ug/kg	158	SW846 8260B	50	02/29/2024 06:40	BST	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	101%	71 – 146	02/29/2024 06:40	
4-Bromofluorobenzene	460-00-4	95.7%	46 – 138	02/29/2024 06:40	
Dibromofluoromethane	1868-53-7	92.5%	42 – 143	02/29/2024 06:40	
Toluene-d8	2037-26-5	108%	54 – 141	02/29/2024 06:40	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	5.4		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A
Total Solids	94.6		%	0.1	S2540G-11	1	02/23/2024 14:42	LMD	A

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3346845001	Bldg9_NS-A_14.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845002	Bldg9_NS-B_14.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845003	Bldg9_NS-C_12.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845004	Bldg9_NS-D_9.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845005	Bldg9_NS-E_14.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845006	Bldg6_NS-A_13.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845007	Bldg12_NS-A_14.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845008	Bldg12_NS-B_14.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845009	Bldg30_NS-A_14.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845010	Bldg9_NS-F_14.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845011	Bldg9_NS-G_14.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845012	Bldg9_NS-H_14.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845013	Bldg9_NS-I_11.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845014	Bldg9_NS-J_14.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845015	Bldg30_NS-B_14.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845016	VES Bldg_NS-A_14.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	
3346845017	Bldg9_NS-K_14.5	SW846 6020A SW846 8260B S2540G-11	SW846 3051A SW846 5035A N/A	

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3346845018	Bldg6_NS-B_14.5	SW846 6020A	SW846 3051A	
		SW846 8260B	SW846 5035A	
		S2540G-11	N/A	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Anepanayi Mt eyhi o	Anep dayPh	Anep Daye34sme	dc	r Malc6s6 t eyhi o	r Mc dayPh
885015Bgg9	dlo_N-. SW-952B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG39G3GgG5 9gE5g . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N
885015BggG	dlo_N-. SW-952B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9955800 . 3-	gG3G83GgG5 g9Eg1 gG39G3GgG5 99E5N . 3-	r. . F4H	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 995580C 995588N
885015Bgg8	dlo_N-. SW-9G2B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9955800 . 3-	gG3G83GgG5 g9Eg1 gG39G3GgG5 95EgG . 3-	r. . F4H	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 995580C 995588N
885015Bgg5	dlo_N-. SW0-N2B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9955800 . 3-	gG3G83GgG5 g9Eg1 gG39B3GgG5 98EB1 . 3-	r. . F4H	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 995580C 995588N
885015BggB	dlo_N-. SW-952B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG3903GgG5 99EgB . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N
885015Bgg0	dlo_0-. SW-982B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG3903GgG5 98EEB . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N
885015BggC	dlo_9G-. SW-952B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG39N3GgG5 gNEBB . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N
885015Bgg1	dlo_9G-. SW-952B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG39N3GgG5 9gEGC . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N
885015BggN	dlo_8g-. SW-952B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG3Gg3GgG5 gNEgG . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N
885015Bg9g	dlo_N-. SWK-952B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG3Gg3GgG5 99E9C . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N
885015Bg99	dlo_N-. SW7-952B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG3Gg3GgG5 9GEgB . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N
885015Bg9G	dlo_N-. SWM-952B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG3Gg3GgG5 9GEBC . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N
885015Bg98	dlo_N-. SW-992B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG3Gg3GgG5 95EBB . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N
885015Bg95	dlo_N-. SW7-952B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG3Gg3GgG5 9BEG1 . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N
885015Bg9B	dlo_8g-. SW-952B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG3G93GgG5 gNEGg . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N
885015Bg90	f VS dlo_-. SW-952B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG3G93GgG5 9gEBB . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N
885015Bg9C	dlo_N-. SW-952B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG3G93GgG5 9GE5B . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N
885015Bg91	dlo_0-. SW-952B	S/ 150 8gB9r S/ 150 Bg8Br . 3-	99581NN 9951GG0 . 3-	gG3G83GgG5 g9Eg1 gG39N3GgG5 99E5B . 3-	r. . dS4	S/ 150 0gGgr S/ 150 1G0gd SGB5g7 W99	995589C 9951GGC 995588N

301 Fulling Mill Rd, Suite A
Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 3346845
Logged By: MJE
PM: SSL
ALS Quote #:
of

Client Name: Montrose Environmental
Address: 500 Horizon Drive, Suite 540
Robbinsville, NJ 08691
Contact: [redacted]@montrose-env.com
Phone#: [redacted]
Project Name/#: DSCP VI Investigation / 11235-07
Bill To: Montrose
Purchase Order #: 11235-07
TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.
Date Required: Approved?
Email? [X] [redacted]@montrose-env.com

	Container Type	Container Size	Preservative
	CG	40 mL	MeOH
	CG	4 oz	None

Orthophosphate Filtered? Yes (No) Hexavalent Chromium Filtered? Yes (No)

ANALYSIS / METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	SDWA Sample Type (see key)	*G or C	**Matrix (See bottom of COC)	8260B Short List Leaded Gas	6010B Lead (Total)	
							Enter Number of Containers Per Sample or Field Results Below.		
1	Bldg 9_NS-A_14.5	02/12/24	1040		G	S	x1	1x	MJE 2/22/24
2	Bldg 9_NS-B_14.5	02/12/24	1149		G	S	x	1x	
3	Bldg 9_NS-C_12.5	02/12/24	1402		G	S	x	x	
4	Bldg 9_NS-D_9.5	02/15/24	1358		G	S	x	x	
5	Bldg 9_NS-E_14.5	02/16/24	1105		G	S	x	x	
6	Bldg 6_NS-A_13.5	02/16/24	1325		G	S	x	x	
7	Bldg 12_NS-A_14.5	02/19/24	0935		G	S	x	x	
8	Bldg 12_NS-B_14.5	02/19/24	1027		G	S	x	x	
9	Bldg 6_NS-B_14.5	02/19/24	1145		G	S	x	x	
10	Bldg 30_NS-A_14.5	02/20/24	0902		G	S	x	x	

Circle Sample Collector: ALS Tech / (Client)
Name: Mike Johnson ID:

Comments: 8260B: 1 40 mL clear glass, MeOH
6010B: 1 4oz clear glass, no preservative

Date:	Time		Relinquished By / Company Name		Received By / Company Name
2/21/24	1520	1	Mike Johnson / Montrose	2	Fedex
2/22/24	919	3	Fedex	4	[redacted]
		5		6	
		7		8	
		9		10	

Temp Taken By: [redacted] Therm ID: 570 WO Temp (°C) 3°C
Receipt Info completed by: [redacted]
WV Containers 0-6°C Y N (NA)
Cooler Custody Seals Intact Y N (NA)
Sample Custody Seal Intact Y N (NA)
Received on Ice Y N NA
Coolers & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA only: Trip Blank Y N (NA)
NJ ≤ 4 days? Y (N)
Courier/Tracking # 271258311082
Deviations (NO) YES
If YES, list below
Client contact:
Date/Tech
Sample(s) for Radiation testing? Y (N) Rad Screen (uCi)
Reportable SDWA Sample(s)? Y (N) New Source? Y (N)
SDWA State of Origin?
New Source Contact:
PWSID #
PWS Contact: PWS Phone #:

SDWA Sample Type Key: D=Distribution E=Entry Point R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks

Contains Short Hold Testing YES NO
Internal Use: If less than 48 hours - notify lab upon receipt

Data Deliverables: [X] Standard Lvl 2; [ ] Standard Lvl 1, Standard Lvl 3, Standard Lvl 4, CLP-like, DOD, NJ RED, NJ Full, HSCA, Landfill, NJ GW
EDDs: [X] Excel Summary; [ ] Equis, Custom
Sample Disposal: Lab [X] Special [ ]
EDDS: Format Type
State Samples Collected In: [ ] NY [X] NJ [X] PA [ ] WV [ ] FL [ ] other

* G=Grab; C=Composite **Matrix - A=Air; D=Drinking Water; GW=Groundwater; O=Oil; LW=Liquid Waste; S=Solid/Soil/Sludge; SW=Surface Water; WP=Wipe; WW=Wastewater

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Rev 07.06.2023

271258311082

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Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 23346845 of
ALS Quote #: QC94456

Client Name: Montrose Environmental
Address: 500 Horizon Drive, Suite 540
Robbinsville, NJ 08691
Contact: [redacted]@montrose-env.com
Phone#: [redacted]
Project Name/#: DSCP VI Investigation / 11235-07
Bill To: Montrose
Purchase Order #: 11235-07
TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.
Date Required: Approved?
Email? [Y] [redacted]@montrose-env.com

	Container Type	CG	CG								
	Container Size	40 mL	4 oz								
	Preservative	MeOH	None								

Orthophosphate Filtered? Yes (No) Hexavalent Chromium Filtered? Yes (No)

ANALYSIS / METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	SDWA Sample Type (see key)	*G or C	**Matrix (See bottom of COC)	8260B PADEP Short List Leaded Gas	6010B Lead (Total)								
							Enter Number of Containers Per Sample or Field Results Below.									
1	Bldg 9_NS-F_14.5	02/20/24	1117		G	S	1x	1x								
2	Bldg 9_NS-G_14.5	02/20/24	1205		G	S	x	x								
3	Bldg 9_NS-H_14.5	02/20/24	1237		G	S	x	x								
4	Bldg 9_NS-I_11.5	02/20/24	1435		G	S	x	x								
5	Bldg 9_NS-J_14.5	02/20/24	1528		G	S	x	x								
6	Bldg 30_NS-B_14.5	02/21/24	0920		G	S	x	x								
7	VES Bldg_NS-A_14.5	02/21/24	1035		G	S	x	x								
8	Bldg 9_NS-K_14.5	02/21/24	1245		G	S	x	x								
9																
10																

[redacted] 2/22/24

Circle Sample Collector: ALS Tech / Client
Name: Mike Johnson ID:

Comments: 8260B = 1 40 mL clear glass, MeOH
6010B = 1 4 oz clear glass, no preservative

Date:	Time		Relinquished By / Company Name		Received By / Company Name
2/21/24	1520	1	Mike Johnson / Montrose	2	FedEx
2/22/24	919	3	FedEx	4	[redacted]
		5		6	
		7		8	
		9		10	

Receipt Information (completed by Receiving Lab)
Temp Taken By: Therm ID: WO Temp (°C)
Receipt Info completed by: WV Containers 0-6°C Y N NA

Cooler Custody Seals Intact	Y	N	NA
Sample Custody Seal Intact	Y	N	NA
Received on Ice	Y	N	NA
Coolers & Samples Intact	Y	N	
Correct Containers Provided	Y	N	
Sample Label/COC Agree	Y	N	
Adequate Sample Volumes	Y	N	
VOA only: Trip Blank	Y	N	NA

NJ ≤ 4 days? Y N
Courier/Tracking #

Deviations? NO YES
If YES, list below.
Client contact:
Date/Tech:

Sample(s) for Radiation testing? Y N Rad Screen (uCi)
Reportable SDWA Sample(s)? Y N New Source? Y N
SDWA State of Origin? New Source Contact:
PWSID #
PWS Contact: PWS Phone #:

SDWA Sample Type Key: D=Distribution E=Entry Point R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks

Contains Short Hold Testing YES NO
Internal Use: If less than 48 hours - notify lab upon receipt

Data Deliverables: [ ] Standard Lvl 1 [ ] CLP-like [ ] HSCA; [X] Standard Lvl 2 [ ] DOD [ ] Landfill; [ ] Standard Lvl 3 [ ] NJ RED [ ] NJ GW; [ ] Standard Lvl 4 [ ] NJ Full [ ] _____

EDDs: [X] Excel Summary [ ] Equis [ ] Custom

Sample Disposal: Lab [X] Special [ ]

EDDS: Format Type

State Samples Collected In: [ ] NY [ ] NJ [X] PA [ ] WV [ ] FL [ ] other

* G=Grab, C=Composite **Matrix - A=Air, D=Drinking Water, GW=Groundwater, O=Oil, LW=Liquid Waste, S=Solid/Soil/Sludge, SW=Surface Water, WP=Wipe, WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, Suite A, Middletown, PA 17057

Rev 07.06.2023

ALSI BOTTLE REQUEST FORM

Order ID:	240202031	Date Due:	02/02/24	Completed:	
		Time Due:	15:00		

Date Ordered:	02/02/24	Company Name:	Montrose Environmental
Time Ordered:	09:28	Requested By:	[redacted]
Order Taken By:	[redacted]	Project Name/No.:	Q914156 PA Leaded-Montrose Env.

Method of Delivery:	Fed Ex Ground	Additional Supplies	Labels Project Specific Labels (See Notes) Chain of Custodies - 5 Coolers Syringes - 45
Address:	Montrose Environmental c/o Chuck Rogers-Building across from Uhaul 2990A S 20th St Philadelphia, PA 19145		
Attn:	[redacted]		
Phone:	[redacted]		

# of Bot.	# in Set	Size	Type	Preservation	Analyses
45	1	40 mL	C - Clear Glass	MeOH	PA LEADED GAS SOIL
45	1	4 oz	C - Clear Glass	None	LEAD SOIL

Special Notes		Sample Point ID's	

ID	Tracking Number	ID	Tracking Number	ID	Tracking Number

[redacted]

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343, NJ PA101

Analytical Results Report For

Montrose Environmental fka PARS Env

Project DSCP VI Investigation
Workorder [redacted]
Report ID 307523 on 3/14/2024

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Mar 01, 2024.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Sarah Leung (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
[redacted] - Montrose Environmental fka PARS Env
[redacted] - PARS Environmental

[redacted]

(ALS Digital Signature)

[redacted]
Project Coordinator

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3348277001	Hotel_NS-A_7.5	Solid	02/28/2024 12:14	03/01/2024 19:30	CBC	Collected By Client
3348277002	Hotel_NS-B_7.5	Solid	02/28/2024 14:19	03/01/2024 19:30	CBC	Collected By Client
3348277003	PAgnesS+NS-A_13.5	Solid	02/28/2024 15:15	03/01/2024 19:30	CBC	Collected By Client
3348277004	PAgnesS+NS-B_7.5	Solid	02/29/2024 09:10	03/01/2024 19:30	CBC	Collected By Client
3348277005	Bldg E_NS-A_9.5	Solid	02/29/2024 12:20	03/01/2024 19:30	CBC	Collected By Client
3348277006	Bldg E_NS-B_10.5	Solid	03/01/2024 10:15	03/01/2024 19:30	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136, including but not limited to the following EPA Method reference revisions:
  EPA 300.1 Rev. 1.0-1997
  EPA 300.0 Rev. 2.1-1993
  EPA 353.2 Rev. 2.0-1993
  EPA 410.4 Rev. 1.0-1993
  EPA 420.4 Rev. 1.0-1993
  EPA 365.1 Rev. 2.0-1993
  EPA 200.7 Rev. 4.4-1994
  EPA 200.8 Rev. 5.4-1994
  EPA 245.1 Rev. 3.0-1994
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.

Detected Results Summary

Client Sample ID	Hotel_NS-A_7.5	Collected	02/28/2024 12:14
Lab Sample ID	3348277001	Lab Receipt	03/01/2024 19:30

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	570	mg/kg	1.2	SW846 6020A	#
WET CHEMISTRY					
Moisture	15.3	%	0.1	S2540G-11	#
Total Solids	84.7	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Hotel_NS-B_7.5	Collected	02/28/2024 14:19
Lab Sample ID	3348277002	Lab Receipt	03/01/2024 19:30

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	724	mg/kg	1.3	SW846 6020A	#
WET CHEMISTRY					
Moisture	28.0	%	0.1	S2540G-11	#
Total Solids	72.0	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	PAgnesS+NS-A_13.5	Collected	02/28/2024 15:15
Lab Sample ID	3348277003	Lab Receipt	03/01/2024 19:30

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	11.0	mg/kg	1.2	SW846 6020A	#
WET CHEMISTRY					
Moisture	18.3	%	0.1	S2540G-11	#
Total Solids	81.7	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	PAgnesS+NS-B_7.5	Collected	02/29/2024 09:10
Lab Sample ID	3348277004	Lab Receipt	03/01/2024 19:30

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	73.8	mg/kg	1.1	SW846 6020A	#
WET CHEMISTRY					
Moisture	15.9	%	0.1	S2540G-11	#
Total Solids	84.1	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg E_NS-A_9.5	Collected	02/29/2024 12:20
Lab Sample ID	3348277005	Lab Receipt	03/01/2024 19:30

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	1.4	mg/kg	0.98	SW846 6020A	#
WET CHEMISTRY					
Moisture	4.1	%	0.1	S2540G-11	#
Total Solids	95.9	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	Bldg E_NS-B_10.5	Collected	03/01/2024 10:15
Lab Sample ID	3348277006	Lab Receipt	03/01/2024 19:30

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	2.9	mg/kg	1.0	SW846 6020A	#
WET CHEMISTRY					
Moisture	7.6	%	0.1	S2540G-11	#
Total Solids	92.4	%	0.1	S2540G-11	#

Results

Client Sample ID	Hotel_NS-A_7.5	Collected	02/28/2024 12:14
Lab Sample ID	3348277001	Lab Receipt	03/01/2024 19:30

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	570		mg/kg	1.2	SW846 6020A	5	03/07/2024 18:46	[redacted]	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	65.3	SW846 8260B	50	03/11/2024 00:01	[redacted]	A
1,2-Dibromoethane	ND	ND	ug/kg	65.3	SW846 8260B	50	03/11/2024 00:01	[redacted]	A
1,2-Dichloroethane	ND	ND	ug/kg	65.3	SW846 8260B	50	03/11/2024 00:01	[redacted]	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	65.3	SW846 8260B	50	03/11/2024 00:01	[redacted]	A
Benzene	ND	ND	ug/kg	65.3	SW846 8260B	50	03/11/2024 00:01	[redacted]	A
Ethylbenzene	ND	ND	ug/kg	65.3	SW846 8260B	50	03/11/2024 00:01	[redacted]	A
Isopropylbenzene	ND	ND	ug/kg	65.3	SW846 8260B	50	03/11/2024 00:01	[redacted]	A
Naphthalene	ND	ND	ug/kg	131	SW846 8260B	50	03/11/2024 00:01	[redacted]	A
Toluene	ND	ND	ug/kg	65.3	SW846 8260B	50	03/11/2024 00:01	[redacted]	A
Total Xylenes	ND	ND	ug/kg	196	SW846 8260B	50	03/11/2024 00:01	[redacted]	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	87.6%	71 – 146	03/11/2024 00:01	
4-Bromofluorobenzene	460-00-4	101%	46 – 138	03/11/2024 00:01	
Dibromofluoromethane	1868-53-7	101%	42 – 143	03/11/2024 00:01	
Toluene-d8	2037-26-5	132%	54 – 141	03/11/2024 00:01	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	15.3		%	0.1	S2540G-11	1	03/05/2024 14:42	[redacted]	A
Total Solids	84.7		%	0.1	S2540G-11	1	03/05/2024 14:42	[redacted]	A

Results

Client Sample ID	Hotel_NS-B_7.5	Collected	02/28/2024 14:19
Lab Sample ID	3348277002	Lab Receipt	03/01/2024 19:30

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	724		mg/kg	1.3	SW846 6020A	5	03/07/2024 18:49	[redacted]	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	98.9	SW846 8260B	50	03/11/2024 00:22	[redacted]	A
1,2-Dibromoethane	ND	ND	ug/kg	98.9	SW846 8260B	50	03/11/2024 00:22	[redacted]	A
1,2-Dichloroethane	ND	ND	ug/kg	98.9	SW846 8260B	50	03/11/2024 00:22	[redacted]	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	98.9	SW846 8260B	50	03/11/2024 00:22	[redacted]	A
Benzene	ND	ND	ug/kg	98.9	SW846 8260B	50	03/11/2024 00:22	[redacted]	A
Ethylbenzene	ND	ND	ug/kg	98.9	SW846 8260B	50	03/11/2024 00:22	[redacted]	A
Isopropylbenzene	ND	ND	ug/kg	98.9	SW846 8260B	50	03/11/2024 00:22	[redacted]	A
Naphthalene	ND	ND	ug/kg	198	SW846 8260B	50	03/11/2024 00:22	[redacted]	A
Toluene	ND	ND	ug/kg	98.9	SW846 8260B	50	03/11/2024 00:22	[redacted]	A
Total Xylenes	ND	ND	ug/kg	297	SW846 8260B	50	03/11/2024 00:22	[redacted]	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104%	71 – 146	03/11/2024 00:22	
4-Bromofluorobenzene	460-00-4	100%	46 – 138	03/11/2024 00:22	
Dibromofluoromethane	1868-53-7	95.8%	42 – 143	03/11/2024 00:22	
Toluene-d8	2037-26-5	105%	54 – 141	03/11/2024 00:22	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	28.0		%	0.1	S2540G-11	1	03/05/2024 14:42	[redacted]	A
Total Solids	72.0		%	0.1	S2540G-11	1	03/05/2024 14:42	[redacted]	A

Results

Client Sample ID	PAgnesS+NS-A_13.5	Collected	02/28/2024 15:15
Lab Sample ID	3348277003	Lab Receipt	03/01/2024 19:30

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	11.0		mg/kg	1.2	SW846 6020A	5	03/07/2024 18:51	[redacted]	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 00:42	[redacted]	A
1,2-Dibromoethane	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 00:42	[redacted]	A
1,2-Dichloroethane	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 00:42	[redacted]	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 00:42	[redacted]	A
Benzene	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 00:42	[redacted]	A
Ethylbenzene	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 00:42	[redacted]	A
Isopropylbenzene	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 00:42	[redacted]	A
Naphthalene	ND	ND	ug/kg	104	SW846 8260B	50	03/11/2024 00:42	[redacted]	A
Toluene	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 00:42	[redacted]	A
Total Xylenes	ND	ND	ug/kg	157	SW846 8260B	50	03/11/2024 00:42	[redacted]	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105%	71 – 146	03/11/2024 00:42	
4-Bromofluorobenzene	460-00-4	101%	46 – 138	03/11/2024 00:42	
Dibromofluoromethane	1868-53-7	97.2%	42 – 143	03/11/2024 00:42	
Toluene-d8	2037-26-5	104%	54 – 141	03/11/2024 00:42	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	18.3		%	0.1	S2540G-11	1	03/05/2024 14:42	[redacted]	A
Total Solids	81.7		%	0.1	S2540G-11	1	03/05/2024 14:42	[redacted]	A

Results

Client Sample ID	PAgnesS+NS-B_7.5	Collected	02/29/2024 09:10
Lab Sample ID	3348277004	Lab Receipt	03/01/2024 19:30

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	73.8		mg/kg	1.1	SW846 6020A	5	03/07/2024 18:53	[redacted]	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 01:03	[redacted]	A
1,2-Dibromoethane	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 01:03	[redacted]	A
1,2-Dichloroethane	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 01:03	[redacted]	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 01:03	[redacted]	A
Benzene	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 01:03	[redacted]	A
Ethylbenzene	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 01:03	[redacted]	A
Isopropylbenzene	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 01:03	[redacted]	A
Naphthalene	ND	ND	ug/kg	104	SW846 8260B	50	03/11/2024 01:03	[redacted]	A
Toluene	ND	ND	ug/kg	52.2	SW846 8260B	50	03/11/2024 01:03	[redacted]	A
Total Xylenes	ND	ND	ug/kg	157	SW846 8260B	50	03/11/2024 01:03	[redacted]	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105%	71 – 146	03/11/2024 01:03	
4-Bromofluorobenzene	460-00-4	98.1%	46 – 138	03/11/2024 01:03	
Dibromofluoromethane	1868-53-7	95.1%	42 – 143	03/11/2024 01:03	
Toluene-d8	2037-26-5	104%	54 – 141	03/11/2024 01:03	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	15.9		%	0.1	S2540G-11	1	03/05/2024 14:42	[redacted]	A
Total Solids	84.1		%	0.1	S2540G-11	1	03/05/2024 14:42	[redacted]	A

Results

Client Sample ID	Bldg E_NS-A_9.5	Collected	02/29/2024 12:20
Lab Sample ID	3348277005	Lab Receipt	03/01/2024 19:30

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	1.4		mg/kg	0.98	SW846 6020A	5	03/07/2024 18:55	[redacted]	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	49.5	SW846 8260B	50	03/11/2024 01:24	[redacted]	A
1,2-Dibromoethane	ND	ND	ug/kg	49.5	SW846 8260B	50	03/11/2024 01:24	[redacted]	A
1,2-Dichloroethane	ND	ND	ug/kg	49.5	SW846 8260B	50	03/11/2024 01:24	[redacted]	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	49.5	SW846 8260B	50	03/11/2024 01:24	[redacted]	A
Benzene	ND	ND	ug/kg	49.5	SW846 8260B	50	03/11/2024 01:24	[redacted]	A
Ethylbenzene	ND	ND	ug/kg	49.5	SW846 8260B	50	03/11/2024 01:24	[redacted]	A
Isopropylbenzene	ND	ND	ug/kg	49.5	SW846 8260B	50	03/11/2024 01:24	[redacted]	A
Naphthalene	ND	ND	ug/kg	98.9	SW846 8260B	50	03/11/2024 01:24	[redacted]	A
Toluene	ND	ND	ug/kg	49.5	SW846 8260B	50	03/11/2024 01:24	[redacted]	A
Total Xylenes	ND	ND	ug/kg	148	SW846 8260B	50	03/11/2024 01:24	[redacted]	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104%	71 – 146	03/11/2024 01:24	
4-Bromofluorobenzene	460-00-4	98.9%	46 – 138	03/11/2024 01:24	
Dibromofluoromethane	1868-53-7	95.3%	42 – 143	03/11/2024 01:24	
Toluene-d8	2037-26-5	105%	54 – 141	03/11/2024 01:24	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	4.1		%	0.1	S2540G-11	1	03/05/2024 14:42	[redacted]	A
Total Solids	95.9		%	0.1	S2540G-11	1	03/05/2024 14:42	[redacted]	A

Results

Client Sample ID	Bldg E_NS-B_10.5	Collected	03/01/2024 10:15
Lab Sample ID	3348277006	Lab Receipt	03/01/2024 19:30

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	2.9		mg/kg	1.0	SW846 6020A	5	03/07/2024 19:03	[redacted]	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	49.0	SW846 8260B	50	03/11/2024 01:44	[redacted]	A
1,2-Dibromoethane	ND	ND	ug/kg	49.0	SW846 8260B	50	03/11/2024 01:44	[redacted]	A
1,2-Dichloroethane	ND	ND	ug/kg	49.0	SW846 8260B	50	03/11/2024 01:44	[redacted]	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	49.0	SW846 8260B	50	03/11/2024 01:44	[redacted]	A
Benzene	ND	ND	ug/kg	49.0	SW846 8260B	50	03/11/2024 01:44	[redacted]	A
Ethylbenzene	ND	ND	ug/kg	49.0	SW846 8260B	50	03/11/2024 01:44	[redacted]	A
Isopropylbenzene	ND	ND	ug/kg	49.0	SW846 8260B	50	03/11/2024 01:44	[redacted]	A
Naphthalene	ND	ND	ug/kg	98.0	SW846 8260B	50	03/11/2024 01:44	[redacted]	A
Toluene	ND	ND	ug/kg	49.0	SW846 8260B	50	03/11/2024 01:44	[redacted]	A
Total Xylenes	ND	ND	ug/kg	147	SW846 8260B	50	03/11/2024 01:44	[redacted]	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	106%	71 – 146	03/11/2024 01:44	
4-Bromofluorobenzene	460-00-4	98.4%	46 – 138	03/11/2024 01:44	
Dibromofluoromethane	1868-53-7	95.6%	42 – 143	03/11/2024 01:44	
Toluene-d8	2037-26-5	104%	54 – 141	03/11/2024 01:44	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	7.6		%	0.1	S2540G-11	1	03/05/2024 14:42	[redacted]	A
Total Solids	92.4		%	0.1	S2540G-11	1	03/05/2024 14:42	[redacted]	A

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3348277001	Hotel_NS-A_7.5	SW846 6020A	SW846 3051A	
		SW846 8260B	SW846 5035A	
		S2540G-11	N/A	
3348277002	Hotel_NS-B_7.5	SW846 6020A	SW846 3051A	
		SW846 8260B	SW846 5035A	
		S2540G-11	N/A	
3348277003	PAgnesS+NS-A_13.5	SW846 6020A	SW846 3051A	
		SW846 8260B	SW846 5035A	
		S2540G-11	N/A	
3348277004	PAgnesS+NS-B_7.5	SW846 6020A	SW846 3051A	
		SW846 8260B	SW846 5035A	
		S2540G-11	N/A	
3348277005	Bldg E_NS-A_9.5	SW846 6020A	SW846 3051A	
		SW846 8260B	SW846 5035A	
		S2540G-11	N/A	
3348277006	Bldg E_NS-B_10.5	SW846 6020A	SW846 3051A	
		SW846 8260B	SW846 5035A	
		S2540G-11	N/A	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Anepanayi Mt eyhi o	Anep dayPh	Anep Daye34sme	dc	r Malc8s8 t eyhi o	r Mc dayPh
22701HH__N	- i yel. 5 SW. H8B	S/ 07G2_BNr	NNB12_1	_23_G31_17 _g+__	t Et	S/ 07GG_1_r	NNB2B2_
		S/ 07GB_2Br	NNBGG__	_13103 1_17 N1+N7	dS4	S/ 07G01G_d	NNBGG_N
		53-	53-	53-		S1B7_9 WMN	NNBNH1_
22701HH__1	- i yel. 5 SWd. H8B	S/ 07G2_BNr	NNB12_1	_23_G31_17 _g+__	t Et	S/ 07GG_1_r	NNB2B2_
		S/ 07GB_2Br	NNBGG__	_13103 1_17 N7+Ng	dS4	S/ 07G01G_d	NNBGG_N
		53-	53-	53-		S1B7_9 WMN	NNBNH1_
22701HH__2	Ar f Me8Sw5 SW. N26B	S/ 07G2_BNr	NNB12_1	_23_G31_17 _g+__	t Et	S/ 07GG_1_r	NNB2B2_
		S/ 07GB_2Br	NNBGG__	_13103 1_17 NB+NB	dS4	S/ 07G01G_d	NNBGG_N
		53-	53-	53-		S1B7_9 WMN	NNBNH1_
22701HH__7	Ar f Me8Sw5 SWd. H8B	S/ 07G2_BNr	NNB12_1	_23_G31_17 _g+__	t Et	S/ 07GG_1_r	NNB2B2_
		S/ 07GB_2Br	NNBGG__	_13 1g31_17 _g+N_	dS4	S/ 07G01G_d	NNBGG_N
		53-	53-	53-		S1B7_9 WMN	NNBNH1_
22701HH__B	dlof E. 5 SW. g8B	S/ 07G2_BNr	NNB12_1	_23_G31_17 _g+__	t Et	S/ 07GG_1_r	NNB2B2_
		S/ 07GB_2Br	NNBGG__	_13 1g31_17 N1+1_	dS4	S/ 07G01G_d	NNBGG_N
		53-	53-	53-		S1B7_9 WMN	NNBNH1_
22701HH__G	dlof E. 5 SWd. N_6B	S/ 07G2_BNr	NNB12_1	_23_G31_17 _g+__	t Et	S/ 07GG_1_r	NNB2B2_
		S/ 07GB_2Br	NNBGG__	_23_N31_17 N_+NB	dS4	S/ 07G01G_d	NNBGG_N
		53-	53-	53-		S1B7_9 WMN	NNBNH1_

ALS

301 Fulling Mill Rd, Suite A
Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

3348277
Logged By: DXB
PM: SSL

COC ALS ____ of ____

Client Name: Montrose Environmental

Address: 500 Horizon Drive, Suite 540
Robbinsville, NJ 08691

Contac [redacted] @montrose-env.com

Phone#: [redacted]

Project Name/#: DSCP VI Investigation / 11235-07

Bill To: Montrose Environmental

Purchase Order #: 11235-07

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.

Date Required: Approved?

Email? [Y] [redacted] @montrose-env.com

	Container Type		
	Container Size	40 mL	4 oz
	Preservative	MeOH	None

Orthophosphate Filtered? Yes (No) Hexavalent Chromium Filtered? Yes (No)

ANALYSIS / METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	SDWA Sample Type (see key)	*G or C	**Matrix (See bottom of COC)	8260B Short List PADEP Leaded Gas	6010B Lead (Total)	Enter Number of Containers Per Sample or Field Results Below.
1	Hotel_NS-A_7.5	02/28/24	1214		G	S	X	X	
2	Hotel_NS-B_7.5	02/28/24	1410		G	S	X	X	
3	PAgnesS_NS-A_13.5	02/28/24	1515		G	S	X	X	
4	PAgnesS_NS-B_7.5	02/29/24	0910		G	S	X	X	
5	Bldg E_NS-A_9.5	02/29/24	1220		G	S	X	X	
6	Bldg E_NS-B_10.5	03/1/24	1015		G	S	X	X	
7									
8									
9									
10									

Circle Sample Collector: ALS Tech / (Client)
Name: Michael Johnson ID:

Comments: 8260B: 1 40mL clear Glass, MeOH
6010B: 1 4oz clear Glass, no preservative
P.E. Sample DPD 3/1/24

Date:	Time		Relinquished By / Company Name		Received By / Company Name
3/1/24	1245	1	[redacted] / Montrose	2	PEZ/ALS
3/1/24	1430	3	PEZ/ALS	4	[redacted]
3/1/24	1930	5	ALS	6	
		7		8	
		9		10	

* G=Grab; C=Composite **Matrix - A=Air; D=Drinking W ; SW=Surface Water; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, Suite A, Middletown, PA 17057

Temp Taken By: Therm ID: WO Temp (°C)

Temp By:	WO Temp (°C)	Therm ID
[redacted]	3°	870

Receipt Info Completed By: DPB

Cooler Custody Seal Intact	Y N NA
Sample Custody Seal Intact	Y N NA
Received on Ice	Y N NA
Cooler & Samples Intact	Y N
Correct Containers Provided	Y N
Sample Label/COC Agree	Y N
Adequate Sample Volumes	Y N
CR6 Samples Filtered	Y N NA
OP Samples Filtered	Y N NA
VOA Trip Blank	Y N NA
NJ≤ 4 Days?	Y N
Rad Screen (uCi)	
Courier/Tracking #:	
SDWA Compliance	Y N
PWSID	
WV Containers 0-6°C	Y N NA

ers 0-6°C Y N NA

Deviations? NO YES
If YES, list below

Client contact:
Date/Tech

Rad Screen (uCi)____

New Source? Y N

New Source Contact:

PWS Contact:____ PWS Phone #:____

SDWA Sample Type Key: D=Distribution E=Entry Point
R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks

Contains Short Hold Testing YES NO

Internal Use: If less than 48 hours - notify lab upon receipt

Data Deliverables

[ ] Standard Lvl 1	[ ] CLP-like	[ ] HSCA	
[X] Standard Lvl 2	[ ] DOD	[ ] Landfill	
[ ] Standard Lvl 3	[ ] NJ RED	[ ] NJ GW	
[ ] Standard Lvl 4	[ ] NJ Full	[ ] ____	

EDDs

[ ] Excel Summary	Sample Disposal		
[ ] Equis	Lab	[X]	
[ ] Custom	Special	[ ]	

EDDS: Format Type:

State Samples Collected In

[ ] NY [ ] NJ [X] PA [ ] WV [ ] FL [ ] other

Rev 07 06 2023

[redacted]

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343, NJ PA101

Analytical Results Report For

Montrose Environmental fka PARS Env

Project DSCP VI Investigation
Workorder [redacted]
Report ID 309758 on 3/22/2024

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Mar 08, 2024.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact [redacted]

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
[redacted]

[redacted]

(ALS Digital Signature)

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

[redacted]
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3349563001	PHA Gym_NS-A_11.5	Solid	03/01/2024 13:15	03/08/2024 20:25	CBC	Collected By Client
3349563002	PHA Gym_NS-B_12.5	Solid	03/01/2024 14:12	03/08/2024 20:25	CBC	Collected By Client
3349563003	STEEN_NS-A_13	Solid	03/06/2024 09:55	03/08/2024 20:25	CBC	Collected By Client
3349563004	STEEN_NS-B_14.5	Solid	03/06/2024 12:38	03/08/2024 20:25	CBC	Collected By Client

Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136, including but not limited to the following EPA Method reference revisions:
  EPA 300.1 Rev. 1.0-1997
  EPA 300.0 Rev. 2.1-1993
  EPA 353.2 Rev. 2.0-1993
  EPA 410.4 Rev. 1.0-1993
  EPA 420.4 Rev. 1.0-1993
  EPA 365.1 Rev. 2.0-1993
  EPA 200.7 Rev. 4.4-1994
  EPA 200.8 Rev. 5.4-1994
  EPA 245.1 Rev. 3.0-1994
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
1	Analyte was analyzed past the 7 day holding time.
2	Analyte was analyzed past the 6 hour holding time.

Detected Results Summary

Client Sample ID	PHA Gym_NS-A_11.5	Collected	03/01/2024 13:15
Lab Sample ID	3349563001	Lab Receipt	03/08/2024 20:25

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	7.6	mg/kg	0.96	SW846 6020A	#
WET CHEMISTRY					
Moisture	7.5	%	0.1	S2540G-11	#
Total Solids	92.5	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	PHA Gym_NS-B_12.5	Collected	03/01/2024 14:12
Lab Sample ID	3349563002	Lab Receipt	03/08/2024 20:25

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	7.7	mg/kg	1.1	SW846 6020A	#
WET CHEMISTRY					
Moisture	11.6	%	0.1	S2540G-11	#
Total Solids	88.4	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	STEEN_NS-A_13	Collected	03/06/2024 09:55
Lab Sample ID	3349563003	Lab Receipt	03/08/2024 20:25

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	5.1	mg/kg	0.96	SW846 6020A	#
VOLATILE ORGANICS					
1,3,5-Trimethylbenzene	45.5	ug/kg	42.1	SW846 8260B	#
WET CHEMISTRY					
Moisture	7.4	%	0.1	S2540G-11	#
Total Solids	92.6	%	0.1	S2540G-11	#

Detected Results Summary

Client Sample ID	STEEN_NS-B_14.5	Collected	03/06/2024 12:38
Lab Sample ID	3349563004	Lab Receipt	03/08/2024 20:25

Compound	Result	Units	RDL	Method	Flag
METALS					
Lead, Total	10.3	mg/kg	1.1	SW846 6020A	#
VOLATILE ORGANICS					
1,3,5-Trimethylbenzene	112	ug/kg	41.2	SW846 8260B	#
WET CHEMISTRY					
Moisture	14.9	%	0.1	S2540G-11	#
Total Solids	85.1	%	0.1	S2540G-11	#

Results

Client Sample ID	PHA Gym_NS-A_11.5	Collected	03/01/2024 13:15
Lab Sample ID	3349563001	Lab Receipt	03/08/2024 20:25

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	7.6		mg/kg	0.96	SW846 6020A	5	03/21/2024 17:01	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	56.1	SW846 8260B	50	03/11/2024 16:03	JTH	A
1,2-Dibromoethane	ND	ND	ug/kg	56.1	SW846 8260B	50	03/11/2024 16:03	JTH	A
1,2-Dichloroethane	ND	ND	ug/kg	56.1	SW846 8260B	50	03/11/2024 16:03	JTH	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	56.1	SW846 8260B	50	03/11/2024 16:03	JTH	A
Benzene	ND	ND	ug/kg	56.1	SW846 8260B	50	03/11/2024 16:03	JTH	A
Ethylbenzene	ND	ND	ug/kg	56.1	SW846 8260B	50	03/11/2024 16:03	JTH	A
Isopropylbenzene	ND	ND	ug/kg	56.1	SW846 8260B	50	03/11/2024 16:03	JTH	A
Naphthalene	ND	ND	ug/kg	112	SW846 8260B	50	03/11/2024 16:03	JTH	A
Toluene	ND	ND	ug/kg	56.1	SW846 8260B	50	03/11/2024 16:03	JTH	A
Total Xylenes	ND	ND	ug/kg	168	SW846 8260B	50	03/11/2024 16:03	JTH	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.7%	71 – 146	03/11/2024 16:03	
4-Bromofluorobenzene	460-00-4	106%	46 – 138	03/11/2024 16:03	
Dibromofluoromethane	1868-53-7	101%	42 – 143	03/11/2024 16:03	
Toluene-d8	2037-26-5	105%	54 – 141	03/11/2024 16:03	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	7.5		%	0.1	S2540G-11	1	03/12/2024 08:55	J1K	A
Total Solids	92.5	1	%	0.1	S2540G-11	1	03/12/2024 08:55	J1K	A

Results

Client Sample ID	PHA Gym_NS-B_12.5	Collected	03/01/2024 14:12
Lab Sample ID	3349563002	Lab Receipt	03/08/2024 20:25

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	7.7		mg/kg	1.1	SW846 6020A	5	03/21/2024 17:10	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	46.7	SW846 8260B	50	03/11/2024 16:23	JTH	A
1,2-Dibromoethane	ND	ND	ug/kg	46.7	SW846 8260B	50	03/11/2024 16:23	JTH	A
1,2-Dichloroethane	ND	ND	ug/kg	46.7	SW846 8260B	50	03/11/2024 16:23	JTH	A
1,3,5-Trimethylbenzene	ND	ND	ug/kg	46.7	SW846 8260B	50	03/11/2024 16:23	JTH	A
Benzene	ND	ND	ug/kg	46.7	SW846 8260B	50	03/11/2024 16:23	JTH	A
Ethylbenzene	ND	ND	ug/kg	46.7	SW846 8260B	50	03/11/2024 16:23	JTH	A
Isopropylbenzene	ND	ND	ug/kg	46.7	SW846 8260B	50	03/11/2024 16:23	JTH	A
Naphthalene	ND	ND	ug/kg	93.3	SW846 8260B	50	03/11/2024 16:23	JTH	A
Toluene	ND	ND	ug/kg	46.7	SW846 8260B	50	03/11/2024 16:23	JTH	A
Total Xylenes	ND	ND	ug/kg	140	SW846 8260B	50	03/11/2024 16:23	JTH	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	71 – 146	03/11/2024 16:23	
4-Bromofluorobenzene	460-00-4	99.9%	46 – 138	03/11/2024 16:23	
Dibromofluoromethane	1868-53-7	97.2%	42 – 143	03/11/2024 16:23	
Toluene-d8	2037-26-5	101%	54 – 141	03/11/2024 16:23	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	11.6		%	0.1	S2540G-11	1	03/12/2024 08:55	J1K	A
Total Solids	88.4	2	%	0.1	S2540G-11	1	03/12/2024 08:55	J1K	A

Results

Client Sample ID	STEEN_NS-A_13	Collected	03/06/2024 09:55
Lab Sample ID	3349563003	Lab Receipt	03/08/2024 20:25

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	5.1		mg/kg	0.96	SW846 6020A	5	03/21/2024 17:12	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	42.1	SW846 8260B	50	03/20/2024 15:55	JTH	A
1,2-Dibromoethane	ND	ND	ug/kg	42.1	SW846 8260B	50	03/20/2024 15:55	JTH	A
1,2-Dichloroethane	ND	ND	ug/kg	42.1	SW846 8260B	50	03/20/2024 15:55	JTH	A
1,3,5-Trimethylbenzene	45.5		ug/kg	42.1	SW846 8260B	50	03/20/2024 15:55	JTH	A
Benzene	ND	ND	ug/kg	42.1	SW846 8260B	50	03/20/2024 15:55	JTH	A
Ethylbenzene	ND	ND	ug/kg	42.1	SW846 8260B	50	03/20/2024 15:55	JTH	A
Isopropylbenzene	ND	ND	ug/kg	42.1	SW846 8260B	50	03/20/2024 15:55	JTH	A
Naphthalene	ND	ND	ug/kg	84.3	SW846 8260B	50	03/20/2024 15:55	JTH	A
Toluene	ND	ND	ug/kg	42.1	SW846 8260B	50	03/20/2024 15:55	JTH	A
Total Xylenes	ND	ND	ug/kg	126	SW846 8260B	50	03/20/2024 15:55	JTH	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	100%	71 – 146	03/20/2024 15:55	
4-Bromofluorobenzene	460-00-4	110%	46 – 138	03/20/2024 15:55	
Dibromofluoromethane	1868-53-7	94.4%	42 – 143	03/20/2024 15:55	
Toluene-d8	2037-26-5	103%	54 – 141	03/20/2024 15:55	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	7.4		%	0.1	S2540G-11	1	03/12/2024 08:55	J1K	A
Total Solids	92.6		%	0.1	S2540G-11	1	03/12/2024 08:55	J1K	A

Results

Client Sample ID	STEEN_NS-B_14.5	Collected	03/06/2024 12:38
Lab Sample ID	3349563004	Lab Receipt	03/08/2024 20:25

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Lead, Total	10.3		mg/kg	1.1	SW846 6020A	5	03/21/2024 17:14	MO	B1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,2,4-Trimethylbenzene	ND	ND	ug/kg	41.2	SW846 8260B	50	03/20/2024 16:15	JTH	A
1,2-Dibromoethane	ND	ND	ug/kg	41.2	SW846 8260B	50	03/20/2024 16:15	JTH	A
1,2-Dichloroethane	ND	ND	ug/kg	41.2	SW846 8260B	50	03/20/2024 16:15	JTH	A
1,3,5-Trimethylbenzene	112		ug/kg	41.2	SW846 8260B	50	03/20/2024 16:15	JTH	A
Benzene	ND	ND	ug/kg	41.2	SW846 8260B	50	03/20/2024 16:15	JTH	A
Ethylbenzene	ND	ND	ug/kg	41.2	SW846 8260B	50	03/20/2024 16:15	JTH	A
Isopropylbenzene	ND	ND	ug/kg	41.2	SW846 8260B	50	03/20/2024 16:15	JTH	A
Naphthalene	ND	ND	ug/kg	82.4	SW846 8260B	50	03/20/2024 16:15	JTH	A
Toluene	ND	ND	ug/kg	41.2	SW846 8260B	50	03/20/2024 16:15	JTH	A
Total Xylenes	ND	ND	ug/kg	124	SW846 8260B	50	03/20/2024 16:15	JTH	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	71 – 146	03/20/2024 16:15	
4-Bromofluorobenzene	460-00-4	101%	46 – 138	03/20/2024 16:15	
Dibromofluoromethane	1868-53-7	97.4%	42 – 143	03/20/2024 16:15	
Toluene-d8	2037-26-5	104%	54 – 141	03/20/2024 16:15	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	14.9		%	0.1	S2540G-11	1	03/12/2024 08:55	J1K	A
Total Solids	85.1		%	0.1	S2540G-11	1	03/12/2024 08:55	J1K	A

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3349563001	PHA Gym_NS-A_11.5	SW846 6020A	SW846 3051A	
		SW846 8260B	SW846 5035A	
		S2540G-11	N/A	
3349563002	PHA Gym_NS-B_12.5	SW846 6020A	SW846 3051A	
		SW846 8260B	SW846 5035A	
		S2540G-11	N/A	
3349563003	STEEN_NS-A_13	SW846 6020A	SW846 3051A	
		SW846 8260B	SW846 5035A	
		S2540G-11	N/A	
3349563004	STEEN_NS-B_14.5	SW846 6020A	SW846 3051A	
		SW846 8260B	SW846 5035A	
		S2540G-11	N/A	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3349563001	PHA Gym_NS-A_11.5	SW846 3051A	1156939	03/12/2024 09:00	MEM	SW846 6020A	1160411
		SW846 5035A	1156703	03/01/2024 13:15	JTH	SW846 8260B	1156704
		N/A	N/A	N/A		S2540G-11	1156920
3349563002	PHA Gym_NS-B_12.5	SW846 3051A	1156939	03/12/2024 09:00	MEM	SW846 6020A	1160411
		SW846 5035A	1156703	03/01/2024 14:12	JTH	SW846 8260B	1156704
		N/A	N/A	N/A		S2540G-11	1156920
3349563003	STEEN_NS-A_13	SW846 3051A	1156939	03/12/2024 09:00	MEM	SW846 6020A	1160411
		SW846 5035A	1159953	03/06/2024 09:55	JTH	SW846 8260B	1159954
		N/A	N/A	N/A		S2540G-11	1156920
3349563004	STEEN_NS-B_14.5	SW846 3051A	1156939	03/12/2024 09:00	MEM	SW846 6020A	1160411
		SW846 5035A	1159953	03/06/2024 12:38	JTH	SW846 8260B	1159954
		N/A	N/A	N/A		S2540G-11	1156920

301 Fulling Mill Rd, Suite A
Middletown, PA 17057
P. 717-944-5541

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

3349563
Logged By: DXB
PM: SSL

CO
ALS
of

Client Name: Montrose Environmental
Address: 500 Horizon Drive, Suite 540
Robbinsville, NJ 08691
Contact: [redacted] montrose-env.com
Phone#:
Project Name/#: DSCP VI Investigation / 11235-07
Bill To: Montrose
Purchase Order #: 11235-07
TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.
Date Required: Approved?
Email? [Y] [redacted] @montrose-env.com

	Container Type	CG	CG								
	Container Size	40 mL	4 oz								
	Preservative	HCl	None								

Orthophosphate Filtered? Yes (No) Hexavalent Chromium Filtered? Yes (No)

ANALYSIS / METHOD REQUESTED

	Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	SDWA Sample Type (see key)	*G or C	**Matrix (See bottom of COC)	8260B PADEP Short List Leader Gas	6010B Lead (Total)	Enter Number of Containers Per Sample or Field Results Below.								
1	PHA Gym_NS-A_11.5	3/1/24	1315		G	S	x	x									
2	PHA Gym_NS-B_12.5	3/1/24	1412		G	S	x	x									
3	STEEN_NS-A_13	3/6/24	0955		G	S	x	x									
4	STEEN_NS-B_14.5	3/6/24	1238		G	S	x	x									
5																	
6																	
7																	
8																	
9																	
10																	

Circle Sample Collector: ALS Tech / Client
Name: Mike Johnson ID:

Comments: 8260B = 1 40 mL glass, MeOH
6010B = 1 4 oz jar, no preservative

Date:	Time		Relinquished By / Company Name		Received By / Company Name
3/8/2024	1323	1	Joe Rounsaville/Montrose	2	PEZ/ALS
3/8/24	1430	3	PEZ/ALS	4	[redacted]
3/8/24	2005	5	UPS	6	
		7		8	
		9		10	

* G=Grab; C=Composite **Matrix - A=Air; D=Drinking Water; GW=Groundwater; O=Oil; LW=Liquid Waste; S=Solid/Soil/Sludge; SW=Surface Water; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, Suite A, Middletown, PA 17057

Rev 07.06.2023

Receipt Information (completed by Receiving Lab)

Temp Taken By: Therm ID: WO Temp (°C)

Temp By: [redacted] WO Temp (°C): 3° Therm ID: 510

Coolers 0-6°C Y N NA

Deviations? NO YES
If YES, list below

Receipt Info Completed By:	DPB
Cooler Custody Seal Intact	Y N NA
Sample Custody Seal Intact	Y N NA
Received on Ice	Y N NA
Cooler & Samples Intact	Y N
Correct Containers Provided	Y N
Sample Label/COC Agree	Y N
Adequate Sample Volumes	Y N
CR6 Samples Filtered	Y N NA
OP Samples Filtered	Y N NA
VOA Trip Blank	Y N NA
NJ≤ 4 Days?	Y N
Rad Screen (uCi)	
Courier/Tracking #:	
SDWA Compliance	Y N
PWSID	
WV Containers 0-6°C	Y N NA

Client contact:
Date/Tech

Rad Screen (uCi)

New Source? Y N

New Source Contact:

PWS Contact: PWS Phone #:

SDWA Sample Type Key: D=Distribution E=Entry Point
R=Raw P=Plant C=Check S=Special A=Annual Startup

Sample/COC Remarks

Contains Short Hold Testing YES NO

Internal Use: If less than 48 hours - notify lab upon receipt

Data Deliverables:
- [ ] Standard Lvl 1
- [X] Standard Lvl 2
- [ ] Standard Lvl 3
- [ ] Standard Lvl 4
- [ ] CLP-like
- [ ] DOD
- [ ] NJ RED
- [ ] NJ Full
- [ ] HSCA
- [ ] Landfill
- [ ] NJ GW

EDDs:
- [ ] Excel Summary
- [ ] Equis
- [ ] Custom

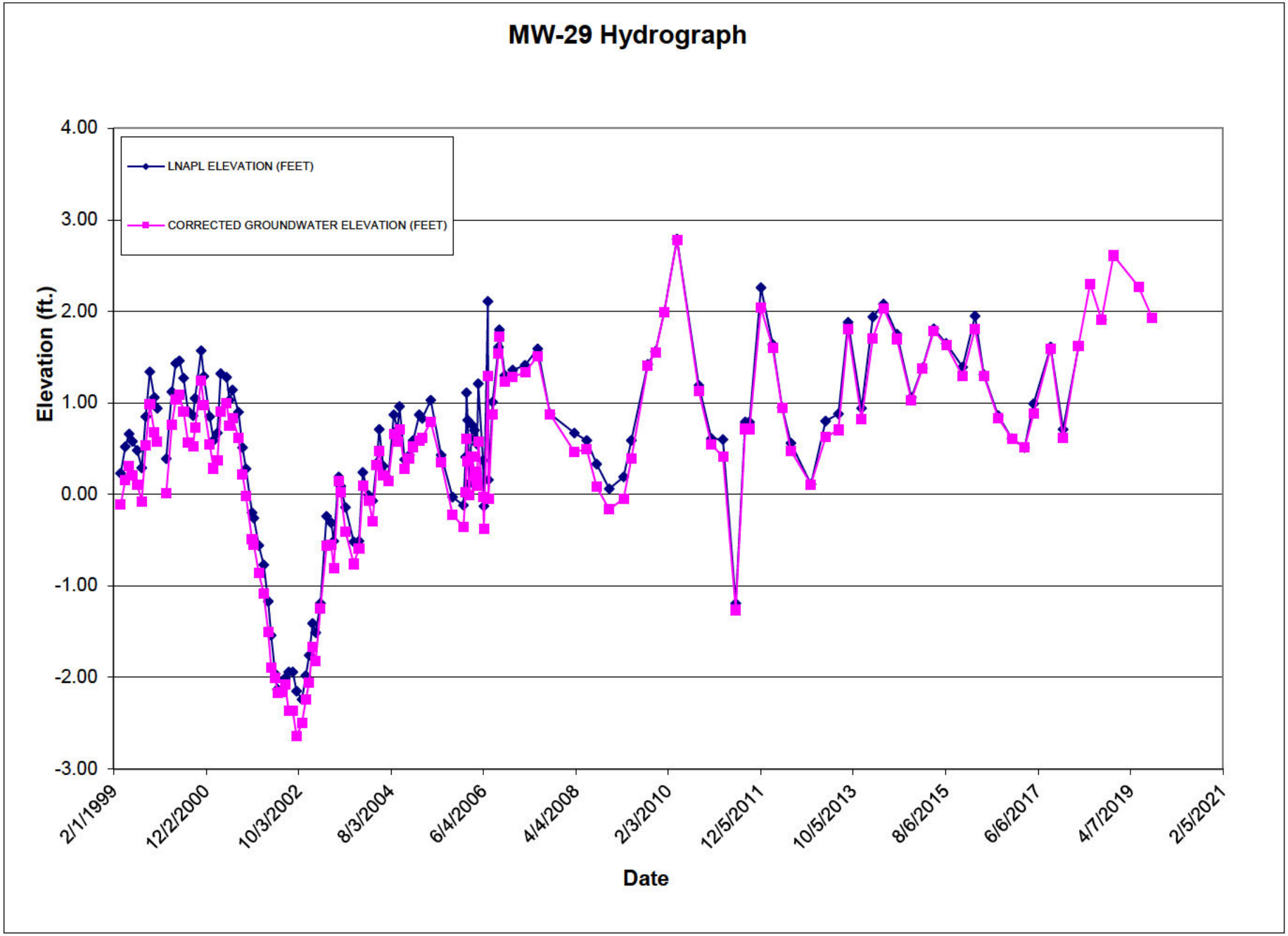
Sample Disposal: Lab [X] Special [ ]

EDDS: Format Type

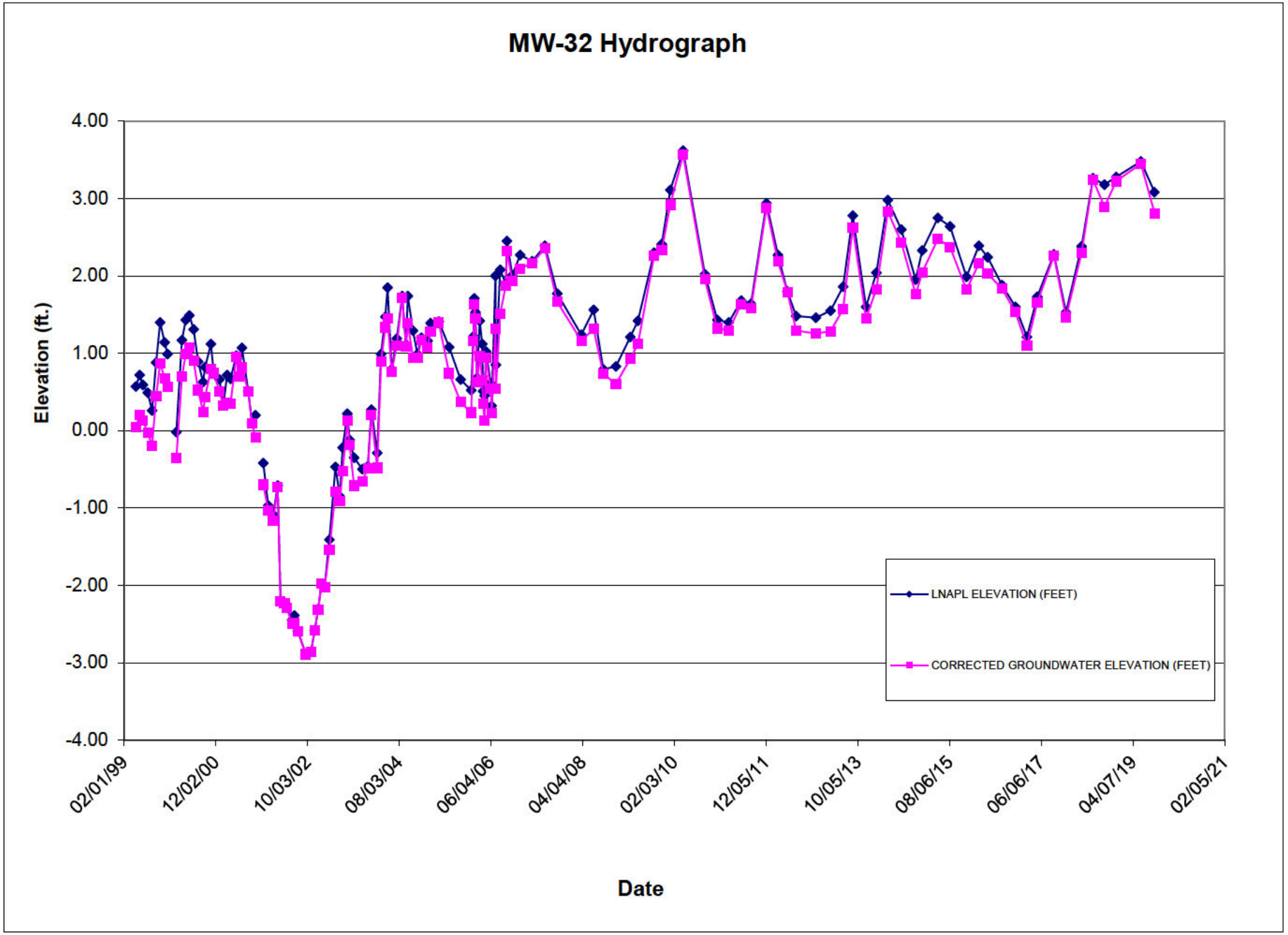
State Samples Collected In:
- [ ] NY
- [ ] NJ
- [X] PA
- [ ] WV
- [ ] FL
- [ ] other

Appendix H

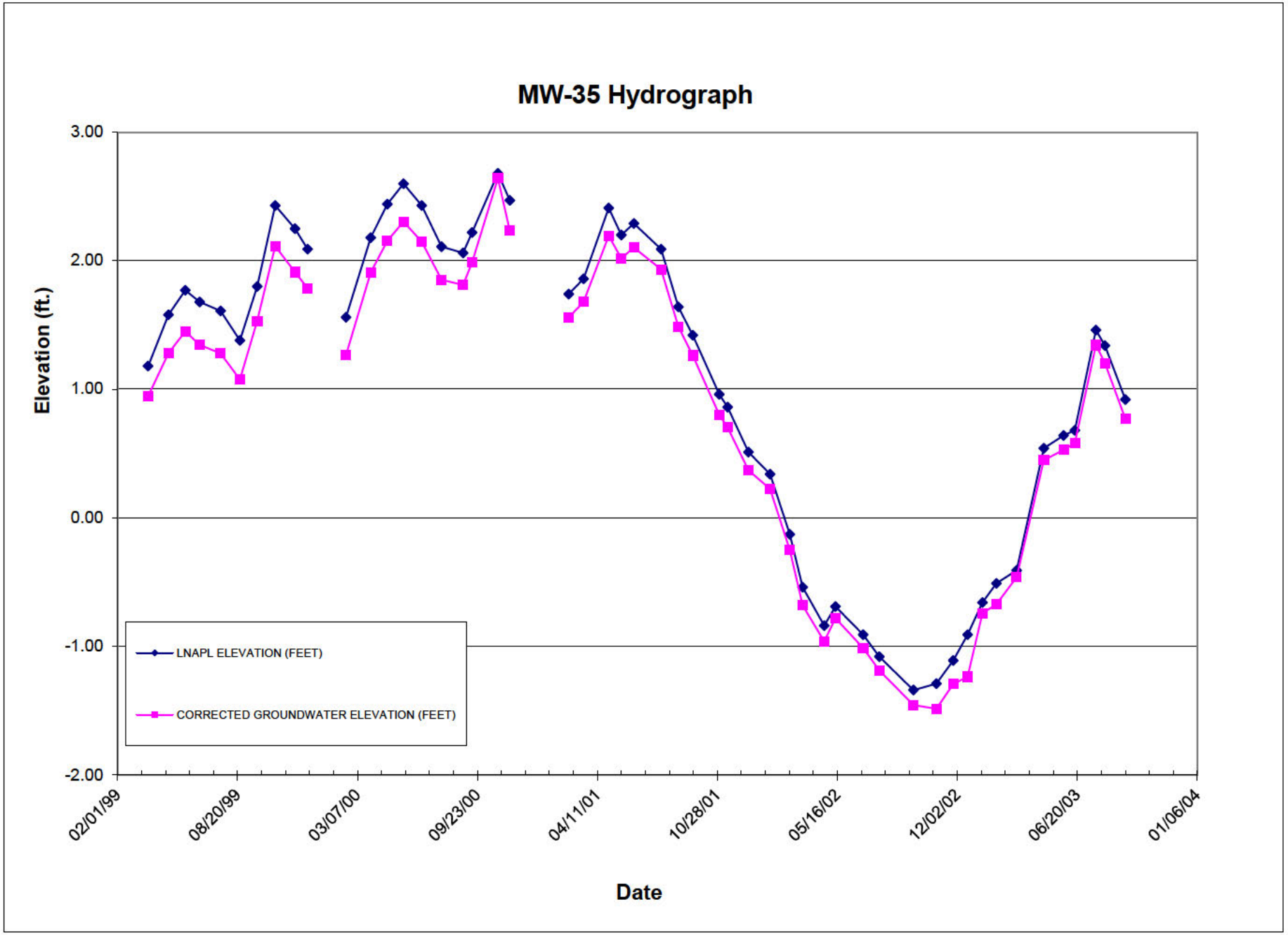
Hydrographs and Well Screens



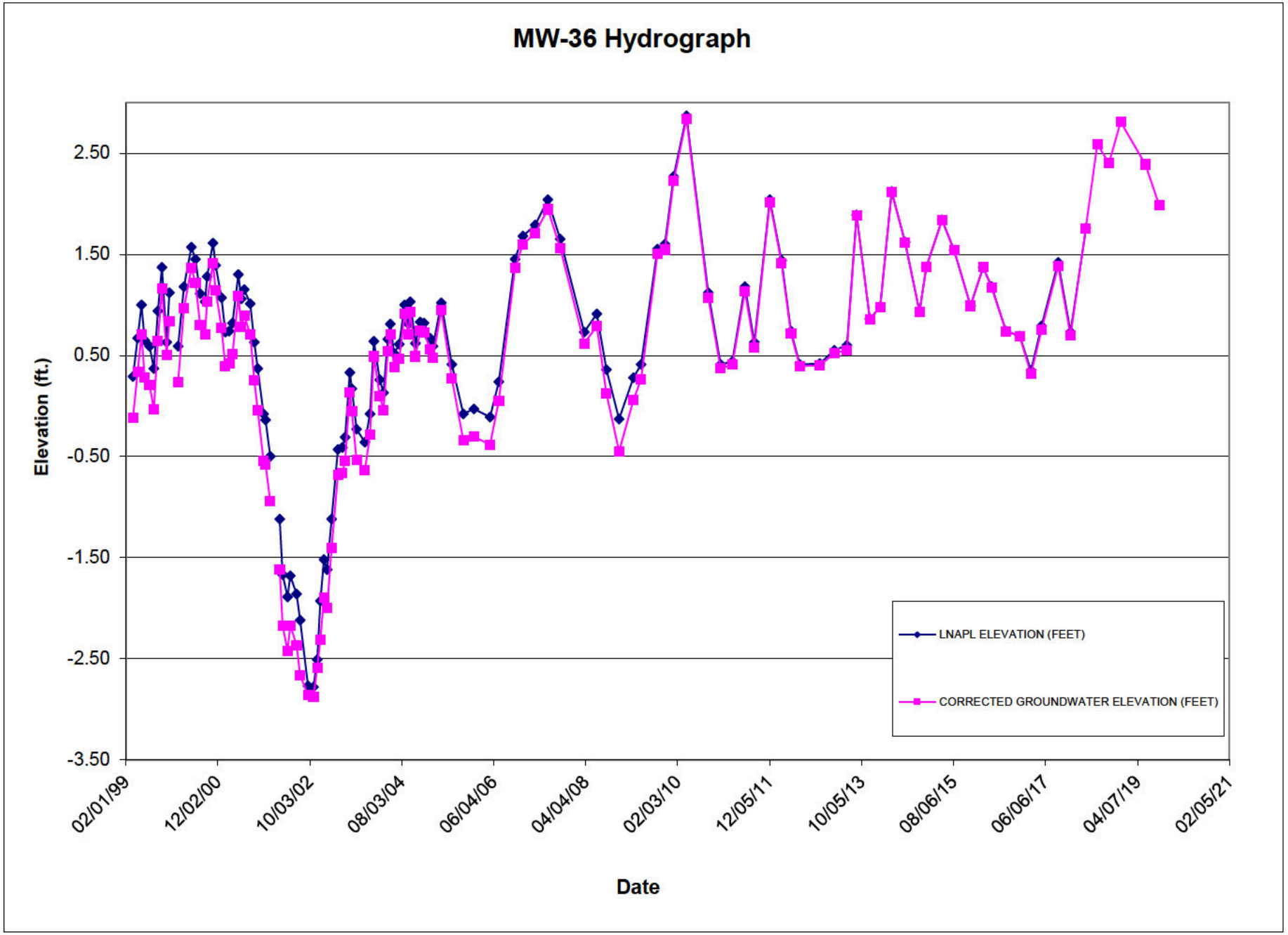
*GW El. corrected for presence of LNAPL using calculation outlined in report text.



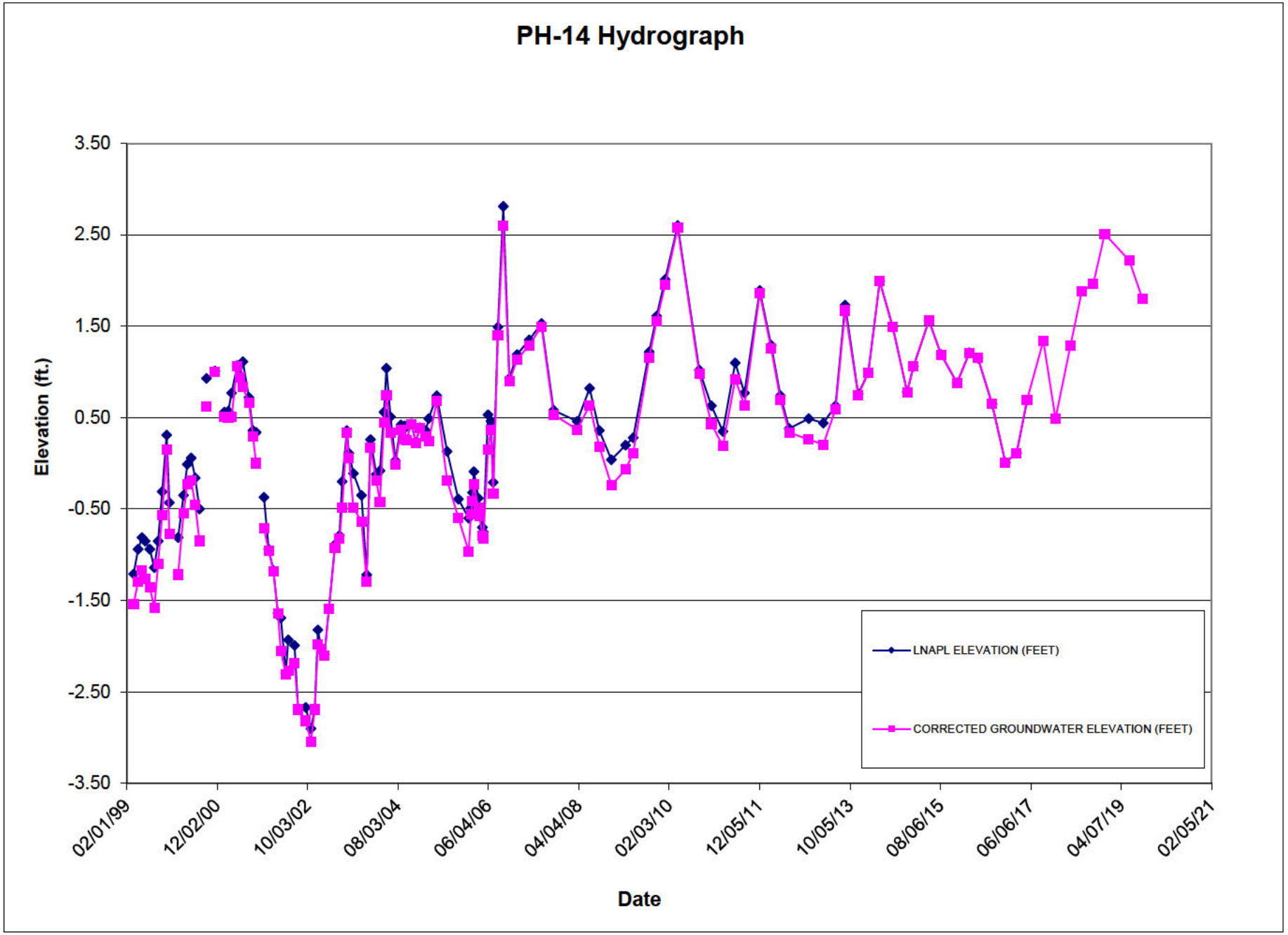
*GW El. corrected for presence of LNAPL using calculation outlined in report text.



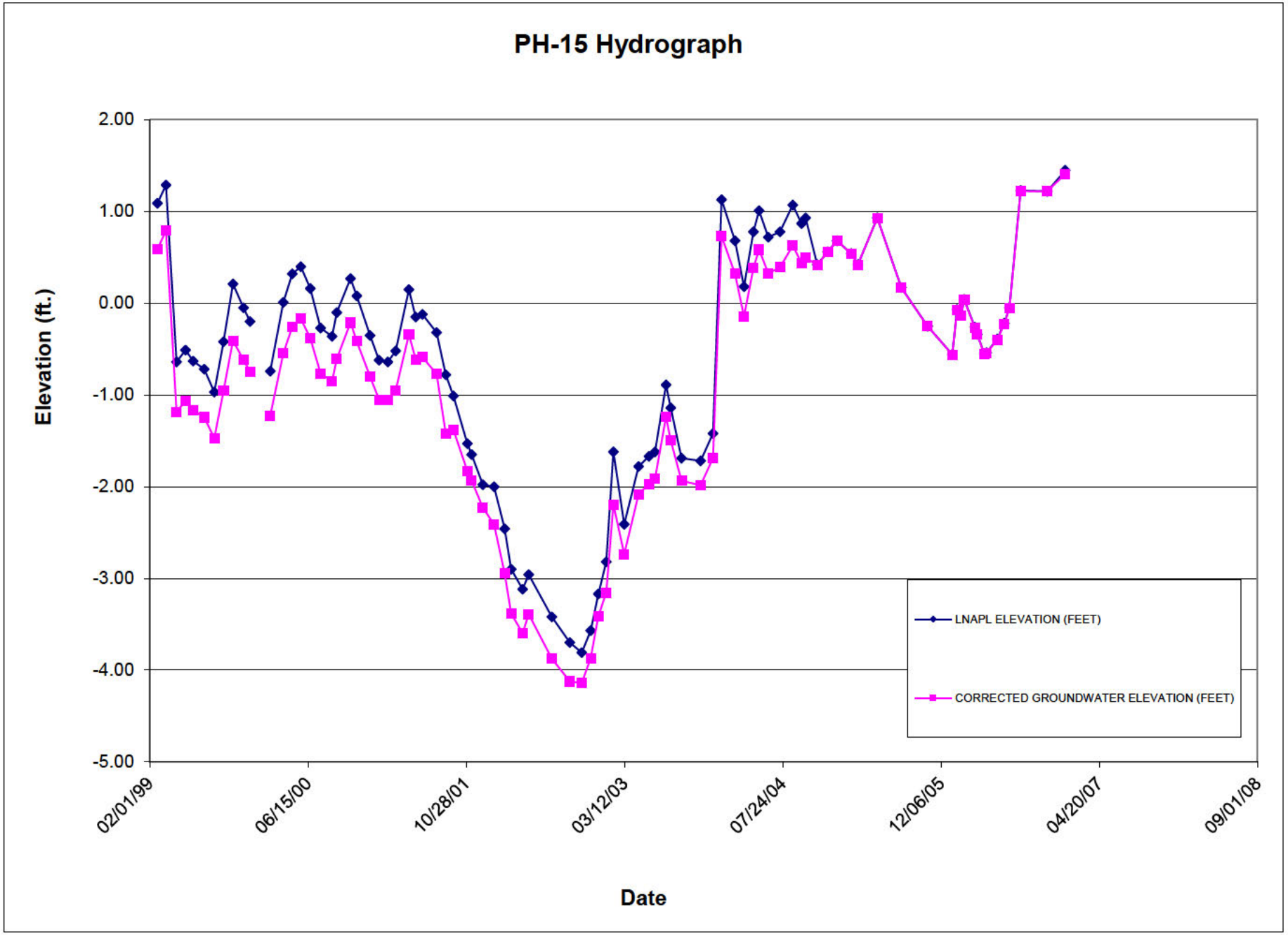
*GW El. corrected for presence of LNAPL using calculation outlined in report text.



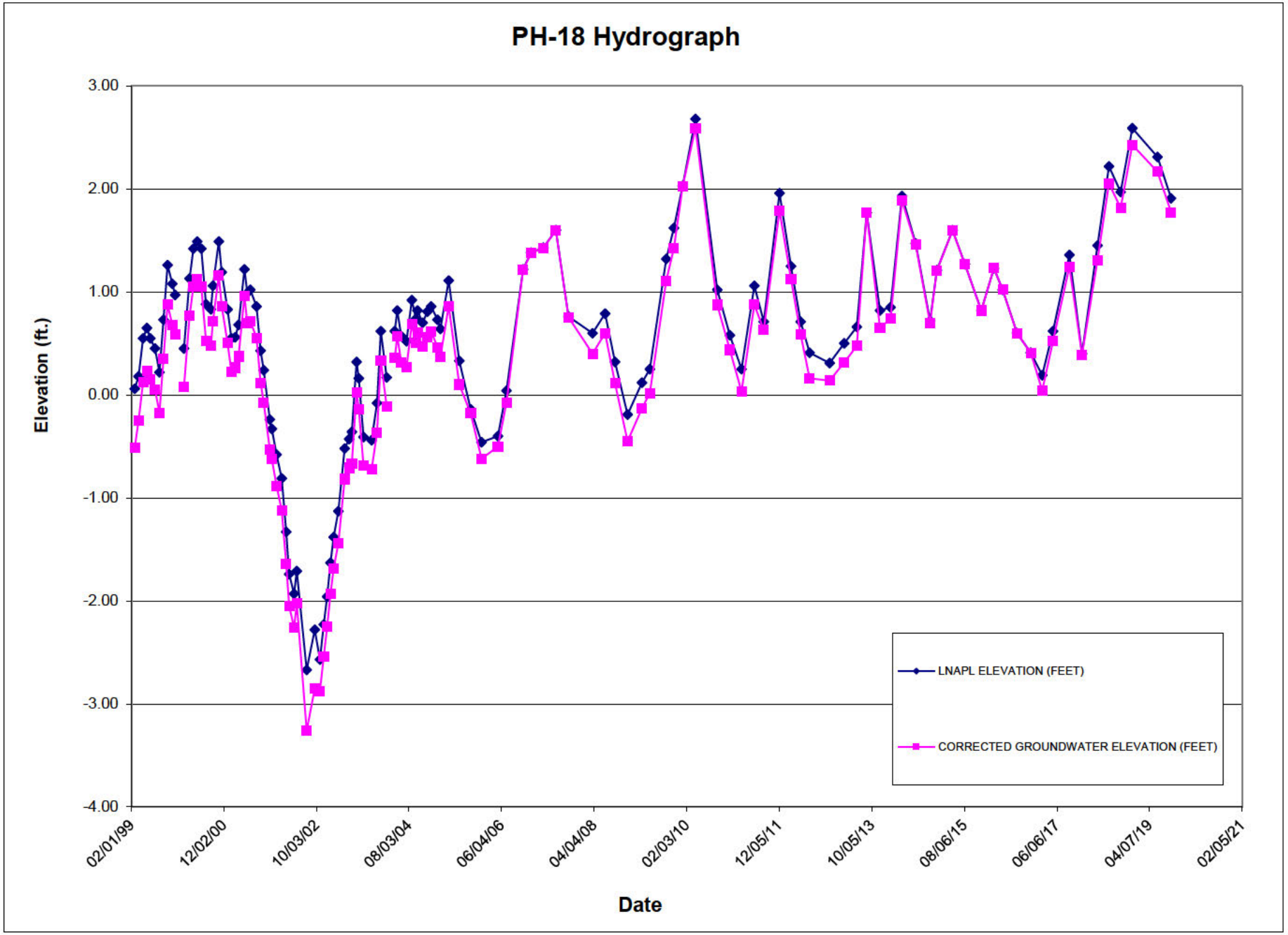
*GW El. corrected for presence of LNAPL using calculation outlined in report text.



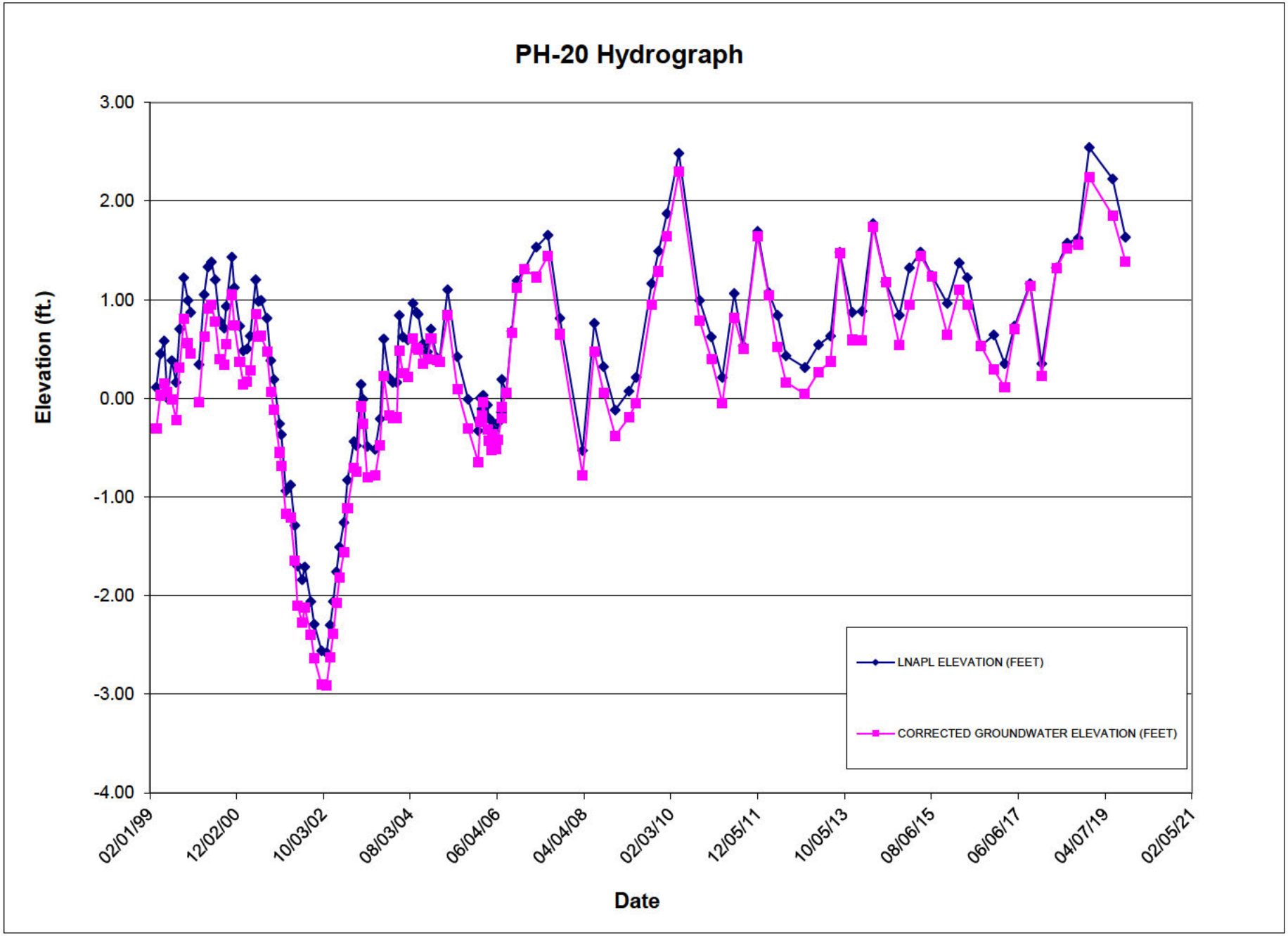
*GW El. corrected for presence of LNAPL using calculation outlined in report text.



*GW El. corrected for presence of LNAPL using calculation outlined in report text.



*GW El. corrected for presence of LNAPL using calculation outlined in report text.



*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Groundwater Gauging Results
MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
MW-29	03/24/99	20.49	20.26	21.69	1.43	0.23	-0.11
MW-29	04/27/99	20.49	19.97	21.49	1.52	0.52	0.16
MW-29	05/25/99	20.49	19.83	21.28	1.45	0.66	0.31
MW-29	06/18/99	20.49	19.91	21.47	1.56	0.58	0.21
MW-29	07/23/99	20.49	20.01	21.55	1.54	0.48	0.11
MW-29	08/24/99	20.49	20.20	21.72	1.52	0.29	-0.07
MW-29	09/22/99	20.49	19.64	20.96	1.32	0.85	0.53
MW-29	10/22/99	20.49	19.15	20.63	1.48	1.34	0.98
MW-29	11/24/99	20.49	19.43	21.00	1.57	1.06	0.68
MW-29	12/15/99	20.49	19.55	21.07	1.52	0.94	0.58
MW-29	01/27/00	20.49	NM	NM			
MW-29	02/17/00	20.49	20.10	21.67	1.57	0.39	0.01
MW-29	03/29/00	20.49	19.37	20.85	1.48	1.12	0.76
MW-29	04/26/00	20.49	19.06	20.70	1.64	1.43	1.04
MW-29	05/23/00	20.49	19.03	20.57	1.54	1.46	1.09
MW-29	06/22/00	20.49	19.22	20.73	1.51	1.27	0.91
MW-29	07/25/00	20.49	19.58	21.01	1.43	0.91	0.57
MW-29	08/30/00	20.49	19.63	21.01	1.38	0.86	0.53
MW-29	09/14/00	20.49	19.44	20.79	1.35	1.05	0.73
MW-29	10/27/00	20.49	18.92	20.27	1.35	1.57	1.25
MW-29	11/16/00	20.49	19.20	20.51	1.31	1.29	0.98
MW-29	12/28/00	20.49	19.64	20.90	1.26	0.85	0.55
MW-29	01/25/01	20.49	19.90	21.17	1.27	0.59	0.29
MW-29	02/22/01	20.49	19.82	21.08	1.26	0.67	0.37
MW-29	03/19/01	20.49	19.17	20.88	1.71	1.32	0.91
MW-29	04/30/01	20.49	19.21	20.40	1.19	1.28	0.99
MW-29	05/21/01	20.49	19.46	20.61	1.15	1.03	0.75
MW-29	06/11/01	20.49	19.35	20.62	1.27	1.14	0.84
MW-29	07/26/01	20.49	19.59	20.77	1.18	0.90	0.62
MW-29	08/24/01	20.49	19.98	21.20	1.22	0.51	0.22
MW-29	09/17/01	20.49	20.21	21.45	1.24	0.28	-0.02
MW-29	10/31/01	20.49	20.69	21.90	1.21	-0.20	-0.49
MW-29	11/14/01	20.49	20.75	21.95	1.20	-0.26	-0.55
MW-29	12/19/01	20.49	21.05	22.30	1.25	-0.56	-0.86
MW-29	01/24/02	20.49	21.26	22.56	1.30	-0.77	-1.08
MW-29	02/26/02	20.49	21.66	23.06	1.40	-1.17	-1.51
MW-29	03/19/02	20.49	22.03	23.50	1.47	-1.54	-1.89
MW-29	04/17/02	20.49	22.45	22.65	0.20	-1.96	-2.01
MW-29	05/03/02	20.49	22.62	22.80	0.18	-2.13	-2.17
MW-29	06/12/02	20.49	22.62	22.76	0.14	-2.13	-2.16
MW-29	06/28/02	20.49	22.50	22.80	0.30	-2.01	-2.08
MW-29	07/25/02	20.49	22.43	24.20	1.77	-1.94	-2.36
MW-29	08/23/02	20.49	22.43	24.20	1.77	-1.94	-2.36
MW-29	09/20/02	20.49	22.64	24.70	2.06	-2.15	-2.64
MW-29	10/28/02	20.49	22.73	23.80	1.07	-2.24	-2.50
MW-29	11/25/02	20.49	22.47	23.57	1.10	-1.98	-2.24
MW-29	12/19/02	20.49	22.25	23.48	1.23	-1.76	-2.06
MW-29	01/13/03	20.49	21.90	22.99	1.09	-1.41	-1.67
MW-29	02/05/03	20.49	22.00	23.30	1.30	-1.51	-1.82
MW-29	03/11/03	20.49	21.68	21.92	0.24	-1.19	-1.25
MW-29	04/25/03	20.49	20.73	22.08	1.35	-0.24	-0.56
MW-29	05/28/03	20.49	20.80	21.80	1.00	-0.31	-0.55
MW-29	06/16/03	20.49	21.00	22.25	1.25	-0.51	-0.81
MW-29	07/21/03	20.49	20.30	20.50	0.20	0.19	0.14

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Groundwater Gauging Results
MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
MW-29	08/05/03	20.49	20.40	20.70	0.30	0.09	0.02
MW-29	09/08/03	20.49	20.63	21.73	1.10	-0.14	-0.40
MW-29	11/07/03	20.49	21.01	22.01	1.00	-0.52	-0.76
MW-29	12/16/03	20.49	21.00	21.33	0.33	-0.51	-0.59
MW-29	01/12/04	20.49	20.25	20.85	0.60	0.24	0.10
MW-29	02/24/04	20.49	20.50	20.75	0.25	-0.01	-0.07
MW-29	03/23/04	20.49	20.56	21.50	0.94	-0.07	-0.30
MW-29	04/22/04	19.01**	18.67	18.77	0.10	0.34	0.32
MW-29	05/10/04	19.01	18.30	19.30	1.00	0.71	0.47
MW-29	06/08/04	19.01	18.70	19.15	0.45	0.31	0.20
MW-29	07/15/04	19.01	18.84	18.96	0.12	0.17	0.14
MW-29	08/24/04	19.01	18.14	19.02	0.88	0.87	0.66
MW-29	09/21/04	19.01	18.30	18.86	0.56	0.71	0.58
MW-29	10/04/04	19.01	18.05	19.10	1.05	0.96	0.71
MW-29	11/10/04	19.01	18.63	19.04	0.41	0.38	0.28
MW-29	12/14/04	19.01	18.58	18.74	0.16	0.43	0.39

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Table F-1: Groundwater Gauging Results

MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
MW-29	01/11/05	19.01	18.42	18.71	0.29	0.59	0.52
MW-29	02/25/05	19.01	18.14	19.33	1.19	0.87	0.58
MW-29	03/18/05	19.01	18.18	19.07	0.89	0.83	0.62
MW-29	05/18/05	19.01	17.98	18.97	0.99	1.03	0.79
MW-29	08/02/05	19.01	18.58	18.91	0.33	0.43	0.35
MW-29	10/24/05	19.01	19.04	19.83	0.79	-0.03	-0.22
MW-29	01/10/06	19.01	19.13	20.12	0.99	-0.12	-0.36
MW-29	01/26/06	19.01	18.60	20.22	1.62	0.41	0.02
MW-29	02/02/06	19.01	17.90	20.00	2.10	1.11	0.61
MW-29	02/10/06	19.01	18.20	20.06	1.86	0.81	0.36
MW-29	02/21/06	19.01	18.89	19.40	0.51	0.12	0.00
MW-29	03/13/06	19.01	18.25	19.71	1.46	0.76	0.41
MW-29	03/31/06	19.01	18.31	20.19	1.88	0.70	0.25
MW-29	04/07/06	19.01	18.40	20.11	1.71	0.61	0.20
MW-29	04/19/06	19.01	18.46	20.35	1.89	0.55	0.10
MW-29	04/28/06	19.01	17.80	20.45	2.65	1.21	0.57
MW-29	06/01/06	19.01	18.64	20.30	1.66	0.37	-0.03
MW-29	06/08/06	19.01	19.14	20.15	1.01	-0.13	-0.37
MW-29	07/07/06	19.01	16.90	20.32	3.42	2.11	1.29
MW-29	07/10/06	19.01	18.85	19.74	0.89	0.16	-0.05
MW-29	08/10/06	19.01	18.00	18.58	0.58	1.01	0.87
MW-29	09/21/06	19.01	17.40	17.68	0.28	1.61	1.54
MW-29	09/28/06	19.01	17.21	17.54	0.33	1.80	1.72
MW-29	11/06/06	19.01	17.71	17.98	0.27	1.30	1.24
MW-29	01/02/07	19.01	17.65	17.98	0.33	1.36	1.28
MW-29	04/02/07	19.01	17.60	17.92	0.32	1.41	1.33
MW-29	07/02/07	19.01	17.42	17.75	0.33	1.59	1.51
MW-29	10/01/07	19.01	18.13	18.14	0.01	0.88	0.88
MW-29	03/24/08	19.01	18.34	19.20	0.86	0.67	0.46
MW-29	06/23/08	19.01	18.42	18.82	0.40	0.59	0.49
MW-29	09/02/08	19.01	18.68	19.71	1.03	0.33	0.08
MW-29	12/02/08	19.01	18.95	19.89	0.94	0.06	-0.17
MW-29	03/17/09	19.01	18.82	19.80	0.98	0.19	-0.05
MW-29	05/12/09	19.01	18.42	19.26	0.84	0.59	0.39
MW-29	09/08/09	19.01	17.59	17.65	0.06	1.42	1.41
MW-29	11/02/09	19.01	17.45	17.48	0.03	1.56	1.55
MW-29	01/04/10	19.01	17.02	17.03	0.01	1.99	1.99
MW-29	04/07/10	19.01	16.22	16.26	0.04	2.79	2.78
MW-29	09/13/10	19.01	17.82	18.09	0.27	1.19	1.13
MW-29	12/13/10	19.01	18.40	18.68	0.28	0.61	0.54
MW-29	03/07/11	19.01	18.41	19.19	0.78	0.60	0.41
MW-29	06/07/11	19.01	20.20	20.50	0.30	-1.19	-1.26
MW-29	08/15/11	19.01	18.22	18.53	0.31	0.79	0.72
MW-29	09/15/11	19.01	18.22	18.53	0.31	0.79	0.72
MW-29	12/07/11	19.01	16.75	17.67	0.92	2.26	2.04
MW-29	03/01/12	19.01	17.37	17.54	0.17	1.64	1.60
MW-29	05/08/12	19.01	18.06	18.10	0.04	0.95	0.94
MW-29	07/11/12	19.01	18.45	18.80	0.35	0.56	0.48
MW-29	12/03/12	19.01	18.90	18.90	0.00	0.11	0.11
MW-29	03/19/13	19.01	18.21	18.95	0.74	0.80	0.62
MW-29	06/20/13	19.01	18.13	18.86	0.73	0.88	0.70
MW-29	08/30/13	19.01	17.13	17.46	0.33	1.88	1.80
MW-29	12/05/13	19.01	18.07	18.56	0.49	0.94	0.82
MW-29	02/24/14	19.01	17.07	18.04	0.97	1.94	1.71

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Table F1: Groundwater Gauging Results

MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
MW-29	05/12/14	19.01	16.93	17.12	0.19	2.08	2.03
MW-29	08/18/14	19.01	17.26	17.48	0.22	1.75	1.70
MW-29	12/01/14	19.01	17.95	18.07	0.12	1.06	1.03
MW-29	02/18/15	19.01	17.63	17.66	0.03	1.38	1.37
MW-29	05/13/15	19.01	17.20	17.30	0.10	1.81	1.79
MW-29	08/10/15	19.01	17.36	17.45	0.09	1.65	1.63
MW-29	12/07/15	19.01	17.62	18.03	0.41	1.39	1.29
MW-29	03/07/16	19.01	17.06	17.65	0.59	1.95	1.81
MW-29	05/09/16	19.01	17.7	17.75	0.05	1.31	1.30
MW-29	08/22/16	19.01	18.15	18.25	0.10	0.86	0.84
MW-29	11/29/16	19.01	18.4	18.4	0.00	0.61	0.61
MW-29	02/28/17	19.01	18.5	18.5	0.00	0.51	0.51
MW-29	05/05/17	19.01	18.02	18.71	0.69	0.99	0.88
MW-29	09/05/17	19.01	17.4	17.5	0.10	1.61	1.59
MW-29	12/04/17	19.01	18.3	18.9	0.60	0.71	0.61
MW-29	03/26/18	19.01	17.39	17.4	0.01	1.62	1.62
MW-29	06/18/18	19.01	NM	16.71			2.30
MW-29	09/10/18	19.01	17.10	17.11	0.01	1.91	1.91
MW-29	12/04/18	19.01	NM	16.4			2.61
MW-29	06/03/19	19.01	NM	16.74			2.27
MW-29	09/10/19	19.01	NM	17.08			1.93

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Table F1: Groundwater Gauging Results

MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
MW-32	04/27/99	19.28	18.71	21.01	2.30	0.57	0.04
MW-32	05/25/99	19.28	18.56	20.83	2.27	0.72	0.20
MW-32	06/18/99	19.28	18.69	20.70	2.01	0.59	0.13
MW-32	07/23/99	19.28	18.79	21.02	2.23	0.49	-0.02
MW-32	08/24/99	19.28	19.02	21.01	1.99	0.26	-0.20
MW-32	09/22/99	19.28	18.40	20.32	1.92	0.88	0.44
MW-32	10/22/99	19.28	17.88	20.17	2.29	1.40	0.87
MW-32	11/24/99	19.28	18.14	20.15	2.01	1.14	0.68
MW-32	12/15/99	19.28	18.29	20.15	1.86	0.99	0.56
MW-32	01/27/00	19.28	NM	NM			
MW-32	02/17/00	19.28	19.30	20.78	1.48	-0.02	-0.36
MW-32	03/29/00	19.28	18.11	20.16	2.05	1.17	0.70
MW-32	04/26/00	19.28	17.85	19.75	1.90	1.43	0.99
MW-32	05/23/00	19.28	17.79	19.61	1.82	1.49	1.07
MW-32	06/22/00	19.28	17.97	19.72	1.75	1.31	0.91
MW-32	07/25/00	19.28	18.39	19.98	1.59	0.89	0.52
MW-32	08/30/00	19.28	18.65	20.34	1.69	0.63	0.24
MW-32	09/14/00	19.28	18.46	20.14	1.68	0.82	0.43
MW-32	10/27/00	19.28	18.16	19.56	1.40	1.12	0.80
MW-32	11/16/00	19.28	18.53	18.56	0.03	0.75	0.74
MW-32	12/28/00	19.28	18.62	19.29	0.67	0.66	0.51
MW-32	01/25/01	19.28	18.95	18.97	0.02	0.33	0.33
MW-32	02/22/01	19.28	18.56	20.12	1.56	0.72	0.36
MW-32	03/19/01	19.28	18.61	20.01	1.40	0.67	0.35
MW-32	04/30/01	19.28	18.31	18.38	0.07	0.97	0.95
MW-32	05/21/01	19.28	18.57	18.59	0.02	0.71	0.71
MW-32	06/11/01	19.28	18.21	19.32	1.11	1.07	0.81
MW-32	07/26/01	19.28	18.77	18.79	0.02	0.51	0.51
MW-32	08/24/01	19.28	19.18	19.20	0.02	0.10	0.10
MW-32	09/17/01	19.28	19.08	20.35	1.27	0.20	-0.09
MW-32	10/31/01	19.28	NM	NM			
MW-32	11/14/01	19.28	19.70	20.91	1.21	-0.42	-0.70
MW-32	12/19/01	19.28	20.25	20.50	0.25	-0.97	-1.03
MW-32	01/24/02	19.28	20.37	20.70	0.33	-1.09	-1.17
MW-32	02/26/02	19.28	19.99	20.08	0.09	-0.71	-0.73
MW-32	03/19/02	19.28	21.48	21.49	0.01	-2.20	-2.20
MW-32	04/17/02	19.28	21.51	21.53	0.02	-2.23	-2.23
MW-32	05/03/02	19.28	21.57	21.58	0.01	-2.29	-2.29
MW-32	06/12/02	19.28	21.73	21.93	0.20	-2.45	-2.50
MW-32	06/28/02	19.28	21.67	22.10	0.43	-2.39	-2.49
MW-32	07/25/02	19.28	21.87	21.90	0.03	-2.59	-2.60
MW-32	09/20/02	19.28	22.17	22.17	0.00	-2.89	-2.89
MW-32	10/28/02	19.28	22.14	22.16	0.02	-2.86	-2.86
MW-32	11/25/02	19.28	21.86	21.87	0.01	-2.58	-2.58
MW-32	12/19/02	19.28	21.59	21.60	0.01	-2.31	-2.31
MW-32	01/13/03	19.28	21.26	21.26	0.00	-1.98	-1.98
MW-32	02/05/03	19.28	21.30	21.31	0.01	-2.02	-2.02
MW-32	03/11/03	19.28	20.69	21.28	0.59	-1.41	-1.55
MW-32	04/25/03	19.28	19.75	21.16	1.41	-0.47	-0.79
MW-32	05/28/03	19.28	20.13	20.37	0.24	-0.85	-0.91
MW-32	06/16/03	19.28	19.50	20.80	1.30	-0.22	-0.52
MW-32	07/21/03	19.28	19.06	19.47	0.41	0.22	0.13
MW-32	08/05/03	19.28	19.40	19.70	0.30	-0.12	-0.19

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Table F1: Groundwater Gauging Results

MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
MW-32	09/08/03	19.28	19.63	21.20	1.57	-0.35	-0.71
MW-32	11/07/03	19.28	19.78	20.45	0.67	-0.50	-0.65
MW-32	12/16/03	19.28	19.74	19.84	0.10	-0.46	-0.48
MW-32	01/12/04	19.28	19.01	19.29	0.28	0.27	0.21
MW-32	02/24/04	19.28	19.57	20.40	0.83	-0.29	-0.48
MW-32	03/23/04	19.28	18.29	18.70	0.41	0.99	0.90
MW-32	04/22/04	19.28	17.81	18.40	0.59	1.47	1.33
MW-32	05/10/04	19.28	17.43	19.18	1.75	1.85	1.45
MW-32	06/08/04	19.28	18.49	18.60	0.11	0.79	0.76
MW-32	07/15/04	19.29	18.10	18.50	0.40	1.19	1.10
MW-32	08/24/04	19.29	17.55	17.64	0.09	1.74	1.72
MW-32	09/21/04	19.29	18.18	18.29	0.11	1.11	1.08
MW-32	10/04/04	19.29	17.55	19.10	1.55	1.74	1.38
MW-32	11/10/04	19.29	18.00	19.50	1.50	1.29	0.94
MW-32	12/14/04	19.29	18.30	18.53	0.23	0.99	0.94
MW-32	01/11/05	19.29	18.09	18.22	0.13	1.20	1.17
MW-32	02/25/05	19.29	18.13	18.52	0.39	1.16	1.07
MW-32	03/18/05	19.29	17.90	18.37	0.47	1.39	1.28
MW-32	05/18/05	19.29	17.88	17.94	0.06	1.41	1.40
MW-32	08/02/05	19.29	18.21	19.68	1.47	1.08	0.74
MW-32	10/24/05	19.29	18.63	19.89	1.26	0.66	0.37
MW-32	01/10/06	19.29	18.77	20.01	1.24	0.52	0.23
MW-32	01/26/06	19.29	18.07	18.35	0.28	1.22	1.16
MW-32	02/02/06	19.29	17.58	17.91	0.33	1.71	1.63
MW-32	02/10/06	19.29	17.76	18.12	0.36	1.53	1.45
MW-32	02/21/06	19.29	18.61	18.86	0.25	0.68	0.62
MW-32	03/13/06	19.29	17.87	19.85	1.98	1.42	0.96
MW-32	03/31/06	19.29	18.17	20.19	2.02	1.12	0.66

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Table F1: Groundwater Gauging Results

MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
MW-32	04/07/06	19.29	18.78	19.50	0.72	0.51	0.34
MW-32	04/19/06	19.29	18.84	20.23	1.39	0.45	0.13
MW-32	04/28/06	19.29	18.27	18.59	0.32	1.02	0.95
MW-32	06/01/06	19.29	18.68	18.99	0.31	0.61	0.54
MW-32	06/08/06	19.29	18.97	19.40	0.43	0.32	0.22
MW-32	07/07/06	19.29	17.29	20.25	2.96	2.00	1.32
MW-32	07/10/06	19.29	18.44	19.78	1.34	0.85	0.54
MW-32	08/10/06	19.29	17.21	19.71	2.50	2.08	1.51
MW-32	09/20/06	19.29	17.39	17.50	0.11	1.90	1.87
MW-32	09/28/06	19.29	16.84	17.40	0.56	2.45	2.32
MW-32	11/06/06	19.29	17.28	17.59	0.31	2.01	1.94
MW-32	01/02/07	19.29	17.02	17.78	0.76	2.27	2.10
MW-32	04/02/07	19.29	17.10	17.20	0.10	2.19	2.17
MW-32	07/02/07	19.29	16.90	17.05	0.15	2.39	2.36
MW-32	10/01/07	19.29	17.52	17.99	0.47	1.77	1.66
MW-32	03/24/08	19.29	18.05	18.38	0.33	1.24	1.16
MW-32	06/23/08	19.29	17.73	18.81	1.08	1.56	1.31
MW-32	09/02/08	19.29	18.50	18.75	0.25	0.79	0.73
MW-32	12/02/08	19.29	18.46	19.45	0.99	0.83	0.60
MW-32	03/17/09	19.29	18.08	19.30	1.22	1.21	0.93
MW-32	05/12/09	19.29	17.87	19.17	1.30	1.42	1.12
MW-32	09/08/09	19.28	16.98	17.17	0.19	2.30	2.26
MW-32	11/02/09	19.28	16.87	17.21	0.34	2.41	2.33
MW-32	01/04/10	19.28	16.17	16.99	0.82	3.11	2.92
MW-32	04/07/10	19.28	15.66	15.89	0.23	3.62	3.57
MW-32	09/13/10	19.28	17.26	17.55	0.29	2.02	1.95
MW-32	12/13/10	19.28	17.85	18.32	0.47	1.43	1.32
MW-32	03/07/11	19.28	17.88	18.34	0.46	1.40	1.29
MW-32	06/07/11	19.28	17.60	17.79	0.19	1.68	1.64
MW-32	08/15/11	19.28	17.64	17.89	0.25	1.64	1.58
MW-32	12/07/11	19.28	16.34	16.59	0.25	2.94	2.88
MW-32	02/29/12	19.28	17.01	17.37	0.36	2.27	2.19
MW-32	05/08/12	19.28	17.48	17.51	0.03	1.80	1.79
MW-32	07/11/12	19.28	17.80	18.61	0.81	1.48	1.29
MW-32	12/03/12	19.28	17.82	18.72	0.90	1.46	1.25
MW-32	03/19/13	19.28	17.73	18.88	1.15	1.55	1.29
MW-32	06/19/13	19.28	17.42	18.68	1.26	1.86	1.57
MW-32	08/29/13	19.28	16.50	17.16	0.66	2.78	2.63
MW-32	12/03/13	19.28	17.68	18.32	0.64	1.60	1.45
MW-32	02/17/14	19.28	17.24	18.16	0.92	2.04	1.83
MW-32	05/12/14	19.28	16.30	16.95	0.65	2.98	2.83
MW-32	08/18/14	19.28	16.68	17.41	0.73	2.60	2.43
MW-32	12/01/14	19.28	17.33	18.15	0.82	1.95	1.76
MW-32	01/18/15	19.28	16.95	18.20	1.25	2.33	2.04
MW-32	05/13/15	19.28	16.53	17.71	1.18	2.75	2.48
MW-32	08/10/15	19.28	16.64	17.8	1.16	2.64	2.37
MW-32	12/07/15	19.28	17.29	18.03	0.74	1.99	1.82
MW-32	03/07/16	19.28	16.89	17.89	1.00	2.39	2.16
MW-32	05/09/16	19.28	17.04	17.95	0.91	2.24	2.03
MW-32	08/22/16	19.28	17.4	17.6	0.20	1.88	1.83
MW-32	11/29/16	19.28	17.68	17.99	0.31	1.60	1.53
MW-32	02/20/17	19.28	18.07	18.56	0.49	1.21	1.10
MW-32	05/08/17	19.28	17.55	18.02	0.47	1.73	1.65
MW-32	09/05/17	19.28	17	17.13	0.13	2.28	2.26

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Table F1: Groundwater Gauging Results
MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
MW-32	12/04/17	19.28	17.75	18.13	0.38	1.53	1.47
MW-32	03/26/18	19.28	16.90	17.43	0.53	2.38	2.30
MW-32	06/18/18	19.28	16.02	16.12	0.10	3.26	3.24
MW-32	09/10/18	19.28	16.10	17.9	1.80	3.18	2.89
MW-32	12/04/18	19.28	16.00	16.35	0.35	3.28	3.22
MW-32	06/03/19	19.28	15.80	15.99	0.19	3.48	3.45
MW-32	09/10/19	19.28	16.20	17.70	1.50	3.08	2.81

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Table F1: Groundwater Gauging Results
MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
MW-35	03/24/99	20.29	19.11	20.25	1.14	1.18	0.95
MW-35	04/27/99	20.29	18.71	20.18	1.47	1.58	1.28
MW-35	05/25/99	20.29	18.52	20.09	1.57	1.77	1.45
MW-35	06/18/99	20.29	18.61	20.25	1.64	1.68	1.35
MW-35	07/23/99	20.29	18.68	20.30	1.62	1.61	1.28
MW-35	08/24/99	20.29	18.91	20.40	1.49	1.38	1.08
MW-35	09/22/99	20.29	18.49	19.80	1.31	1.80	1.53
MW-35	10/22/99	20.29	17.86	19.41	1.55	2.43	2.11
MW-35	11/24/99	20.29	18.04	19.70	1.66	2.25	1.91
MW-35	12/15/99	20.29	18.20	19.69	1.49	2.09	1.79
MW-35	01/27/00	20.29	NM	NM			
MW-35	02/17/00	20.29	18.73	20.17	1.44	1.56	1.27
MW-35	03/29/00	20.29	18.11	19.44	1.33	2.18	1.91
MW-35	04/26/00	20.29	17.85	19.25	1.40	2.44	2.15
MW-35	05/23/00	20.29	17.69	19.14	1.45	2.60	2.30
MW-35	06/22/00	20.29	17.86	19.24	1.38	2.43	2.15
MW-35	07/25/00	20.29	18.18	19.44	1.26	2.11	1.85
MW-35	08/30/00	20.29	18.23	19.45	1.22	2.06	1.81
MW-35	09/14/00	20.29	18.07	19.21	1.14	2.22	1.99
MW-35	10/27/00	20.29	17.61	17.80	0.19	2.68	2.64
MW-35	11/16/00	20.29	17.82	18.98	1.16	2.47	2.23
MW-35	12/28/00	20.29	NM	NM			
MW-35	01/25/01	20.29	NM	NM			
MW-35	02/22/01	20.29	18.55	19.44	0.89	1.74	1.56
MW-35	03/19/01	20.29	18.43	19.32	0.89	1.86	1.68
MW-35	04/30/01	20.29	17.88	18.94	1.06	2.41	2.19
MW-35	05/21/01	20.29	18.09	18.98	0.89	2.20	2.02
MW-35	06/11/01	20.29	18.00	18.92	0.92	2.29	2.10
MW-35	07/26/01	20.29	18.20	18.97	0.77	2.09	1.93
MW-35	08/24/01	20.29	18.65	19.40	0.75	1.64	1.49
MW-35	09/17/01	20.29	18.87	19.64	0.77	1.42	1.26
MW-35	10/31/01	20.29	19.33	20.11	0.78	0.96	0.80
MW-35	11/14/01	20.29	19.43	20.20	0.77	0.86	0.70
MW-35	12/19/01	20.29	19.78	20.47	0.69	0.51	0.37
MW-35	01/24/02	20.29	19.95	20.52	0.57	0.34	0.22
MW-35	02/26/02	20.29	20.42	21.02	0.60	-0.13	-0.25
MW-35	03/19/02	20.29	20.83	21.53	0.70	-0.54	-0.68
MW-35	04/24/02	20.29	21.13	21.73	0.60	-0.84	-0.96
MW-35	05/13/02	20.29	20.98	21.43	0.45	-0.69	-0.78
MW-35	06/28/02	20.29	21.20	21.70	0.50	-0.91	-1.01
MW-35	07/25/02	20.29	21.37	21.90	0.53	-1.08	-1.19
MW-35	09/20/02	20.29	21.63	22.20	0.57	-1.34	-1.46
MW-35	10/28/02	20.29	21.58	22.54	0.96	-1.29	-1.49
MW-35	11/25/02	20.29	21.40	22.30	0.90	-1.11	-1.29
MW-35	12/19/02	20.29	21.20	22.80	1.60	-0.91	-1.24
MW-35	01/13/03	20.29	20.95	21.36	0.41	-0.66	-0.74
MW-35	02/05/03	20.29	20.80	21.60	0.80	-0.51	-0.67
MW-35	03/11/03	20.29	20.70	20.96	0.26	-0.41	-0.46
MW-35	04/25/03	20.29	19.75	20.20	0.45	0.54	0.45
MW-35	05/28/03	20.29	19.65	20.20	0.55	0.64	0.53
MW-35	06/16/03	20.29	19.61	20.10	0.49	0.68	0.58
MW-35	07/21/03	20.29	18.83	19.40	0.57	1.46	1.34
MW-35	08/05/03	20.29	18.95	19.62	0.67	1.34	1.20
MW-35	09/08/03	20.29	19.37	20.11	0.74	0.92	0.77

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Table F1: Groundwater Gauging Results
MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
MW-35	Well Abandoned 10/03.						

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Table F1: Groundwater Gauging Results
MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
MW-36	03/24/99	19.24	18.95	20.72	1.77	0.29	-0.12
MW-36	04/27/99	19.24	18.57	20.01	1.44	0.67	0.34
MW-36	05/25/99	19.24	18.24	19.53	1.29	1.00	0.70
MW-36	06/18/99	19.24	18.59	20.17	1.58	0.65	0.29
MW-36	07/23/99	19.24	18.65	20.31	1.66	0.59	0.21
MW-36	08/24/99	19.24	18.87	20.64	1.77	0.37	-0.04
MW-36	09/22/99	19.24	18.30	19.58	1.28	0.94	0.65
MW-36	10/22/99	19.24	17.87	18.77	0.90	1.37	1.16
MW-36	11/24/99	19.24	18.61	19.15	0.54	0.63	0.51
MW-36	12/15/99	19.24	18.12	19.34	1.22	1.12	0.84
MW-36	01/27/00	19.24	NM	NM			
MW-36	02/17/00	19.24	18.65	20.19	1.54	0.59	0.24
MW-36	03/29/00	19.24	18.06	18.99	0.93	1.18	0.97
MW-36	05/23/00	19.24	17.67	18.56	0.89	1.57	1.37
MW-36	06/22/00	19.24	17.79	18.79	1.00	1.45	1.22
MW-36	07/25/00	19.24	18.13	19.48	1.35	1.11	0.80
MW-36	08/30/00	19.24	18.21	19.60	1.39	1.03	0.71
MW-36	09/14/00	19.24	17.96	19.02	1.06	1.28	1.04
MW-36	10/27/00	19.24	17.63	18.50	0.87	1.61	1.41
MW-36	11/16/00	19.24	17.85	18.93	1.08	1.39	1.14
MW-36	12/28/00	19.24	18.17	19.45	1.28	1.07	0.78
MW-36	01/25/01	19.24	18.51	19.99	1.48	0.73	0.39
MW-36	02/22/01	19.24	18.50	19.89	1.39	0.74	0.42
MW-36	03/19/01	19.24	18.42	19.77	1.35	0.82	0.51
MW-36	04/30/01	19.24	17.94	18.87	0.93	1.30	1.09
MW-36	05/21/01	19.24	18.18	19.39	1.21	1.06	0.78
MW-36	06/11/01	19.24	18.09	19.20	1.11	1.15	0.89
MW-36	07/26/01	19.24	18.23	19.55	1.32	1.01	0.71
MW-36	08/24/01	19.24	18.61	20.25	1.64	0.63	0.25
MW-36	09/17/01	19.24	18.87	20.65	1.78	0.37	-0.04
MW-36	10/31/01	19.24	19.32	21.35	2.03	-0.08	-0.55
MW-36	11/14/01	19.24	19.38	21.29	1.91	-0.14	-0.58
MW-36	12/19/01	19.24	19.74	21.67	1.93	-0.50	-0.94
MW-36	01/24/02	19.24	NM	NM			
MW-36	02/26/02	19.24	20.36	22.53	2.17	-1.12	-1.62
MW-36	03/19/02	19.24	20.91	23.10	2.19	-1.67	-2.17
MW-36	04/24/02	19.24	21.13	23.45	2.32	-1.89	-2.42
MW-36	05/13/02	19.24	20.92	23.06	2.14	-1.68	-2.17
MW-36	06/28/02	19.24	21.10	23.30	2.20	-1.86	-2.37
MW-36	07/25/02	19.24	21.36	23.74	2.38	-2.12	-2.67
MW-36	09/20/02	19.24	22.01	22.40	0.39	-2.77	-2.86
MW-36	10/28/02	19.24	22.02	22.46	0.44	-2.78	-2.88
MW-36	11/25/02	19.24	21.75	22.10	0.35	-2.51	-2.59
MW-36	12/19/02	19.24	21.17	22.82	1.65	-1.93	-2.31
MW-36	01/13/03	19.24	20.76	22.40	1.64	-1.52	-1.90
MW-36	02/05/03	19.24	20.86	22.49	1.63	-1.62	-1.99
MW-36	03/11/03	19.24	20.36	21.61	1.25	-1.12	-1.41
MW-36	04/25/03	19.24	19.67	20.75	1.08	-0.43	-0.68
MW-36	05/28/03	19.24	19.65	20.76	1.11	-0.41	-0.67
MW-36	06/16/03	19.24	19.55	20.58	1.03	-0.31	-0.55
MW-36	07/21/03	19.24	18.91	19.78	0.87	0.33	0.13
MW-36	08/05/03	19.24	19.07	20.04	0.97	0.17	-0.05
MW-36	09/08/03	19.24	19.47	20.81	1.34	-0.23	-0.54
MW-36	11/07/03	19.24	19.60	20.81	1.21	-0.36	-0.64

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Table F1: Groundwater Gauging Results
MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
MW-36	12/16/03	19.24	19.32	20.20	0.88	-0.08	-0.28
MW-36	01/12/04	19.24	18.60	19.25	0.65	0.64	0.49
MW-36	02/24/04	19.24	18.98	19.69	0.71	0.26	0.10
MW-36	03/23/04	19.24	19.11	19.84	0.73	0.13	-0.04
MW-36	04/22/04	19.24	18.58	19.10	0.52	0.66	0.54
MW-36	05/10/04	19.24	18.43	18.87	0.44	0.81	0.71
MW-36	06/08/04	19.24	18.72	19.31	0.59	0.52	0.38
MW-36	07/15/04	19.24	18.63	19.24	0.61	0.61	0.47
MW-36	08/24/04	19.24	18.24	18.64	0.40	1.00	0.91
MW-36	09/21/04	19.24	18.43	18.86	0.43	0.81	0.71
MW-36	10/04/04	19.24	18.21	18.64	0.43	1.03	0.93
MW-36	11/10/04	19.24	18.62	19.18	0.56	0.62	0.49
MW-36	12/14/04	19.24	18.41	18.79	0.38	0.83	0.74
MW-36	01/11/05	19.24	18.42	18.81	0.39	0.82	0.73
MW-36	02/25/05	19.24	18.57	19.03	0.46	0.67	0.56
MW-36	03/18/05	19.24	18.65	19.13	0.48	0.59	0.48
MW-36	05/18/05	19.24	18.22	18.54	0.32	1.02	0.95
MW-36	08/02/05	19.24	18.83	19.43	0.60	0.41	0.27
MW-36	10/24/05	19.24	19.32	20.46	1.14	-0.08	-0.34
MW-36	01/10/06	19.24	19.27	20.45	1.18	-0.03	-0.30
MW-36	05/08/06	19.24	19.35	20.55	1.20	-0.11	-0.39
MW-36	07/10/06	19.24	19.00	19.82	0.82	0.24	0.05
MW-36	11/06/06	19.24	17.79	18.17	0.38	1.45	1.36
MW-36	01/02/07	19.24	17.56	17.92	0.36	1.68	1.60
MW-36	04/02/07	19.24	17.45	17.79	0.34	1.79	1.71
MW-36	07/02/07	19.24	17.20	17.61	0.41	2.04	1.95
MW-36	10/01/07	19.24	17.59	17.96	0.37	1.65	1.56
MW-36	03/24/08	19.24	18.51	18.99	0.48	0.73	0.62
MW-36	06/23/08	19.24	18.33	18.86	0.53	0.91	0.79
MW-36	09/02/08	19.24	18.88	19.92	1.04	0.36	0.12

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Table F1: Groundwater Gauging Results
MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
MW-36	12/02/08	19.24	19.37	20.76	1.39	-0.13	-0.45
MW-36	03/17/09	19.24	18.96	19.92	0.96	0.28	0.06
MW-36	05/12/09	19.24	18.83	19.47	0.64	0.41	0.26
MW-36	09/08/09	19.24	17.69	17.90	0.21	1.55	1.50
MW-36	11/02/09	19.24	17.64	17.87	0.23	1.60	1.55
MW-36	01/04/10	19.24	16.97	17.17	0.20	2.27	2.22
MW-36	04/07/10	19.24	16.37	16.49	0.12	2.87	2.84
MW-36	09/13/10	19.24	18.12	18.33	0.21	1.12	1.07
MW-36	12/13/2010	19.24	18.83	19.00	0.17	0.41	0.37
MW-36	3/7/2011	19.24	18.80	18.93	0.13	0.44	0.41
MW-36	6/7/2011	19.24	18.06	18.26	0.20	1.18	1.13
MW-36	8/15/2011	19.24	18.61	18.82	0.21	0.63	0.58
MW-36	12/6/2011	19.24	17.20	17.30	0.10	2.04	2.02
MW-36	2/29/2012	19.24	17.80	17.91	0.11	1.44	1.41
MW-36	5/7/2012	19.24	18.50	18.61	0.11	0.74	0.71
MW-36	7/11/2012	19.24	18.83	18.90	0.07	0.41	0.39
MW-36	12/3/2012	19.24	18.82	18.91	0.09	0.42	0.40
MW-36	3/19/2013	19.24	18.69	18.81	0.12	0.55	0.52
MW-36	6/19/2013	19.24	18.64	18.85	0.21	0.60	0.55
MW-36	8/29/2013	19.24	17.35	17.37	0.02	1.89	1.89
MW-36	12/3/2013	19.24	18.38	18.38	0.00	0.86	0.86
MW-36	2/17/2014	19.24	18.26	18.26	0.00	0.98	0.98
MW-36	5/12/2014	19.24	17.12	17.12	0.00	2.12	2.12
MW-36	8/18/2014	19.24	17.62	17.64	0.02	1.62	1.62
MW-36	12/1/2014	19.24	18.31	18.31	0.00	0.93	0.93
MW-36	1/18/2015	19.24	17.87	17.87	0.00	1.37	1.37
MW-36	5/13/2015	19.24	17.40	17.40	0.00	1.84	1.84
MW-36	8/10/2015	19.24	17.7	17.7	0.00	1.54	1.54
MW-36	12/7/2015	19.24	18.25	18.25	0.00	0.99	0.99
MW-36	3/7/2016	19.24	17.87	17.87	0.00	1.37	1.37
MW-36	5/9/2016	19.24	18.06	18.1	0.04	1.18	1.17
MW-36	8/22/2016	19.24	18.5	18.5	0.00	0.74	0.74
MW-36	11/29/2016	19.24	18.55	18.55	0.00	0.69	0.69
MW-36	2/20/2017	19.24	18.89	19.04	0.15	0.35	0.32
MW-36	5/8/2017	19.24	18.45	18.69	0.24	0.79	0.75
MW-36	9/5/2017	19.24	17.82	18.05	0.23	1.42	1.38
MW-36	12/4/2017	19.24	18.51	18.73	0.22	0.73	0.69
MW-36	3/26/2018	19.24	17.48	17.49	0.01	1.76	1.76
MW-36	6/18/2018	19.24	NM	16.65			2.59
MW-36	9/10/2018	19.24	NM	16.84			2.40
MW-36	12/4/2018	19.24	NM	16.43			2.81
MW-36	6/3/2019	19.24	NM	16.85			2.39
MW-36	9/10/2019	19.24	NM	17.25			1.99

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Table F1: Groundwater Gauging Results

MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
PH-14	03/24/99	18.21	19.42	20.80	1.38	-1.21	-1.54
PH-14	04/27/99	18.21	19.15	20.61	1.46	-0.94	-1.29
PH-14	05/25/99	18.21	19.02	20.51	1.49	-0.81	-1.17
PH-14	06/18/99	18.21	19.06	20.77	1.71	-0.85	-1.26
PH-14	07/23/99	18.21	19.15	20.89	1.74	-0.94	-1.36
PH-14	08/24/99	18.21	19.35	21.20	1.85	-1.14	-1.58
PH-14	09/22/99	18.21	19.06	20.09	1.03	-0.85	-1.10
PH-14	10/22/99	18.21	18.52	19.58	1.06	-0.31	-0.56
PH-14	11/24/99	18.21	17.9	18.55	0.65	0.31	0.15
PH-14	12/15/99	18.21	18.64	20.06	1.42	-0.43	-0.77
PH-14	01/27/00	18.21	NM	NM			
PH-14	02/17/00	18.21	19.02	20.71	1.69	-0.81	-1.22
PH-14	03/29/00	18.21	18.56	19.39	0.83	-0.35	-0.55
PH-14	04/26/00	18.21	18.22	19.11	0.89	-0.01	-0.22
PH-14	05/23/00	18.21	18.15	19.17	1.02	0.06	-0.18
PH-14	06/22/00	18.21	18.37	19.59	1.22	-0.16	-0.45
PH-14	07/25/00	18.21	18.71	20.16	1.45	-0.50	-0.85
PH-14	08/30/00	18.21	NM	NM			
PH-14	09/14/00	18.21	17.28	18.55	1.27	0.93	0.63
PH-14	10/27/00	18.21	NM	NM			
PH-14	11/16/00	18.21	17.2	17.23	0.03	1.01	1.00
PH-14	12/28/00	18.21	NM	NM			
PH-14	01/25/01	18.21	17.65	17.87	0.22	0.56	0.51
PH-14	02/22/01	18.21	17.64	17.91	0.27	0.57	0.51
PH-14	03/19/01	18.21	17.44	18.53	1.09	0.77	0.51
PH-14	04/30/01	18.21	17.14	17.15	0.01	1.07	1.07
PH-14	05/21/01	18.21	17.26	17.31	0.05	0.95	0.94
PH-14	06/11/01	18.21	17.1	18.25	1.15	1.11	0.83
PH-14	07/26/01	18.21	17.49	17.71	0.22	0.72	0.67
PH-14	08/24/01	18.21	17.85	18.11	0.26	0.36	0.30
PH-14	09/17/01	18.21	17.87	19.28	1.41	0.34	0.00
PH-14	10/31/01	18.21	NM	NM			
PH-14	11/14/01	18.21	18.58	20.00	1.42	-0.37	-0.71
PH-14	12/19/01	18.21	19.15	19.22	0.07	-0.94	-0.96
PH-14	01/24/02	18.21	19.38	19.41	0.03	-1.17	-1.18
PH-14	02/26/02	18.21	19.85	19.85	0.00	-1.64	-1.64
PH-14	03/19/02	18.21	19.9	21.40	1.50	-1.69	-2.05
PH-14	04/24/02	18.21	20.5	20.55	0.05	-2.29	-2.30
PH-14	05/13/02	18.21	20.14	21.55	1.41	-1.93	-2.27
PH-14	06/28/02	18.21	20.2	21.00	0.80	-1.99	-2.18
PH-14	07/25/02	18.21	20.9	20.91	0.01	-2.69	-2.69
PH-14	09/20/02	18.21	20.88	21.48	0.60	-2.67	-2.81
PH-14	10/28/02	18.21	21.11	21.70	0.59	-2.90	-3.04
PH-14	11/25/02	18.21	20.9	20.91	0.01	-2.69	-2.69
PH-14	12/19/02	18.21	20.03	20.70	0.67	-1.82	-1.98
PH-14	01/13/03	18.21	20.24	20.25	0.01	-2.03	-2.03
PH-14	02/05/03	18.21	20.3	20.35	0.05	-2.09	-2.10
PH-14	03/11/03	18.21	19.8	19.80	0.00	-1.59	-1.59
PH-14	04/25/03	18.21	19.1	19.25	0.15	-0.89	-0.93
PH-14	05/28/03	18.21	19	19.15	0.15	-0.79	-0.83
PH-14	06/16/03	18.21	18.41	19.60	1.19	-0.20	-0.49
PH-14	07/21/03	18.21	17.85	17.95	0.10	0.36	0.34
PH-14	08/05/03	18.21	18.1	18.30	0.20	0.11	0.06

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PH-14	09/08/03	18.21	18.32	19.88	1.56	-0.11	-0.48
PH-14	11/07/03	18.21	18.56	19.75	1.19	-0.35	-0.64
PH-14	12/16/03	18.21	19.43	19.74	0.31	-1.22	-1.29
PH-14	01/12/04	18.21	17.95	18.33	0.38	0.26	0.17
PH-14	02/24/04	18.21	18.33	18.63	0.30	-0.12	-0.19
PH-14	03/23/04	18.21	18.29	19.71	1.42	-0.08	-0.42
PH-14	04/22/04	18.21	17.65	18.10	0.45	0.56	0.45
PH-14	05/10/04	18.21	17.17	18.40	1.23	1.04	0.74
PH-14	06/08/04	18.21	17.7	18.43	0.73	0.51	0.33
PH-14	07/15/04	18.21	18.18	18.35	0.17	0.03	-0.01
PH-14	08/24/04	18.21	17.79	18.00	0.21	0.42	0.37
PH-14	09/21/04	18.21	17.8	18.40	0.60	0.41	0.27
PH-14	10/04/04	18.21	17.81	18.43	0.62	0.40	0.25
PH-14	11/10/04	18.21	17.78	17.78	0.00	0.43	0.43
PH-14	12/14/04	18.21	17.98	18.00	0.02	0.23	0.23
PH-14	01/11/05	18.21	17.82	17.85	0.03	0.39	0.38
PH-14	02/25/05	18.21	17.85	18.14	0.29	0.36	0.29
PH-14	03/18/05	18.21	17.72	18.77	1.05	0.49	0.24
PH-14	05/18/05	18.21	17.47	17.72	0.25	0.74	0.68
PH-14	08/02/05	18.21	18.08	19.40	1.32	0.13	-0.19
PH-14	10/24/05	18.21	18.6	19.45	0.85	-0.39	-0.59
PH-14	01/10/06	18.21	18.81	20.32	1.51	-0.60	-0.96
PH-14	01/25/06	18.21	18.7	18.97	0.27	-0.49	-0.55
PH-14	02/06/06	18.21	18.53	18.93	0.40	-0.32	-0.42
PH-14	02/17/06	18.21	18.3	18.88	0.58	-0.09	-0.23
PH-14	03/22/06	18.21	18.59	19.03	0.44	-0.38	-0.49
PH-14	03/30/06	18.21	18.69	19.10	0.41	-0.48	-0.58
PH-14	04/21/06	18.21	18.91	19.30	0.39	-0.70	-0.79
PH-14	04/28/06	18.21	18.96	19.28	0.32	-0.75	-0.83
PH-14	06/01/06	18.21	17.68	19.24	1.56	0.53	0.16
PH-14	06/23/06	18.21	17.75	18.15	0.40	0.46	0.36
PH-14	07/10/06	18.21	18.42	18.94	0.52	-0.21	-0.33
PH-14	08/14/06	18.21	16.72	17.10	0.38	1.49	1.40

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PH-14	09/22/06	18.21	15.4	16.28	0.88	2.81	2.60
PH-14	11/06/06	18.21	17.28	17.43	0.15	0.93	0.89
PH-14	01/02/07	18.21	17.02	17.25	0.23	1.19	1.13
PH-14	04/02/07	18.21	16.86	17.11	0.25	1.35	1.29
PH-14	07/02/07	18.21	16.68	16.82	0.14	1.53	1.50
PH-14	10/01/07	18.21	17.63	17.82	0.19	0.58	0.53
PH-14	03/24/08	24.91	24.45	24.83	0.38	0.46	0.37
PH-14	06/23/08	24.91	24.09	24.85	0.76	0.82	0.64
PH-14	09/02/08	24.91	24.55	25.28	0.73	0.36	0.18
PH-14	12/02/08	24.91	24.87	26.04	1.17	0.04	-0.24
PH-14	03/17/09	24.91	24.71	25.82	1.11	0.20	-0.07
PH-14	05/12/09	24.91	24.63	25.33	0.70	0.28	0.11
PH-14	09/08/09	24.91	23.69	23.98	0.29	1.22	1.15
PH-14	11/02/09	24.91	23.3	23.54	0.24	1.61	1.55
PH-14	01/04/10	24.91	22.9	23.15	0.25	2.01	1.95
PH-14	04/07/10	24.91	22.31	22.42	0.11	2.60	2.57
PH-14	09/13/10	24.91	23.89	24.05	0.16	1.02	0.98
PH-14	12/13/10	24.91	24.28	25.10	0.82	0.63	0.43
PH-14	03/07/11	24.91	24.56	25.23	0.67	0.35	0.19
PH-14	06/07/11	24.91	23.81	24.55	0.74	1.10	0.92
PH-14	08/15/11	24.91	24.14	24.72	0.58	0.77	0.63
PH-14	12/05/11	24.91	23.02	23.15	0.13	1.89	1.86
PH-14	02/28/12	24.91	23.62	23.77	0.15	1.29	1.25
PH-14	05/07/12	24.91	24.17	24.34	0.17	0.74	0.70
PH-14	07/11/12	24.91	24.53	24.71	0.18	0.38	0.34
PH-14	12/03/12	24.91	24.42	25.38	0.96	0.49	0.26
PH-14	03/20/13	24.91	24.47	25.44	0.97	0.44	0.21
PH-14	06/19/13	24.91	24.28	24.45	0.17	0.63	0.59
PH-14	08/29/13	24.91	23.18	23.42	0.24	1.73	1.67
PH-14	12/03/13	24.91	24.15	24.21	0.06	0.76	0.75
PH-14	02/17/14	24.91	23.92	23.92	0.00	0.99	0.99
PH-14	05/12/14	24.91	22.92	22.92	0.00	1.99	1.99
PH-14	08/18/14	24.91	23.42	23.42	0.00	1.49	1.49
PH-14	12/01/14	24.91	24.13	24.13	0.00	0.78	0.78
PH-14	01/18/15	24.91	23.85	23.85	0.00	1.06	1.06
PH-14	05/13/15	24.91	23.35	23.35	0.00	1.56	1.56
PH-14	08/10/15	24.91	23.72	23.72	0.00	1.19	1.19
PH-14	12/07/15	24.91	24.03	24.03	0.00	0.88	0.88
PH-14	03/07/16	24.91	23.7	23.7	0.00	1.21	1.21
PH-14	05/09/16	24.91	23.76	23.76	0.00	1.15	1.15
PH-14	08/22/16	24.91	24.26	24.26	0.00	0.65	0.65
PH-14	11/29/16	24.91	24.9	24.9	0.00	0.01	0.01
PH-14	02/20/17	24.91	24.8	24.81	0.01	0.11	0.11
PH-14	05/08/17	24.91	24.22	24.22	0.00	0.69	0.69
PH-14	09/05/17	24.91	NM	23.57			1.34
PH-14	12/04/17	24.91	24.42	24.43	0.01	0.49	0.49
PH-14	03/26/18	24.91	NM	23.62			1.29
PH-14	06/18/18	24.91	NM	23.03			1.88
PH-14	09/10/18	24.91	NM	22.95			1.96
PH-14	12/04/18	24.91	NM	22.4			2.51
PH-14	06/03/19	24.91	NM	22.69			2.22
PH-14	09/10/19	24.91	NM	23.11			1.80

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Table F1: Groundwater Gauging Results
MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
PH-15	02/25/99	19.77	18.68	20.77	2.09	1.09	0.59
PH-15	03/24/99	19.77	18.48	20.55	2.07	1.29	0.79
PH-15	04/27/99	17.53	18.17	20.44	2.27	-0.64	-1.18
PH-15	05/25/99	17.53	18.04	20.34	2.30	-0.51	-1.06
PH-15	06/18/99	17.53	18.16	20.40	2.24	-0.63	-1.17
PH-15	07/23/99	17.53	18.25	20.43	2.18	-0.72	-1.24
PH-15	08/24/99	17.53	18.50	20.59	2.09	-0.97	-1.47
PH-15	09/22/99	17.53	17.95	20.19	2.24	-0.42	-0.96
PH-15	10/22/99	17.53	17.32	19.89	2.57	0.21	-0.41
PH-15	11/24/99	17.53	17.58	19.95	2.37	-0.05	-0.62
PH-15	12/15/99	17.53	17.73	20.00	2.27	-0.20	-0.74
PH-15	01/27/00	17.53	NM	NM			
PH-15	02/17/00	17.53	18.27	20.30	2.03	-0.74	-1.23
PH-15	03/29/00	17.53	17.52	19.84	2.32	0.01	-0.55
PH-15	04/26/00	17.53	17.21	19.62	2.41	0.32	-0.26
PH-15	05/23/00	17.53	17.13	19.50	2.37	0.40	-0.17
PH-15	06/22/00	17.53	17.37	19.62	2.25	0.16	-0.38
PH-15	07/25/00	17.53	17.80	19.86	2.06	-0.27	-0.76
PH-15	08/30/00	17.53	17.89	19.94	2.05	-0.36	-0.85
PH-15	09/14/00	17.53	17.63	19.74	2.11	-0.10	-0.61
PH-15	10/27/00	17.53	17.26	19.27	2.01	0.27	-0.21
PH-15	11/16/00	17.53	17.45	19.51	2.06	0.08	-0.41
PH-15	12/28/00	17.53	17.88	19.75	1.87	-0.35	-0.80
PH-15	01/25/01	17.53	18.15	19.94	1.79	-0.62	-1.05
PH-15	02/22/01	17.53	18.17	19.89	1.72	-0.64	-1.05
PH-15	03/19/01	17.53	18.05	19.84	1.79	-0.52	-0.95
PH-15	04/30/01	17.53	17.38	19.43	2.05	0.15	-0.34
PH-15	05/21/01	17.53	17.68	19.60	1.92	-0.15	-0.61
PH-15	06/11/01	17.53	17.65	19.60	1.95	-0.12	-0.59
PH-15	07/26/01	17.53	17.85	19.73	1.88	-0.32	-0.77
PH-15	08/24/01	17.53	18.31	20.98	2.67	-0.78	-1.42
PH-15	09/17/01	17.53	18.54	20.08	1.54	-1.01	-1.38
PH-15	10/31/01	17.53	19.06	20.31	1.25	-1.53	-1.83
PH-15	11/14/01	17.53	19.18	20.37	1.19	-1.65	-1.94
PH-15	12/19/01	17.53	19.51	20.55	1.04	-1.98	-2.23
PH-15	01/24/02	17.53	19.53	21.25	1.72	-2.00	-2.41
PH-15	02/26/02	17.53	19.99	22.02	2.03	-2.46	-2.95
PH-15	03/19/02	17.53	20.43	22.45	2.02	-2.90	-3.38
PH-15	04/24/02	17.53	20.65	22.65	2.00	-3.12	-3.60
PH-15	05/13/02	17.53	20.49	22.29	1.80	-2.96	-3.39
PH-15	07/25/02	17.53	20.95	22.85	1.90	-3.42	-3.88
PH-15	09/20/02	17.53	21.23	23.00	1.77	-3.70	-4.12
PH-15	10/28/02	17.53	21.34	22.71	1.37	-3.81	-4.14
PH-15	11/25/02	17.53	21.10	22.35	1.25	-3.57	-3.87
PH-15	12/19/02	17.53	20.70	21.70	1.00	-3.17	-3.41
PH-15	01/13/03	17.53	20.35	21.75	1.40	-2.82	-3.16
PH-15	02/05/03	17.53	19.15	21.55	2.40	-1.62	-2.20
PH-15	03/11/03	17.53	19.94	21.30	1.36	-2.41	-2.74
PH-15	04/25/03	17.53	19.31	20.57	1.26	-1.78	-2.08
PH-15	05/28/03	17.53	19.20	20.45	1.25	-1.67	-1.97
PH-15	06/16/03	17.53	19.15	20.38	1.23	-1.62	-1.92
PH-15	07/21/03	17.53	18.42	19.86	1.44	-0.89	-1.24
PH-15	08/05/03	17.53	18.67	20.15	1.48	-1.14	-1.50
PH-15	09/08/03	17.53	19.22	20.25	1.03	-1.69	-1.94

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Table F1: Groundwater Gauging Results
MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
PH-15	11/07/03	17.53	19.25	20.35	1.10	-1.72	-1.98
PH-15	12/16/03	17.53	18.95	20.07	1.12	-1.42	-1.69
PH-15	01/12/04	17.53	16.40	18.06	1.66	1.13	0.73
PH-15	02/24/04	17.53	16.85	18.35	1.50	0.68	0.32
PH-15	03/23/04	17.53	17.35	18.70	1.35	0.18	-0.14
PH-15	04/22/04	17.53	16.75	18.40	1.65	0.78	0.38
PH-15	05/10/04	17.53	16.52	18.29	1.77	1.01	0.59
PH-15	06/08/04	17.53	16.81	18.45	1.64	0.72	0.33
PH-15	07/15/04	17.53	16.75	18.37	1.62	0.78	0.39
PH-15	08/24/04	17.53	16.46	18.31	1.85	1.07	0.63
PH-15	09/21/04	17.53	16.66	18.45	1.79	0.87	0.44
PH-15	10/04/04	17.53	16.60	18.40	1.80	0.93	0.50
PH-15	11/10/04	17.53	17.11	17.13	0.02	0.42	0.42
PH-15	12/12/04	17.53	16.97	16.98	0.01	0.56	0.56
PH-15	01/11/05	17.53	16.85	16.85	0.00	0.68	0.68
PH-15	02/25/05	17.53	16.99	16.99	0.00	0.54	0.54
PH-15	03/18/05	17.53	17.11	17.11	0.00	0.42	0.42
PH-15	05/18/05	17.53	16.60	16.60	0.00	0.93	0.93
PH-15	08/02/05	17.53	17.36	17.37	0.01	0.17	0.17
PH-15	10/24/05	17.53	17.78	17.78	0.00	-0.25	-0.25
PH-15	01/10/06	17.53	18.09	18.09	0.00	-0.56	-0.56
PH-15	01/25/06	17.53	17.60	17.62	0.02	-0.07	-0.07
PH-15	02/06/06	17.53	17.66	17.67	0.01	-0.13	-0.13
PH-15	02/17/06	17.53	17.49	17.51	0.02	0.04	0.04
PH-15	03/22/06	17.53	17.79	17.81	0.02	-0.26	-0.26
PH-15	03/30/06	17.53	17.87	17.88	0.01	-0.34	-0.34
PH-15	04/21/06	17.53	18.08	18.10	0.02	-0.55	-0.55
PH-15	04/28/06	17.53	18.07	18.09	0.02	-0.54	-0.54
PH-15	06/01/06	17.53	17.92	17.95	0.03	-0.39	-0.40
PH-15	06/23/06	17.53	17.75	17.78	0.03	-0.22	-0.23
PH-15	07/10/06	17.53	17.58	17.61	0.03	-0.05	-0.06
PH-15	08/14/06	17.53	16.30	16.33	0.03	1.23	1.22
PH-15	11/06/06	17.53	16.31	16.31	0.00	1.22	1.22
PH-15	01/02/07	17.53	16.08	16.24	0.16	1.45	1.41
PH-15	Well Abandoned 3/1/07	17.53			0.00	1.50	1.50

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** Well height readjusted and resurveyed.

Table F1: Groundwater Gauging Results
MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
PH-18	02/25/99	19.47	19.41	21.80	2.39	0.06	-0.51
PH-18	03/25/99	19.47	19.29	21.07	1.78	0.18	-0.25
PH-18	04/27/99	19.47	18.92	20.70	1.78	0.55	0.12
PH-18	05/25/99	19.47	18.82	20.55	1.73	0.65	0.23
PH-18	06/18/99	19.47	18.92	20.60	1.68	0.55	0.15
PH-18	07/23/99	19.47	19.02	20.67	1.65	0.45	0.05
PH-18	08/24/99	19.47	19.25	20.89	1.64	0.22	-0.17
PH-18	09/22/99	19.47	18.74	20.30	1.56	0.73	0.36
PH-18	10/22/99	19.47	18.21	19.80	1.59	1.26	0.88
PH-18	11/24/99	19.47	18.39	20.05	1.66	1.08	0.68
PH-18	12/15/99	19.47	18.50	20.11	1.61	0.97	0.58
PH-18	01/27/00	19.47	NM	NM			
PH-18	02/17/00	19.47	19.02	20.57	1.55	0.45	0.08
PH-18	03/29/00	19.47	18.34	19.84	1.50	1.13	0.77
PH-18	04/26/00	19.47	18.05	19.58	1.53	1.42	1.05
PH-18	05/23/00	19.47	17.98	19.49	1.51	1.49	1.13
PH-18	06/22/00	19.47	18.05	19.58	1.53	1.42	1.05
PH-18	07/25/00	19.47	18.59	20.06	1.47	0.88	0.53
PH-18	08/30/00	19.47	18.64	20.09	1.45	0.83	0.48
PH-18	09/14/00	19.47	18.41	19.84	1.43	1.06	0.72
PH-18	10/27/00	19.47	17.98	19.35	1.37	1.49	1.16
PH-18	11/16/00	19.47	18.28	19.64	1.36	1.19	0.86
PH-18	12/28/00	19.47	18.64	19.99	1.35	0.83	0.51
PH-18	01/25/01	19.47	18.92	20.27	1.35	0.55	0.23
PH-18	02/22/01	19.47	18.91	20.14	1.23	0.56	0.26
PH-18	03/19/01	19.47	18.79	20.06	1.27	0.68	0.38
PH-18	04/30/01	19.47	18.25	19.33	1.08	1.22	0.96
PH-18	05/21/01	19.47	18.48	19.72	1.24	0.99	0.69
PH-18	06/11/01	19.47	18.45	19.71	1.26	1.02	0.72
PH-18	07/26/01	19.47	18.61	19.88	1.27	0.86	0.56
PH-18	08/24/01	19.47	19.04	20.34	1.30	0.43	0.12
PH-18	09/17/01	19.47	19.23	20.55	1.32	0.24	-0.08
PH-18	10/31/01	19.47	19.71	20.91	1.20	-0.24	-0.53
PH-18	11/14/01	19.47	19.80	21.02	1.22	-0.33	-0.62
PH-18	12/19/01	19.47	20.05	21.31	1.26	-0.58	-0.88
PH-18	01/24/02	19.47	20.28	21.58	1.30	-0.81	-1.12
PH-18	02/26/02	19.47	20.80	22.10	1.30	-1.33	-1.64
PH-18	03/19/02	19.47	21.21	22.50	1.29	-1.74	-2.05
PH-18	04/24/02	19.47	21.40	22.78	1.38	-1.93	-2.26
PH-18	05/13/02	19.47	21.18	22.49	1.31	-1.71	-2.02
PH-18	07/25/02	19.47	22.14	24.60	2.46	-2.67	-3.26
PH-18	09/20/02	19.47	21.75	24.13	2.38	-2.28	-2.85
PH-18	10/28/02	19.47	22.04	23.31	1.27	-2.57	-2.87
PH-18	11/25/02	19.47	21.70	23.00	1.30	-2.23	-2.54
PH-18	12/19/02	19.47	21.43	22.65	1.22	-1.96	-2.25
PH-18	01/13/03	19.47	21.10	22.37	1.27	-1.63	-1.93
PH-18	02/05/03	19.47	20.85	22.12	1.27	-1.38	-1.68
PH-18	03/11/03	19.47	20.60	21.90	1.30	-1.13	-1.44
PH-18	04/25/03	19.47	19.99	21.23	1.24	-0.52	-0.82
PH-18	05/28/03	19.47	19.90	21.06	1.16	-0.43	-0.71
PH-18	06/16/03	19.47	19.83	21.10	1.27	-0.36	-0.66
PH-18	07/21/03	19.47	19.15	20.38	1.23	0.32	0.02
PH-18	08/05/03	19.47	19.31	20.55	1.24	0.16	-0.14
PH-18	09/08/03	19.47	19.88	21.03	1.15	-0.41	-0.69

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** Well height readjusted and resurveyed.

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From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
PH-18	11/07/03	19.47	19.91	21.09	1.18	-0.44	-0.72
PH-18	12/16/03	19.47	19.55	20.75	1.20	-0.08	-0.37
PH-18	01/12/04	19.47	18.85	20.05	1.20	0.62	0.33
PH-18	02/24/04	19.47	19.30	20.48	1.18	0.17	-0.11
PH-18	03/23/04	19.47	NA	NA			
PH-18	04/22/04	19.47	18.85	19.95	1.10	0.62	0.36
PH-18	05/10/04	19.47	18.65	19.70	1.05	0.82	0.57
PH-18	06/08/04	19.47	18.90	19.95	1.05	0.57	0.32
PH-18	07/15/04	19.47	18.95	20.00	1.05	0.52	0.27
PH-18	08/24/04	19.47	18.55	19.52	0.97	0.92	0.69
PH-18	09/21/04	19.47	18.73	19.71	0.98	0.74	0.50
PH-18	10/04/04	19.47	18.65	19.55	0.90	0.82	0.60
PH-18	11/10/04	19.47	18.77	19.74	0.97	0.70	0.47
PH-18	12/14/04	19.47	18.66	19.70	1.04	0.81	0.56
PH-18	01/11/05	19.47	18.61	19.62	1.01	0.86	0.62
PH-18	02/25/05	19.47	18.74	19.85	1.11	0.73	0.46
PH-18	03/18/05	19.47	18.83	19.96	1.13	0.64	0.37
PH-18	05/18/05	19.47	18.36	19.39	1.03	1.11	0.86
PH-18	08/02/05	19.47	19.14	20.09	0.95	0.33	0.10
PH-18	10/24/05	19.47	19.61	19.78	0.17	-0.14	-0.18
PH-18	01/10/06	19.47	19.93	20.59	0.66	-0.46	-0.62
PH-18	05/08/06	19.47	19.87	20.30	0.43	-0.40	-0.50
PH-18	07/10/06	19.47	19.43	19.91	0.48	0.04	-0.08
PH-18	11/06/06	19.47	18.25	18.28	0.03	1.22	1.21
PH-18	01/02/07	19.47	18.09	18.10	0.01	1.38	1.38
PH-18	04/02/07	19.47	18.04	18.04	0.00	1.43	1.43
PH-18	07/02/07	19.47	17.87	17.88	0.01	1.60	1.60
PH-18	10/01/07	19.47	18.71	18.73	0.02	0.76	0.76
PH-18	03/24/08	18.02	17.42	18.25	0.83	0.60	0.40
PH-18	06/23/08	18.02	17.23	18.02	0.79	0.79	0.60
PH-18	09/02/08	18.02	17.70	18.56	0.86	0.32	0.11
PH-18	12/02/08	18.02	18.21	19.30	1.09	-0.19	-0.45
PH-18	03/17/09	18.02	17.90	18.94	1.04	0.12	-0.13
PH-18	05/12/09	18.02	17.77	18.73	0.96	0.25	0.02
PH-18	09/08/09	18.02	16.70	17.57	0.87	1.32	1.11
PH-18	11/02/09	18.02	16.40	17.21	0.81	1.62	1.43
PH-18	01/04/10	18.02	15.99	16.01	0.02	2.03	2.03
PH-18	04/07/10	18.02	15.34	15.70	0.36	2.68	2.59

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

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From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
PH-18	09/13/10	18.02	17.00	17.61	0.61	1.02	0.87
PH-18	12/13/10	18.02	17.44	18.03	0.59	0.58	0.44
PH-18	03/07/11	18.02	17.77	18.67	0.90	0.25	0.03
PH-18	06/07/11	18.02	16.96	17.72	0.76	1.06	0.88
PH-18	08/15/11	18.02	17.31	17.64	0.33	0.71	0.63
PH-18	12/06/11	18.02	16.06	16.77	0.71	1.96	1.79
PH-18	02/28/12	18.02	16.77	17.28	0.51	1.25	1.13
PH-18	05/07/12	18.02	17.31	17.82	0.51	0.71	0.59
PH-18	07/11/12	18.02	17.61	18.65	1.04	0.41	0.16
PH-18	12/03/12	18.02	17.71	18.42	0.71	0.31	0.14
PH-18	03/19/13	18.02	17.52	18.29	0.77	0.50	0.32
PH-18	06/19/13	18.02	17.36	18.13	0.77	0.66	0.48
PH-18	08/29/13	18.02	16.25	16.25	0.00	1.77	1.77
PH-18	12/03/13	18.02	17.20	17.91	0.71	0.82	0.65
PH-18	02/17/14	18.02	17.17	17.63	0.46	0.85	0.74
PH-18	05/12/14	18.02	16.09	16.28	0.19	1.93	1.88
PH-18	08/18/14	18.02	16.55	16.60	0.05	1.47	1.46
PH-18	12/01/14	18.02	17.30	17.40	0.10	0.72	0.70
PH-18	01/18/15	18.02	16.81	16.82	0.01	1.21	1.21
PH-18	05/13/15	18.02	16.42	16.44	0.02	1.60	1.60
PH-18	08/10/15	18.02	16.75	16.75	0.00	1.27	1.27
PH-18	12/07/15	18.02	17.2	17.2	0.00	0.82	0.82
PH-18	03/07/16	18.02	16.79	16.79	0.00	1.23	1.23
PH-18	05/09/16	18.02	17	17	0.00	1.02	1.02
PH-18	08/22/16	18.02	17.42	17.43	0.01	0.60	0.60
PH-18	11/29/16	18.02	17.61	17.61	0.00	0.41	0.41
PH-18	02/20/17	18.02	17.83	18.44	0.61	0.19	0.04
PH-18	05/08/17	18.02	17.4	18	0.60	0.62	0.52
PH-18	09/05/17	18.02	16.66	17.38	0.72	1.36	1.24
PH-18	12/04/17	18.07	17.67	17.73	0.06	0.40	0.39
PH-18	03/26/18	18.02	16.57	17.45	0.88	1.45	1.31
PH-18	06/18/18	18.02	15.80	16.84	1.04	2.22	2.05
PH-18	09/10/18	18.02	16.05	17.02	0.97	1.97	1.81
PH-18	12/04/18	18.02	15.43	16.44	1.01	2.59	2.43
PH-18	06/03/19	18.02	15.71	16.61	0.90	2.31	2.17
PH-18	09/10/19	18.02	16.11	16.88	0.77	1.91	1.77

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Table F1: Groundwater Gauging Results
MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
PH-20	03/24/99	20.59	20.48	22.22	1.74	0.11	-0.31
PH-20	04/27/99	20.59	20.14	21.89	1.75	0.45	0.03
PH-20	05/25/99	20.59	20.01	21.79	1.78	0.58	0.15
PH-20	06/18/99	20.59	20.11	21.84	1.73		0.06
PH-20	07/23/99	20.59	20.21	21.86	1.65	0.38	-0.02
PH-20	08/24/99	20.59	20.43	22.01	1.58	0.16	-0.22
PH-20	09/22/99	20.59	19.89	21.52	1.63	0.70	0.31
PH-20	10/22/99	20.59	19.37	21.12	1.75	1.22	0.80
PH-20	11/24/99	20.59	19.60	21.40	1.80	0.99	0.56
PH-20	12/15/99	20.59	19.72	21.45	1.73	0.87	0.45
PH-20	01/27/00	20.59	NM	NM			
PH-20	02/17/00	20.59	20.25	21.86	1.61	0.34	-0.05
PH-20	03/29/00	20.59	19.54	21.33	1.79	1.05	0.62
PH-20	04/26/00	20.59	19.26	21.02	1.76	1.33	0.91
PH-20	05/23/00	20.59	19.21	21.02	1.81	1.38	0.95
PH-20	06/22/00	20.59	19.39	21.14	1.75	1.20	0.78
PH-20	07/25/00	20.59	19.81	21.41	1.60	0.78	0.40
PH-20	08/30/00	20.59	19.88	21.44	1.56	0.71	0.34
PH-20	09/14/00	20.59	19.66	21.25	1.59	0.93	0.55
PH-20	10/27/00	20.59	19.16	20.76	1.60	1.43	1.05
PH-20	11/16/00	20.59	19.47	21.05	1.58	1.12	0.74
PH-20	12/28/00	20.59	19.86	21.37	1.51	0.73	0.37
PH-20	01/25/01	20.59	20.11	21.53	1.42	0.48	0.14
PH-20	02/22/01	20.59	20.09	21.49	1.40	0.50	0.16
PH-20	03/19/01	20.59	19.96	21.41	1.45	0.63	0.28
PH-20	04/30/01	20.59	19.39	20.84	1.45	1.20	0.85
PH-20	05/21/01	20.59	19.61	21.11	1.50	0.98	0.62
PH-20	06/11/01	20.59	19.60	21.09	1.49	0.99	0.63
PH-20	07/26/01	20.59	19.78	21.18	1.40	0.81	0.47
PH-20	08/24/01	20.59	20.21	21.54	1.33	0.38	0.06
PH-20	09/17/01	20.59	20.40	21.67	1.27	0.19	-0.11
PH-20	10/31/01	20.59	20.85	22.05	1.20	-0.26	-0.55
PH-20	11/14/01	20.59	20.96	22.28	1.32	-0.37	-0.69
PH-20	12/19/01	20.59	21.53	22.50	0.97	-0.94	-1.17
PH-20	01/24/02	20.59	21.47	22.84	1.37	-0.88	-1.21
PH-20	02/26/02	20.59	21.88	23.35	1.47	-1.29	-1.64
PH-20	03/19/02	20.59	22.29	23.96	1.67	-1.70	-2.10
PH-20	04/24/02	20.59	22.43	24.24	1.81	-1.84	-2.27
PH-20	05/13/02	20.59	22.30	24.02	1.72	-1.71	-2.12
PH-20	06/28/02	20.59	22.65	24.04	1.39	-2.06	-2.39
PH-20	07/25/02	20.59	22.88	24.31	1.43	-2.29	-2.63
PH-20	09/20/02	20.59	23.15	24.58	1.43	-2.56	-2.90
PH-20	10/28/02	20.59	23.17	24.55	1.38	-2.58	-2.91
PH-20	11/25/02	20.59	22.89	24.25	1.36	-2.30	-2.63
PH-20	12/19/02	20.59	22.65	24.00	1.35	-2.06	-2.38
PH-20	01/13/03	20.59	22.35	23.65	1.30	-1.76	-2.07
PH-20	02/05/03	20.59	22.10	23.40	1.30	-1.51	-1.82
PH-20	03/11/03	20.59	21.85	23.10	1.25	-1.26	-1.56
PH-20	04/08/03	20.59	21.42	22.61	1.19	-0.83	-1.12
PH-20	05/28/03	20.59	21.03	22.12	1.09	-0.44	-0.70
PH-20	06/16/03	20.59	21.07	22.18	1.11	-0.48	-0.75
PH-20	07/21/03	20.59	20.45	21.38	0.93	0.14	-0.08
PH-20	08/05/03	20.59	20.60	21.65	1.05	-0.01	-0.26
PH-20	09/08/03	20.59	21.08	22.38	1.30	-0.49	-0.80

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Table F1: Groundwater Gauging Results
MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
PH-20	11/07/03	20.59	21.11	22.22	1.11	-0.52	-0.79
PH-20	12/16/03	20.59	20.80	21.90	1.10	-0.21	-0.47
PH-20	01/12/04	20.59	19.99	21.56	1.57	0.60	0.22
PH-20	02/24/04	20.59	20.39	21.93	1.54	0.20	-0.17
PH-20	03/23/04	20.59	20.43	21.92	1.49	0.16	-0.20
PH-20	04/22/04	20.59	20.43	21.92	1.49	0.16	-0.20
PH-20	05/10/04	20.59	19.75	21.25	1.50	0.84	0.48
PH-20	06/08/04	20.59	19.97	21.50	1.53	0.62	0.25
PH-20	07/15/04	20.59	20.00	21.55	1.55	0.59	0.22
PH-20	08/24/04	20.59	19.63	21.11	1.48	0.96	0.60
PH-20	09/21/04	20.59	19.72	21.23	1.51	0.87	0.51
PH-20	10/04/04	20.59	19.74	21.25	1.51	0.85	0.49
PH-20	11/10/04	20.59	20.04	20.90	0.86	0.55	0.34
PH-20	12/14/04	20.59	20.12	20.42	0.30	0.47	0.40
PH-20	01/11/05	20.59	19.89	20.29	0.40	0.70	0.60
PH-20	02/25/05	20.59	20.18	20.27	0.09	0.41	0.39
PH-20	03/18/05	20.59	20.21	20.26	0.05	0.38	0.37
PH-20	05/18/05	20.59	19.49	20.55	1.06	1.10	0.85
PH-20	08/02/05	20.59	20.17	21.53	1.36	0.42	0.09
PH-20	10/24/05	20.59	20.60	21.83	1.23	-0.01	-0.31
PH-20	01/10/06	20.59	20.92	22.25	1.33	-0.33	-0.65
PH-20	01/25/06	20.59	20.59	21.58	0.99	0.00	-0.24
PH-20	02/06/06	20.59	20.70	20.96	0.26	-0.11	-0.17
PH-20	02/16/06	20.59	20.56	20.85	0.29	0.03	-0.04
PH-20	03/22/06	20.59	20.66	21.69	1.03	-0.07	-0.32
PH-20	03/30/06	20.59	20.79	21.74	0.95	-0.20	-0.43
PH-20	04/20/06	20.59	20.82	22.06	1.24	-0.23	-0.53
PH-20	04/27/06	20.59	20.90	21.15	0.25	-0.31	-0.37
PH-20	05/31/06	20.59	21.00	21.44	0.44	-0.41	-0.52
PH-20	06/12/06	20.59	20.84	21.55	0.71	-0.25	-0.42
PH-20	07/07/06	20.59	20.73	20.98	0.25	-0.14	-0.20
PH-20	07/10/06	20.59	20.40	21.56	1.16	0.19	-0.09
PH-20	08/14/06	20.59	20.53	20.57	0.04	0.06	0.05
PH-20	09/26/06	20.59	19.91	19.99	0.08	0.68	0.66
PH-20	11/06/06	20.59	19.40	19.71	0.31	1.19	1.12
PH-20	01/02/07	20.59	19.28	19.29	0.01	1.31	1.31
PH-20	04/02/07	20.59	19.06	20.32	1.26	1.53	1.23
PH-20	07/02/07	20.59	18.94	19.81	0.87	1.65	1.44
PH-20	10/01/07	20.59	19.78	20.46	0.68	0.81	0.65
PH-20	03/24/08	19.52	20.05	21.09	1.04	-0.53	-0.78
PH-20	06/23/08	19.52	18.76	19.95	1.19	0.76	0.47
PH-20	09/02/08	19.52	19.20	20.29	1.09	0.32	0.06
PH-20	12/02/08	19.52	19.64	20.73	1.09	-0.12	-0.38
PH-20	03/17/09	19.52	19.45	20.56	1.11	0.07	-0.20
PH-20	05/12/09	19.52	19.31	20.38	1.07	0.21	-0.05
PH-20	09/08/09	19.52	18.36	19.24	0.88	1.16	0.95
PH-20	11/02/09	19.52	18.03	18.89	0.86	1.49	1.28
PH-20	01/04/10	19.52	17.65	18.59	0.94	1.87	1.64
PH-20	04/07/10	19.52	17.04	17.82	0.78	2.48	2.29
PH-20	09/13/10	19.52	18.53	19.38	0.85	0.99	0.79
PH-20	12/13/10	19.52	18.90	19.82	0.92	0.62	0.40
PH-20	03/07/11	19.52	19.31	20.39	1.08	0.21	-0.05
PH-20	06/07/11	19.52	18.46	19.47	1.01	1.06	0.82
PH-20	08/15/11	19.52	18.99	19.13	0.14	0.53	0.50

* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

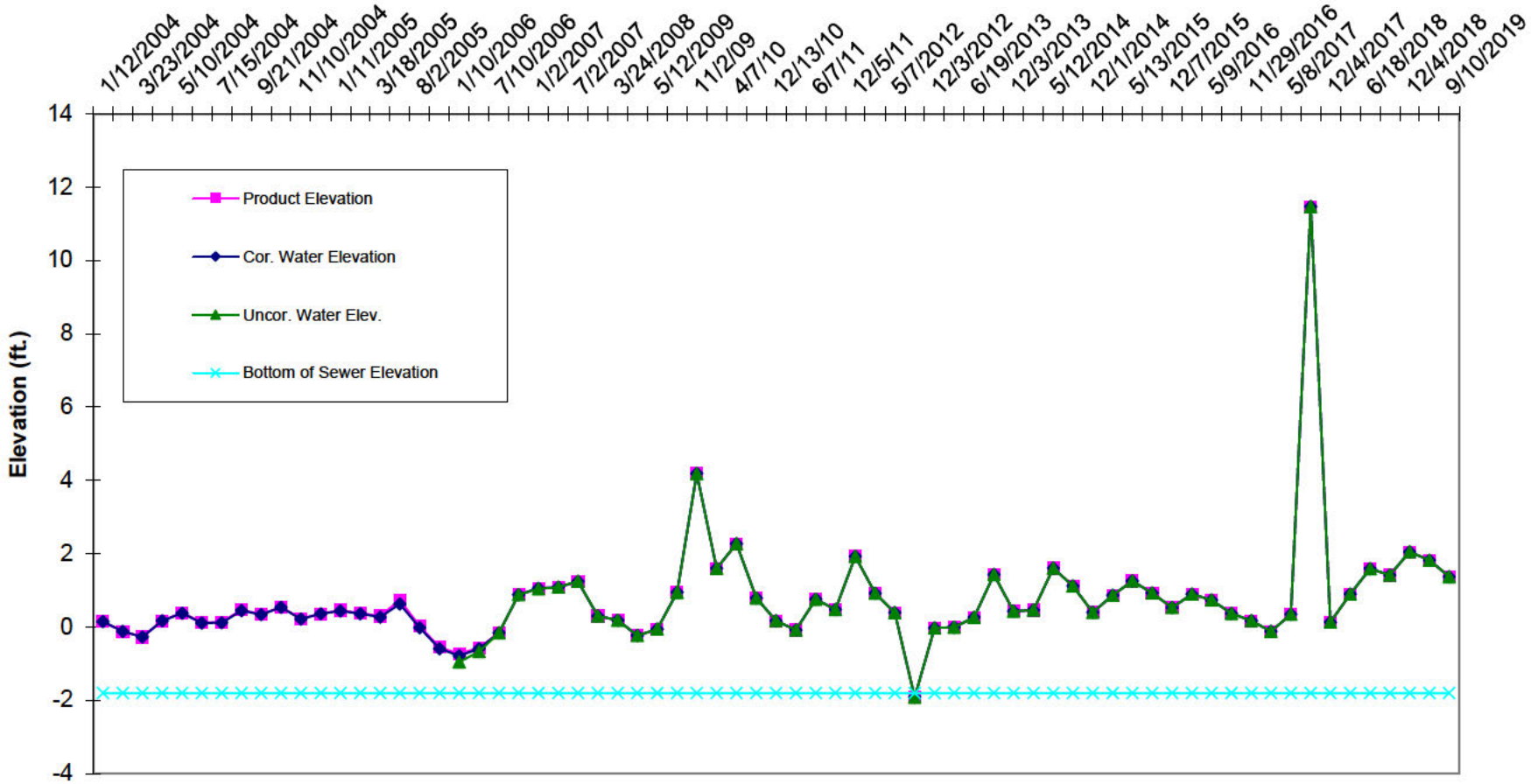
Table F1: Groundwater Gauging Results
MW-29, MW-32, MW-35, MW-36, PH-14, PH-15, PH-18 and PH-20
Former Defense Supply Center Philadelphia and the Passyunk Homes Area
From First Quarter 1999 through Third Quarter 2019

WELL	DATE	REFERENCED ELEVATION (FEET)	DEPTH TO LNAPL (FEET)	DEPTH TO WATER (FEET)	APPARENT LNAPL THICKNESS (FEET)	LNAPL ELEVATION (FEET)	CORRECTED GROUNDWATER ELEVATION (FEET)
PH-20	12/04/11	19.52	17.83	18.06	0.23	1.69	1.64
PH-20	02/28/12	19.52	18.45	18.56	0.11	1.07	1.04
PH-20	05/07/12	19.52	18.68	20.09	1.41	0.84	0.52
PH-20	07/11/12	19.52	19.09	20.25	1.16	0.43	0.16
PH-20	12/03/12	19.52	19.21	20.38	1.17	0.31	0.04
PH-20	03/19/13	19.52	18.98	20.17	1.19	0.54	0.27
PH-20	06/19/13	19.52	18.89	20.01	1.12	0.63	0.37
PH-20	08/29/13	19.52	18.04	18.08	0.04	1.48	1.47
PH-20	12/03/13	19.52	18.65	19.86	1.21	0.87	0.59
PH-20	2/17/2014	19.52	18.64	19.94	1.30	0.88	0.58
PH-20	5/12/2014	19.52	17.75	17.9	0.15	1.77	1.74
PH-20	8/18/2014	19.52	18.34	18.34	0	1.18	1.18
PH-20	12/1/2014	19.52	18.68	20	1.32	0.84	0.54
PH-20	2/18/2015	19.52	18.2	19.81	1.61	1.32	0.95
PH-20	5/13/2015	19.52	18.04	18.21	0.17	1.48	1.44
PH-20	8/10/2015	19.52	18.28	18.31	0.03	1.24	1.23
PH-20	12/7/2015	19.52	18.56	19.94	1.38	0.96	0.64
PH-20	3/7/2016	19.52	18.15	19.35	1.2	1.37	1.09
PH-20	5/9/2016	19.52	18.3	19.5	1.2	1.22	0.94
PH-20	8/22/2016	19.52	18.99	18.99	0	0.53	0.53
PH-20	11/29/2016	19.52	18.88	20.41	1.53	0.64	0.29
PH-20	2/20/2017	19.52	19.17	20.21	1.04	0.35	0.11
PH-20	5/8/2017	19.52	18.79	19	0.21	0.73	0.70
PH-20	9/5/2017	19.52	18.36	18.5	0.14	1.16	1.14
PH-20	12/4/2017	19.52	19.17	19.93	0.76	0.35	0.23
PH-20	3/26/2018	19.52	18.20	18.21	0.01	1.32	1.32
PH-20	6/18/2018	19.52	17.95	18.27	0.32	1.57	1.52
PH-20	9/10/2018	19.52	17.9	18.29	0.39	1.62	1.56
PH-20	12/4/2018	19.52	16.98	18.88	1.9	2.54	2.24
PH-20	6/3/2019	19.52	17.3	19.6	2.3	2.22	1.85
PH-20	9/10/2019	19.52	17.89	19.25	1.36	1.63	1.39

Note:
Pre-Q2 2017 groundwater elevation for LNAPL-bearing wells corrected using specific gravity of 0.77. Q2 2017 and later groundwater elevation for LNAPL-bearing wells corrected using specific gravity of 0.84 per site data.

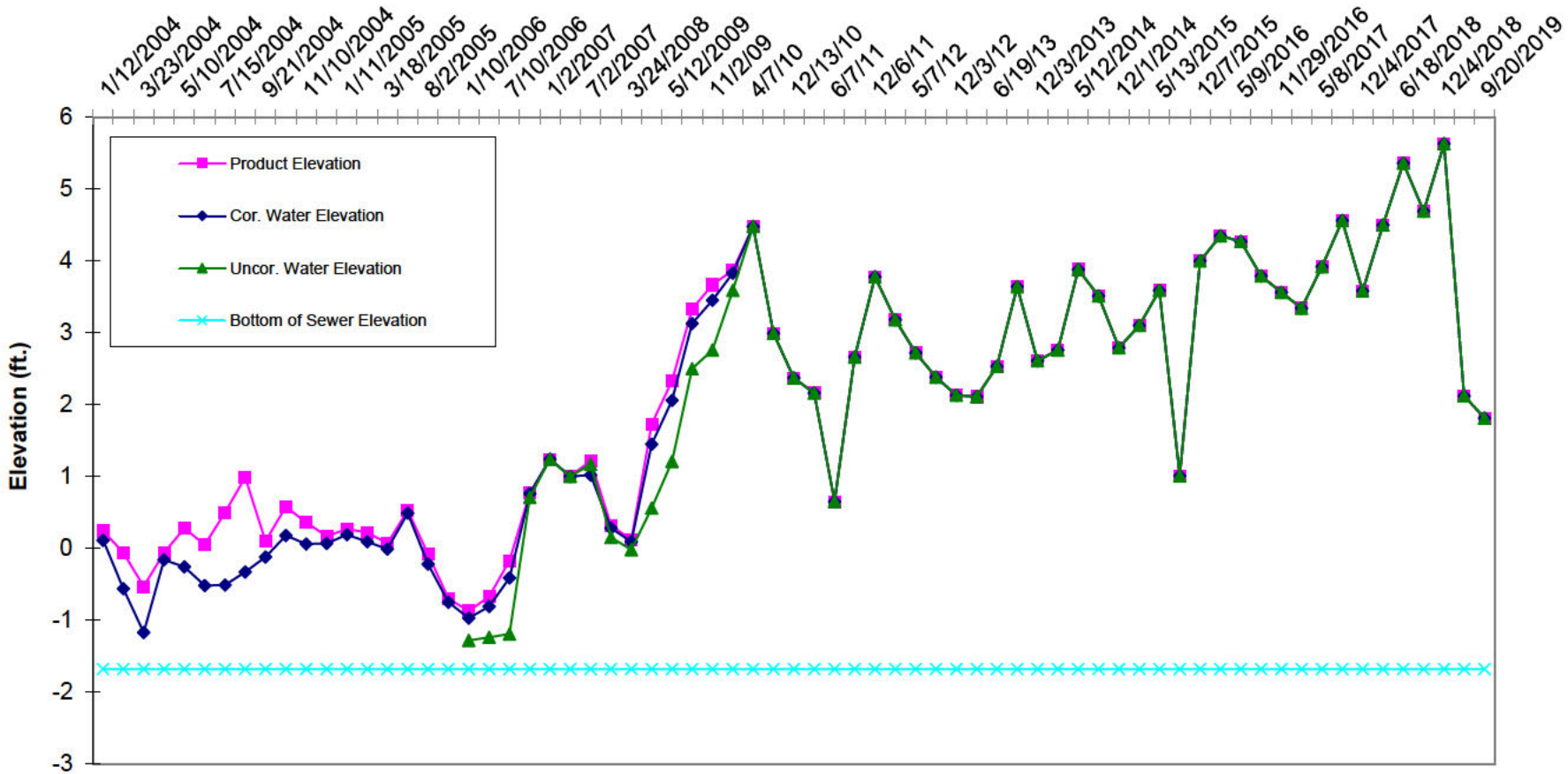
* All vertical elevations re-surveyed to NAVD 88 Vertical Datum on January 14, 2004.
** Well height readjusted and resurveyed.

Product Elevation in MWS-1 Compared to the Bottom of the Packer Avenue Sewer at Manhole A



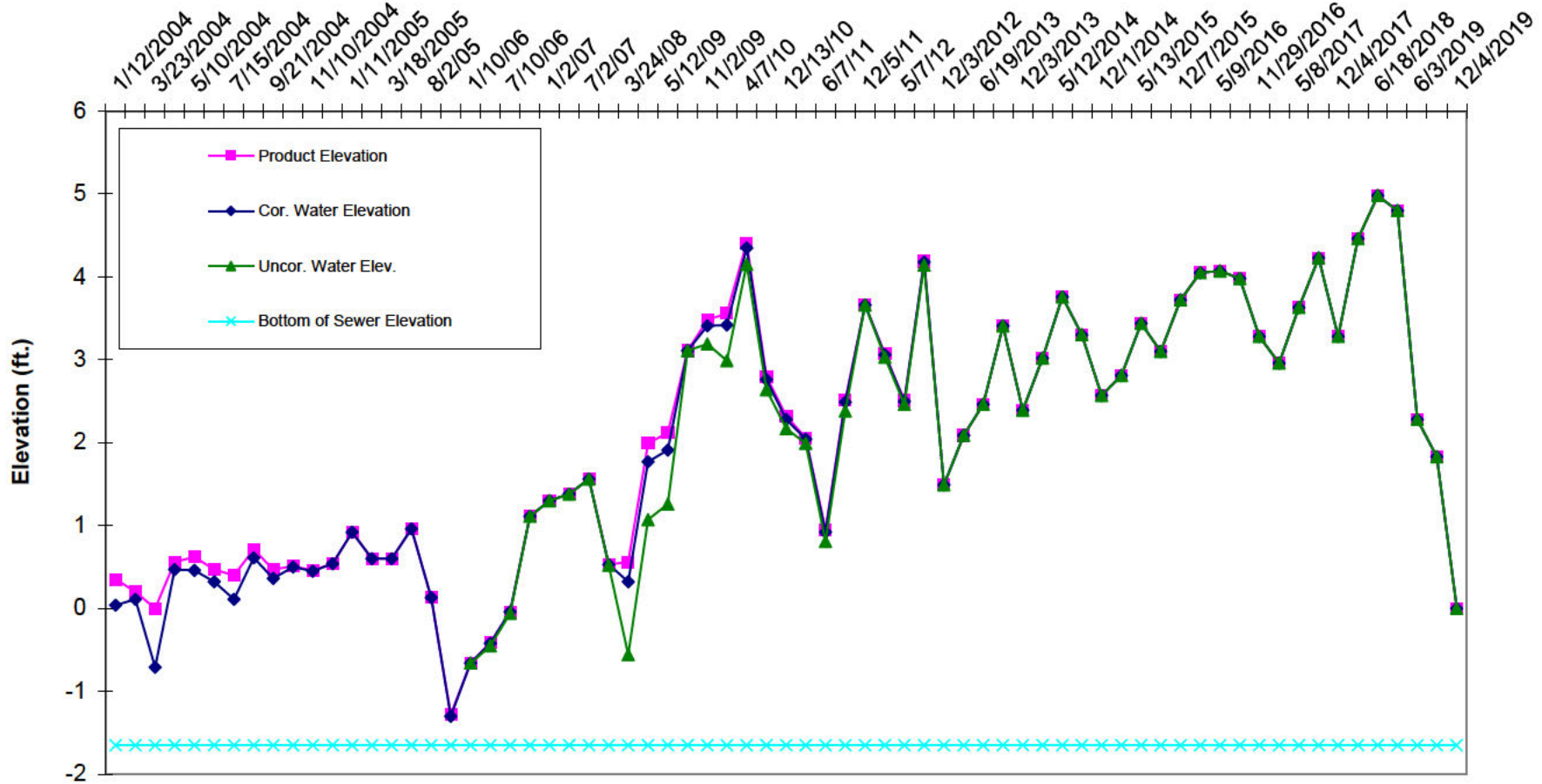
*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Product Elevation in RW-I Compared to the Bottom of the Packer Avenue Sewer at Manhole B



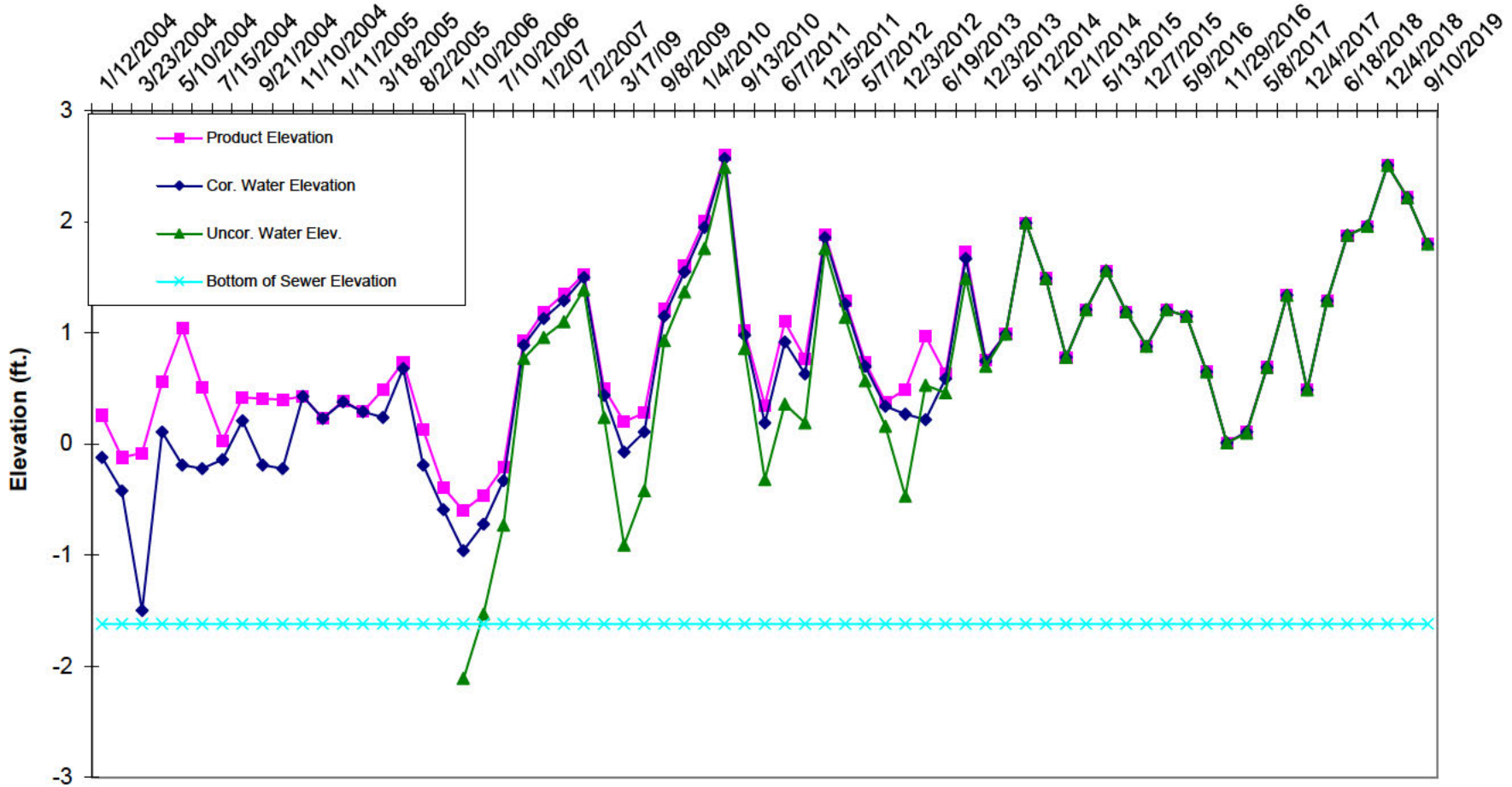
*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Product Elevation in RW-H Compared to the Bottom of the Packer Avenue Sewer at Manhole C



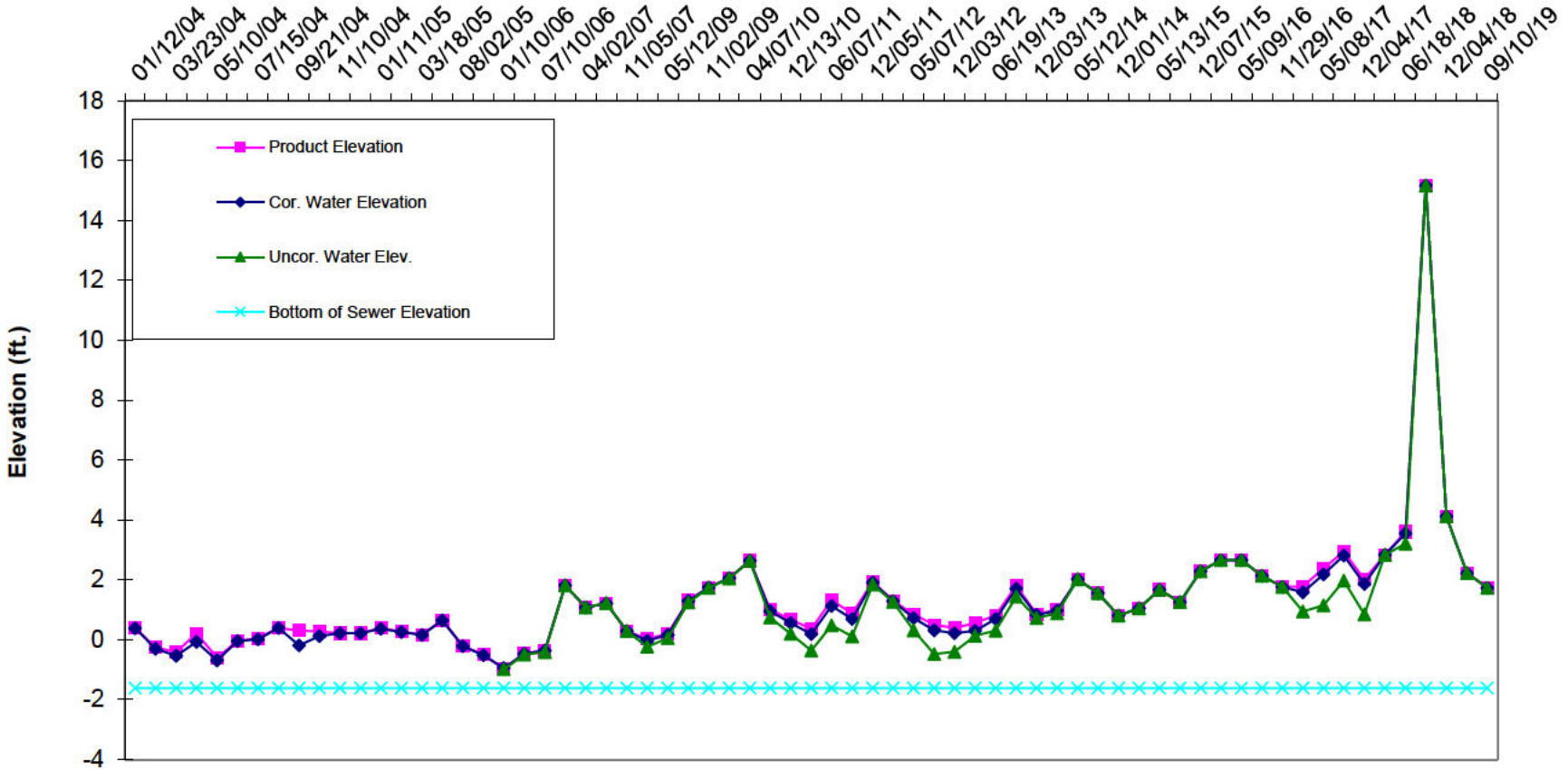
*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Product Elevation in PH-14 Compared to the Bottom of the Packer Avenue Sewer at Manhole D



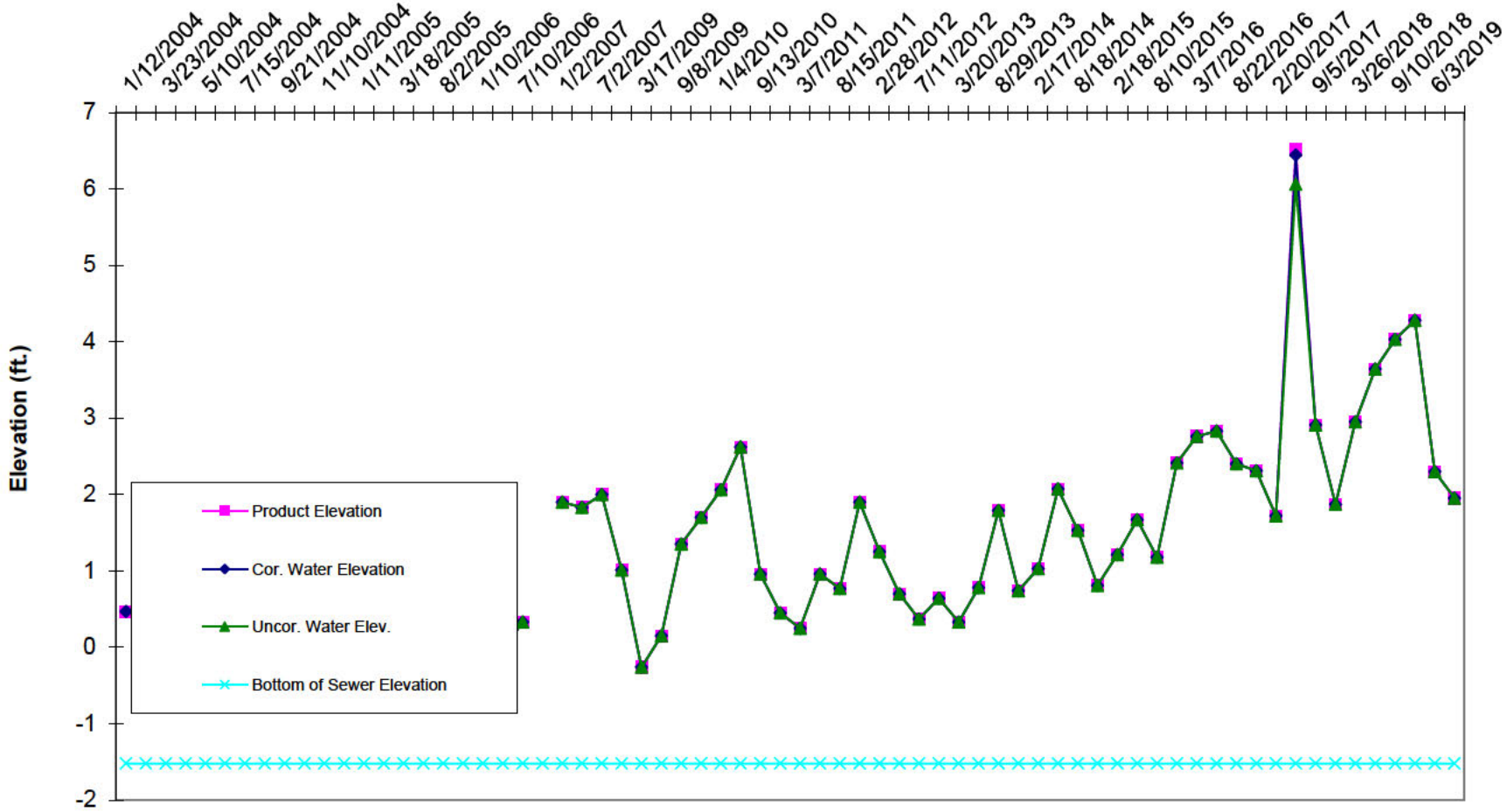
*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Product Elevation in RW-G Compared to the Bottom of the Packer Avenue Sewer at Manhole D



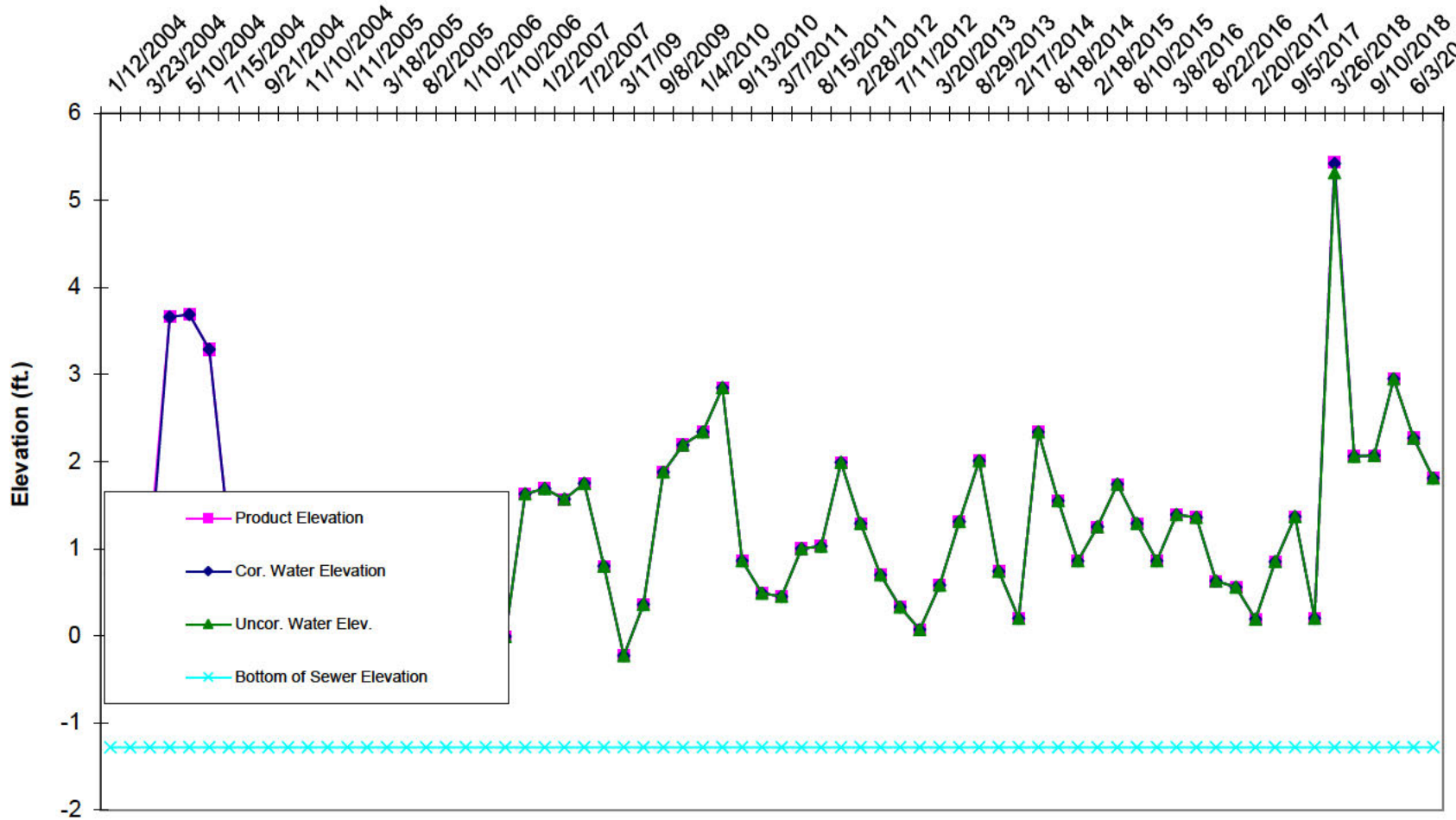
*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Product Elevation in RW-M Compared to the Bottom of the Packer Avenue Sewer at Manhole E



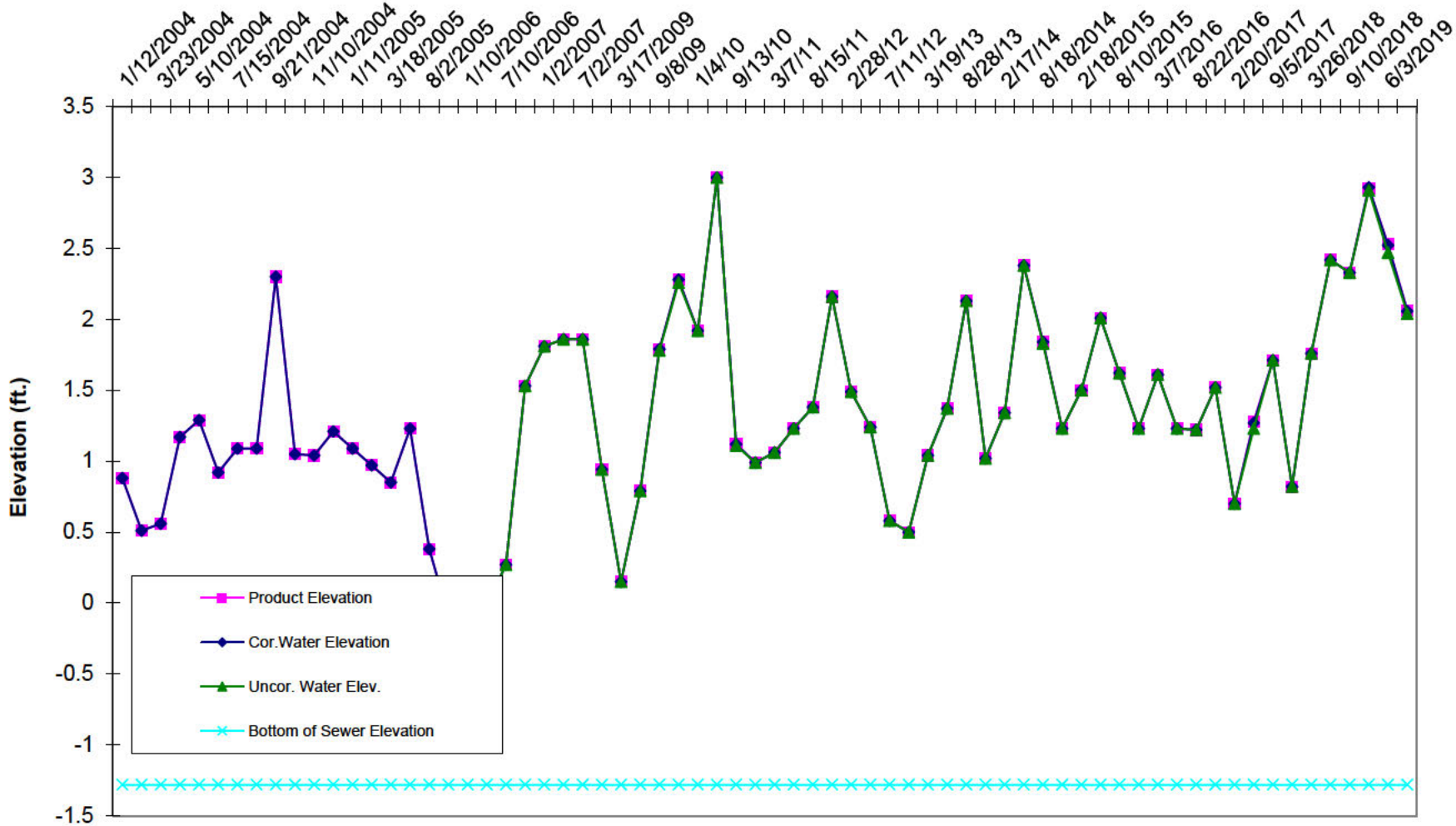
*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Product Elevation in MWS-3 Compared to the Bottom of the Packer Avenue Sewer at Manhole G



*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Product Elevation in MWS-4 Compared to the Bottom of the Packer Avenue Sewer at Manhole G



*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
MWS-1	1/12/2004	0.15	0.15		-1.8
MWS-1	2/24/2004	-0.12	-0.12		-1.8
MWS-1	3/23/2004	-0.27	-0.27		-1.8
MWS-1	4/22/2004	0.17	0.17		-1.8
MWS-1	5/10/2004	0.39	0.38		-1.8
MWS-1	6/8/2004	0.12	0.11		-1.8
MWS-1	7/15/2004	0.13	0.12		-1.8
MWS-1	8/24/2004	0.47	0.45		-1.8
MWS-1	9/21/2004	0.35	0.34		-1.8
MWS-1	10/4/2004	0.55	0.54		-1.8
MWS-1	11/10/2004	0.23	0.22		-1.8
MWS-1	12/15/2004	0.36	0.36		-1.8
MWS-1	1/11/2005	0.46	0.44		-1.8
MWS-1	2/28/2005	0.38	0.36		-1.8
MWS-1	3/18/2005	0.3	0.27		-1.8
MWS-1	5/18/2005	0.74	0.63		-1.8
MWS-1	8/2/2005	0.02	-0.02		-1.8
MWS-1	10/24/2005	-0.55	-0.59		-1.8
MWS-1	1/10/2006	-0.73	-0.78	-0.95	-1.8
MWS-1	5/8/2006	-0.57	-0.59	-0.67	-1.8
MWS-1	7/10/2006	-0.16	-0.16	-0.16	-1.8
MWS-1	11/6/2006	0.88	0.88	0.88	-1.8
MWS-1	1/2/2007	1.06	1.06	1.04	-1.8
MWS-1	4/2/2007	1.09	1.09	1.09	-1.8
MWS-1	7/2/2007	1.23	1.25	1.25	-1.8
MWS-1	11/5/2007	0.3	0.3	0.3	-1.8
MWS-1	3/24/2008	0.19	0.19	0.19	-1.8
MWS-1	3/17/2009	-0.23	-0.23	-0.23	-1.8
MWS-1	5/12/2009	-0.06	-0.06	-0.06	-1.8
MWS-1	9/8/09	0.95	0.95	0.94	-1.8
MWS-1	11/2/09	4.19	4.19	4.18	-1.8
MWS-1	1/4/10	1.6	1.6	1.6	-1.8
MWS-1	4/7/10	2.27	2.27	2.27	-1.8
MWS-1	9/13/10	0.79	0.79	0.79	-1.8
MWS-1	12/13/10	0.17	0.17	0.17	-1.8
MWS-1	3/7/11	-0.08	-0.08	-0.08	-1.8
MWS-1	6/7/11	0.76	0.76	0.76	-1.8
MWS-1	8/15/11	0.48	0.48	0.48	-1.8
MWS-1	12/5/11	1.93	1.93	1.93	-1.8
MWS-1	2/28/12	0.92	0.92	0.92	-1.8
MWS-1	5/7/2012	0.39	0.39	0.39	-1.8
MWS-1	7/11/2012	-1.91	-1.91	-1.91	-1.8
MWS-1	12/3/2012	-0.03	-0.03	-0.03	-1.8
MWS-1	3/20/2013	0.00	0.00	0.00	-1.8
MWS-1	6/19/2013	0.26	0.26	0.26	-1.8
MWS-1	8/28/13	1.43	1.43	1.43	-1.8
MWS-1	12/3/2013	0.43	0.43	0.43	-1.8
MWS-1	2/17/2014	0.46	0.46	0.46	-1.8
MWS-1	5/12/2014	1.61	1.61	1.61	-1.8
MWS-1	8/18/2014	1.12	1.12	1.12	-1.8

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
MWS-1	12/1/2014	0.4	0.4	0.4	-1.8
MWS-1	2/18/2015	0.87	0.87	0.87	-1.8
MWS-1	5/13/2015	1.26	1.26	1.26	-1.8
MWS-1	8/10/2015	0.93	0.93	0.93	-1.8
MWS-1	12/7/2015	0.53	0.53	0.53	-1.8
MWS-1	3/7/2016	0.9	0.9	0.9	-1.8
MWS-1	5/9/2016	0.74	0.74	0.74	-1.8
MWS-1	8/22/2016	0.37	0.37	0.37	-1.8
MWS-1	11/29/2016	0.17	0.17	0.17	-1.8
MWS-1	2/20/2017	-0.12	-0.12	-0.12	-1.8
MWS-1	5/8/2017	0.35	0.35	0.35	-1.8
MWS-1	9/5/2017	11.47	11.47	11.47	-1.8
MWS-1	12/4/2017	0.13	0.13	0.13	-1.8
MWS-1	3/26/2018	0.90	0.90	0.90	-1.8
MWS-1	6/18/2018	1.59	1.59	1.59	-1.8
MWS-1	9/10/2018	1.42	1.42	1.42	-1.8
MWS-1	12/4/2018	2.05	2.05	2.05	-1.8
MWS-1	6/3/2019	1.82	1.82	1.82	-1.8
MWS-1	9/10/2019	1.37	1.37	1.37	-1.8

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
RW-I	1/12/2004	0.24	0.11		-1.68
RW-I	2/24/2004	-0.06	-0.56		-1.68
RW-I	3/23/2004	-0.53	-1.17		-1.68
RW-I	4/22/2004	-0.06	-0.16		-1.68
RW-I	5/10/2004	0.28	-0.26		-1.68
RW-I	6/8/2004	0.05	-0.52		-1.68
RW-I	7/15/2004	0.5	-0.51		-1.68
RW-I	8/24/2004	0.99	-0.33		-1.68
RW-I	9/21/2004	0.1	-0.12		-1.68
RW-I	10/4/2004	0.58	0.18		-1.68
RW-I	11/10/2004	0.36	0.06		-1.68
RW-I	12/15/2004	0.17	0.07		-1.68
RW-I	1/11/2005	0.27	0.19		-1.68
RW-I	2/25/2005	0.22	0.09		-1.68
RW-I	3/18/2005	0.07	-0.01		-1.68
RW-I	5/18/2005	0.53	0.49		-1.68
RW-I	8/2/2005	-0.08	-0.22		-1.68
RW-I	10/24/2004	-0.7	-0.75		-1.68
RW-I	1/10/2006	-0.87	-0.97	-1.28	-1.68
RW-I	5/8/2006	-0.67	-0.81	-1.24	-1.68
RW-I	7/10/2006	-0.17	-0.41	-1.19	-1.68
RW-I	11/6/2006	0.77	0.76	0.71	-1.68
RW-I	1/2/2007	1.24	1.24	1.24	-1.68
RW-I	4/2/2007	1	1	1	-1.68
RW-I	7/2/2007	1.22	1.02	1.17	-1.68
RW-I	11/5/2007	0.32	0.28	0.15	-1.68
RW-I	3/24/2008	0.12	0.09	-0.02	-1.68
RW-I	3/17/2009	1.73	1.45	0.56	-1.68
RW-I	5/12/2009	2.33	2.06	1.21	-1.68
RW-I	9/8/09	3.33	3.13	2.5	-1.68
RW-I	11/2/09	3.67	3.45	2.76	-1.68
RW-I	1/4/10	3.87	3.83	3.59	-1.68
RW-I	4/7/10	4.48	4.48	4.48	-1.68
RW-I	9/13/10	2.99	2.99	2.99	-1.68
RW-I	12/13/10	2.37	2.37	2.37	-1.68
RW-I	3/7/11	2.16	2.16	2.16	-1.68
RW-I	6/7/11	0.65	0.65	0.65	-1.68
RW-I	8/15/11	2.66	2.66	2.66	-1.68
RW-I	12/6/11	3.78	3.78	3.78	-1.68
RW-I	2/28/12	3.18	3.18	3.18	-1.68
RW-I	5/7/12	2.72	2.72	2.72	-1.68
RW-I	7/11/12	2.38	2.38	2.38	-1.68
RW-I	12/3/12	2.13	2.13	2.13	-1.68
RW-I	3/20/13	2.11	2.11	2.11	-1.68
RW-I	6/19/13	2.53	2.53	2.53	-1.68
RW-I	8/28/13	3.64	3.64	3.64	-1.68
RW-I	12/3/2013	2.61	2.61	2.61	-1.68
RW-I	2/17/2014	2.76	2.76	2.76	-1.68
RW-I	5/12/2014	3.88	3.88	3.88	-1.68
RW-I	8/18/2014	3.51	3.51	3.51	-1.68

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
RW-I	12/1/2014	2.79	2.79	2.79	-1.68
RW-I	2/18/2015	3.1	3.1	3.1	-1.68
RW-I	5/13/2015	3.59	3.59	3.59	-1.68
RW-I	8/10/2015	1.01	1.01	1.01	-1.68
RW-I	12/7/2015	4.00	4.00	4.00	-1.68
RW-I	3/7/2016	4.35	4.35	4.35	-1.68
RW-I	5/9/2016	4.27	4.27	4.27	-1.68
RW-I	8/22/2016	3.79	3.79	3.79	-1.68
RW-I	11/29/2016	3.56	3.56	3.56	-1.68
RW-I	2/20/2017	3.34	3.34	3.34	-1.68
RW-I	5/8/2017	3.92	3.92	3.92	-1.68
RW-I	9/5/2017	4.56	4.56	4.56	-1.68
RW-I	12/4/2017	3.58	3.58	3.58	-1.68
RW-I	3/26/2018	4.50	4.50	4.50	-1.68
RW-I	6/18/2018	5.36	5.36	5.36	-1.68
RW-I	9/10/2018	4.69	4.69	4.69	-1.68
RW-I	12/4/2018	5.63	5.63	5.63	-1.68
RW-I	6/3/2019	2.12	2.12	2.12	-1.68
RW-I	9/20/2019	1.81	1.81	1.81	-1.68

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
RW-H	1/12/2004	0.35	0.04		-1.65
RW-H	2/24/2004	0.2	0.11		-1.65
RW-H	3/23/2004	0	-0.71		-1.65
RW-H	4/22/2004	0.56	0.47		-1.65
RW-H	5/10/2004	0.62	0.46		-1.65
RW-H	6/8/2004	0.47	0.32		-1.65
RW-H	7/15/2004	0.4	0.11		-1.65
RW-H	8/24/2004	0.71	0.61		-1.65
RW-H	9/21/2004	0.47	0.36		-1.65
RW-H	10/4/2004	0.51	0.5		-1.65
RW-H	11/10/2004	0.46	0.45		-1.65
RW-H	12/15/2004	0.54	0.54		-1.65
RW-H	1/11/2005	0.92	0.92		-1.65
RW-H	2/25/2005	0.6	0.6		-1.65
RW-H	3/18/2005	0.6	0.6		-1.65
RW-H	5/18/05	0.96	0.96		-1.65
RW-H	8/2/05	0.13	0.13		-1.65
RW-H	10/24/05	-1.28	-1.3		-1.65
RW-H	1/10/06	-0.66	-0.66	-0.66	-1.65
RW-H	5/8/06	-0.41	-0.42	-0.45	-1.65
RW-H	7/10/06	-0.04	-0.04	-0.06	-1.65
RW-H	11/6/06	1.11	1.11	1.11	-1.65
RW-H	1/2/07	1.3	1.3	1.3	-1.65
RW-H	4/2/07	1.38	1.38	1.38	-1.65
RW-H	7/2/07	1.56	1.56	1.56	-1.65
RW-H	11/5/07	0.53	0.53	0.52	-1.65
RW-H	3/24/08	0.56	0.32	-0.56	-1.65
RW-H	3/17/09	1.99	1.77	1.07	-1.65
RW-H	5/12/09	2.12	1.91	1.26	-1.65
RW-H	9/8/09	3.11	3.11	3.11	-1.65
RW-H	11/2/09	3.48	3.41	3.19	-1.65
RW-H	1/4/10	3.56	3.42	2.99	-1.65
RW-H	4/7/10	4.41	4.35	4.15	-1.65
RW-H	9/13/10	2.8	2.76	2.64	-1.65
RW-H	12/13/10	2.32	2.28	2.17	-1.65
RW-H	3/7/11	2.06	2.04	1.99	-1.65
RW-H	6/7/11	0.95	0.92	0.81	-1.65
RW-H	8/15/11	2.52	2.49	2.38	-1.65
RW-H	12/5/11	3.66	3.66	3.66	-1.65
RW-H	2/28/12	3.07	3.06	3.03	-1.65
RW-H	5/7/12	2.51	2.5	2.46	-1.65
RW-H	7/11/2012	4.19	4.18	4.14	-1.65
RW-H	12/3/2012	1.49	1.49	1.49	-1.65
RW-H	3/20/2013	2.09	2.09	2.09	-1.65
RW-H	6/19/2013	2.46	2.46	2.46	-1.65
RW-H	8/29/2013	3.41	3.41	3.41	-1.65
RW-H	12/3/2013	2.39	2.39	2.39	-1.65
RW-H	2/17/2014	3.02	3.02	3.02	-1.65
RW-H	5/12/2014	3.76	3.76	3.76	-1.65
RW-H	8/18/2014	3.3	3.3	3.3	-1.65

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
RW-H	12/1/2014	2.57	2.57	2.57	-1.65
RW-H	2/18/2015	2.81	2.81	2.81	-1.65
RW-H	5/13/2015	3.44	3.44	3.44	-1.65
RW-H	8/10/2015	3.1	3.1	3.1	-1.65
RW-H	12/7/2015	3.72	3.72	3.72	-1.65
RW-H	3/7/2016	4.05	4.05	4.05	-1.65
RW-H	5/9/2016	4.07	4.07	4.07	-1.65
RW-H	8/22/2016	3.98	3.98	3.98	-1.65
RW-H	11/29/2016	3.28	3.28	3.28	-1.65
RW-H	2/20/2017	2.96	2.96	2.96	-1.65
RW-H	5/8/2017	3.63	3.63	3.63	-1.65
RW-H	9/5/2017	4.23	4.23	4.23	-1.65
RW-H	12/4/2017	3.28	3.28	3.28	-1.65
RW-H	3/26/2018	4.46	4.46	4.46	-1.65
RW-H	6/18/2018	4.98	4.98	4.98	-1.65
RW-H	9/10/2018	4.80	4.80	4.80	-1.65
RW-H	6/3/2019	2.28	2.28	2.28	-1.65
RW-H	9/10/2019	1.83	1.83	1.83	-1.65
RW-H	12/4/2019	NM	NM	NM	-1.65

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
PH-14	1/12/2004	0.26	-0.12		-1.62
PH-14	2/24/2004	-0.12	-0.42		-1.62
PH-14	3/23/2004	-0.08	-1.5		-1.62
PH-14	4/22/2004	0.56	0.11		-1.62
PH-14	5/10/2004	1.04	-0.19		-1.62
PH-14	6/8/2004	0.51	-0.22		-1.62
PH-14	7/15/2004	0.03	-0.14		-1.62
PH-14	8/24/2004	0.42	0.21		-1.62
PH-14	9/21/2004	0.41	-0.19		-1.62
PH-14	10/4/2004	0.4	-0.22		-1.62
PH-14	11/10/2004	0.43	0.43		-1.62
PH-14	12/15/2004	0.23	0.23		-1.62
PH-14	1/11/2005	0.39	0.38		-1.62
PH-14	2/25/2005	0.29	0.29		-1.62
PH-14	3/18/2005	0.49	0.24		-1.62
PH-14	5/18/2005	0.74	0.68		-1.62
PH-14	8/2/2005	0.13	-0.19		-1.62
PH-14	10/24/2005	-0.39	-0.59		-1.62
PH-14	1/10/2006	-0.6	-0.96	-2.11	-1.62
PH-14	5/8/2006	-0.46	-0.72	-1.53	-1.62
PH-14	7/10/2006	-0.21	-0.33	-0.73	-1.62
PH-14	11/6/2006	0.93	0.89	0.77	-1.62
PH-14	1/2/07	1.19	1.13	0.96	-1.62
PH-14	4/2/2007	1.35	1.29	1.1	-1.62
PH-14	7/2/2007	1.53	1.5	1.39	-1.62
PH-14	11/5/2007	0.50	0.44	0.24	-1.62
PH-14	3/17/09	0.2	-0.07	-0.91	-1.62
PH-14	5/12/2009	0.28	0.11	-0.42	-1.62
PH-14	9/8/2009	1.22	1.15	0.93	-1.62
PH-14	11/2/2009	1.61	1.55	1.37	-1.62
PH-14	1/4/2010	2.01	1.95	1.76	-1.62
PH-14	4/7/2010	2.6	2.57	2.49	-1.62
PH-14	9/13/2010	1.02	0.98	0.86	-1.62
PH-14	3/7/2011	0.35	0.19	-0.32	-1.62
PH-14	6/7/2011	1.1	0.92	0.36	-1.62
PH-14	8/15/2011	0.77	0.63	0.19	-1.62
PH-14	12/5/2011	1.89	1.8601	1.76	-1.62
PH-14	2/28/2012	1.29	1.26	1.14	-1.62
PH-14	5/7/2012	0.74	0.7	0.57	-1.62
PH-14	7/11/2012	0.38	0.34	0.16	-1.62
PH-14	12/3/2012	0.49	0.27	-0.47	-1.62
PH-14	3/20/2013	0.97	0.22	0.53	-1.62
PH-14	6/19/2013	0.63	0.59	0.46	-1.62
PH-14	8/29/2013	1.73	1.67	1.49	-1.62
PH-14	12/3/2013	0.76	0.746	0.7	-1.62
PH-14	2/17/2014	0.99	0.99	0.99	-1.62
PH-14	5/12/2014	1.99	1.99	1.99	-1.62
PH-14	8/18/2014	1.49	1.49	1.49	-1.62
PH-14	12/1/2014	0.78	0.78	0.78	-1.62
PH-14	2/18/2015	1.21	1.21	1.21	-1.62

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
PH-14	5/13/2015	1.56	1.56	1.56	-1.62
PH-14	8/10/2015	1.19	1.19	1.19	-1.62
PH-14	12/7/2015	0.88	0.88	0.88	-1.62
PH-14	3/7/2016	1.21	1.21	1.21	-1.62
PH-14	5/9/2016	1.15	1.15	1.15	-1.62
PH-14	8/22/2016	0.65	0.65	0.65	-1.62
PH-14	11/29/2016	0.01	0.01	0.01	-1.62
PH-14	2/20/2017	0.11	0.11	0.1	-1.62
PH-14	5/8/2017	0.69	0.69	0.69	-1.62
PH-14	9/5/2017	1.34	1.34	1.34	-1.62
PH-14	12/4/2017	0.49	0.49	0.49	-1.62
PH-14	3/26/2018	1.29	1.29	1.29	-1.62
PH-14	6/18/2018	1.88	1.88	1.88	-1.62
PH-14	9/10/2018	1.96	1.96	1.96	-1.62
PH-14	12/4/2018	2.51	2.51	2.51	-1.62
PH-14	6/3/2019	2.22	2.22	2.22	-1.62
PH-14	9/10/2019	1.80	1.80	1.80	-1.62

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
RW-G	1/12/2004	0.38	0.38		-1.62
RW-G	2/24/2004	-0.26	-0.31		-1.62
RW-G	3/23/2004	-0.42	-0.54		-1.62
RW-G	4/22/2004	0.2	-0.08		-1.62
RW-G	5/10/2004	-0.6	-0.7		-1.62
RW-G	6/8/2004	-0.05	-0.05		-1.62
RW-G	7/15/2004	0.05	0.01		-1.62
RW-G	8/24/2004	0.39	0.39		-1.62
RW-G	9/21/2004	0.3	-0.19		-1.62
RW-G	10/4/2004	0.27	0.12		-1.62
RW-G	11/10/2004	0.21	0.21		-1.62
RW-G	12/15/2004	0.21	0.21		-1.62
RW-G	1/11/2005	0.39	0.36		-1.62
RW-G	2/25/2005	0.26	0.25		-1.62
RW-G	3/18/2005	0.17	0.16		-1.62
RW-G	5/18/2005	0.65	0.64		-1.62
RW-G	8/2/2005	-0.21	-0.22		-1.62
RW-G	10/24/2005	-0.5	-0.52		-1.62
RW-G	1/10/2006	-0.96	-0.95	-0.99	-1.62
RW-G	5/8/2006	-0.46	-0.47	-0.5	-1.62
RW-G	7/10/2006	-0.36	-0.37	-0.42	-1.62
RW-G	1/2/07	1.81	1.81	1.81	-1.62
RW-G	4/2/2007	1.08	1.08	1.08	-1.62
RW-G	7/2/2007	1.21	1.21	1.21	-1.62
RW-G	11/5/2007	0.28	0.28	0.28	-1.62
RW-G	3/17/09	0.02	-0.04	-0.24	-1.62
RW-G	5/12/2009	0.2	0.16	0.05	-1.62
RW-G	9/8/09	1.31	1.29	1.24	-1.62
RW-G	11/2/09	1.74	1.74	1.72	-1.62
RW-G	1/4/10	2.05	2.05	2.04	-1.62
RW-G	4/7/10	2.64	2.64	2.64	-1.62
RW-G	9/13/10	1.01	0.95	0.74	-1.62
RW-G	12/13/2010	0.67	0.55	0.19	-1.62
RW-G	03/07/11	0.36	0.18	-0.37	-1.62
RW-G	06/07/11	1.32	1.12	0.48	-1.62
RW-G	08/15/11	0.87	0.69	0.11	-1.62
RW-G	12/05/11	1.93	1.9093	1.84	-1.62
RW-G	02/28/12	1.3	1.29	1.26	-1.62
RW-G	05/07/12	0.84	0.72	0.31	-1.62
RW-G	07/11/12	0.49	0.31	-0.48	-1.62
RW-G	12/03/12	0.39	0.21	-0.41	-1.62
RW-G	03/20/13	0.55	0.29	0.13	-1.62
RW-G	06/19/13	0.81	0.69	0.3	-1.62
RW-G	08/29/13	1.8	1.71	1.43	-1.62
RW-G	12/03/13	0.85	0.82	0.72	-1.62
RW-G	02/17/14	1	0.97	0.88	-1.62
RW-G	05/12/14	2.02	2.02	2.02	-1.62
RW-G	08/18/14	1.55	1.55	1.55	-1.62
RW-G	12/01/14	0.8	0.8	0.8	-1.62
RW-G	02/18/15	1.05	1.05	1.05	-1.62

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
RW-G	5/13/2015	1.67	1.67	1.67	-1.62
RW-G	8/10/2015	1.25	1.25	1.25	-1.62
RW-G	12/7/2015	2.29	2.29	2.29	-1.62
RW-G	3/7/2016	2.65	2.65	2.65	-1.62
RW-G	5/9/2016	2.65	2.65	2.65	-1.62
RW-G	8/22/2016	2.13	2.13	2.13	-1.62
RW-G	11/29/2016	1.76	1.76	1.76	-1.62
RW-G	2/20/2017	1.77	1.58	0.94	-1.62
RW-G	5/8/2017	2.38	2.18	1.14	-1.62
RW-G	9/5/2017	2.94	2.81	1.97	-1.62
RW-G	12/4/2017	2.02	1.86	0.84	-1.62
RW-G	3/26/2018	2.83	2.83	2.83	-1.62
RW-G	6/18/2018	3.60	3.55	3.21	-1.62
RW-G	9/10/2018	15.17	15.17	15.17	-1.62
RW-G	12/4/2018	4.12	4.12	4.12	-1.62
RW-G	6/3/2019	2.22	2.22	2.22	-1.62
RW-G	9/10/2019	1.72	1.72	1.72	-1.62

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
RW-M	1/12/2004	0.47	0.47		-1.52
RW-M	2/24/2004	0.49	0.49		-1.52
RW-M	3/23/2004	0.67	0.67		-1.52
RW-M	4/22/2004	0.99	0.99		-1.52
RW-M	5/10/2004	0.78	0.78		-1.52
RW-M	6/8/2004	0.91	0.91		-1.52
RW-M	7/15/2004	0.81	0.81		-1.52
RW-M	8/24/2004	1.25	1.25		-1.52
RW-M	9/21/2004	1.09	1.09		-1.52
RW-M	10/4/2004	1.12	1.12		-1.52
RW-M	11/10/2004	1.07	1.07		-1.52
RW-M	12/15/2004	1.09	1.09		-1.52
RW-M	1/11/2005	1.62	1.62		-1.52
RW-M	2/25/2005	0.99	0.99		-1.52
RW-M	3/18/2005	0.85	0.85		-1.52
RW-M	5/18/2005	1.4	1.4		-1.52
RW-M	8/2/2005	0.54	0.54		-1.52
RW-M	10/24/2005				-1.52
RW-M	1/10/2006	-0.15	-0.15	-0.15	-1.52
RW-M	5/8/2006	-0.04	-0.04	-0.04	-1.52
RW-M	7/10/2006	0.33	0.33	0.33	-1.52
RW-M	11/6/2006				-1.52
RW-M	1/2/07	1.9	1.9	1.9	-1.52
RW-M	4/2/2007	1.83	1.83	1.83	-1.52
RW-M	7/2/2007	2	2	2	-1.52
RW-M	11/5/2007	1.01	1.01	1.01	-1.52
RW-M	3/17/09	-0.26	-0.26	-0.26	-1.52
RW-M	5/12/2009	0.15	0.15	0.15	-1.52
RW-M	9/8/2009	1.35	1.35	1.35	-1.52
RW-M	11/2/2009	1.7	1.7	1.7	-1.52
RW-M	1/4/2010	2.06	2.06	2.06	-1.52
RW-M	4/7/2010	2.62	2.62	2.62	-1.52
RW-M	9/13/2010	0.96	0.96	0.96	-1.52
RW-M	12/13/2010	0.45	0.45	0.45	-1.52
RW-M	3/7/2011	0.25	0.25	0.25	-1.52
RW-M	6/7/2011	0.96	0.96	0.96	-1.52
RW-M	15-Aug	0.77	0.77	0.77	-1.52
RW-M	12/6/2011	1.9	1.9	1.9	-1.52
RW-M	2/28/2012	1.25	1.25	1.25	-1.52
RW-M	5/7/2012	0.7	0.7	0.7	-1.52
RW-M	7/11/2012	0.37	0.37	0.37	-1.52
RW-M	12/3/2012	0.64	0.64	0.64	-1.52
RW-M	3/20/2013	0.33	0.33	0.33	-1.52
RW-M	6/19/2013	0.78	0.78	0.78	-1.52
RW-M	8/29/2013	1.79	1.79	1.79	-1.52
RW-M	12/3/2013	0.74	0.74	0.74	-1.52
RW-M	2/17/2014	1.03	1.03	1.03	-1.52
RW-M	5/12/2014	2.07	2.07	2.07	-1.52
RW-M	8/18/2014	1.53	1.53	1.53	-1.52
RW-M	12/1/2014	0.81	0.81	0.81	-1.52

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
RW-M	2/18/2015	1.21	1.21	1.21	-1.52
RW-M	5/13/2015	1.67	1.67	1.67	-1.52
RW-M	8/10/2015	1.18	1.18	1.18	-1.52
RW-M	12/7/2015	2.41	2.41	2.41	-1.52
RW-M	3/7/2016	2.76	2.76	2.76	-1.52
RW-M	5/9/2016	2.83	2.83	2.83	-1.52
RW-M	8/22/2016	2.40	2.40	2.40	-1.52
RW-M	12/2/2016	2.31	2.31	2.31	-1.52
RW-M	2/20/2017	1.72	1.72	1.72	-1.52
RW-M	5/8/2017	6.51	6.44	6.06	-1.52
RW-M	9/5/2017	2.91	2.91	2.91	-1.52
RW-M	12/4/2017	1.87	1.87	1.87	-1.52
RW-M	3/26/2018	2.95	2.95	2.95	-1.52
RW-M	6/18/2018	3.64	3.64	3.64	-1.52
RW-M	9/10/2018	4.03	4.03	4.03	-1.52
RW-M	12/4/2018	4.28	4.28	4.28	-1.52
RW-M	6/3/2019	2.30	2.30	2.30	-1.52
RW-M	9/10/2019	1.95	1.95	1.95	-1.52

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
MWS-3	1/12/2004	0.72	0.72		-1.28
MWS-3	2/24/2004	1.26	0.98		-1.28
MWS-3	3/23/2004	1.03	0.79		-1.28
MWS-3	4/22/2004	3.66	3.66		-1.28
MWS-3	5/10/2004	3.69	3.69		-1.28
MWS-3	6/8/2004	3.29	3.29		-1.28
MWS-3	7/15/2004	1.17	1.17		-1.28
MWS-3	8/24/2004	1.55	1.53		-1.28
MWS-3	9/21/2004	1.15	1.09		-1.28
MWS-3	10/4/2004	1.45	1.44		-1.28
MWS-3	11/10/2004	1.32	1.32		-1.28
MWS-3	12/15/2004	1.57	1.57		-1.28
MWS-3	1/11/2005	1.25	1.24		-1.28
MWS-3	2/25/2005	0.96	0.95		-1.28
MWS-3	3/18/2005	0.83	0.83		-1.28
MWS-3	5/18/2005	1.14	1.14		-1.28
MWS-3	8/2/2005	0.38	0.37		-1.28
MWS-3	10/24/2005	-0.32	-0.33		-1.28
MWS-3	1/10/2006	-0.2	-0.21	-0.23	-1.28
MWS-3	5/8/2006	-0.29	-0.29	-0.3	-1.28
MWS-3	7/10/2006	-0.01	-0.01	-0.01	-1.28
MWS-3	11/6/2006	1.63	1.63	1.63	-1.28
MWS-3	1/2/2007	1.69	1.69	1.69	-1.28
MWS-3	4/2/2007	1.57	1.57	1.57	-1.28
MWS-3	7/2/2007	1.75	1.75	1.75	-1.28
MWS-3	11/5/2007	0.8	0.8	0.8	-1.28
MWS-3	3/17/09	-0.23	-0.23	-0.23	-1.28
MWS-3	5/12/2009	0.36	0.36	0.36	-1.28
MWS-3	9/8/2009	1.88	1.88	1.88	-1.28
MWS-3	11/2/2009	2.19	2.19	2.19	-1.28
MWS-3	1/4/2010	2.34	2.34	2.34	-1.28
MWS-3	4/7/2010	2.85	2.85	2.85	-1.28
MWS-3	9/13/2010	0.86	0.86	0.86	-1.28
MWS-3	12/13/2010	0.49	0.49	0.49	-1.28
MWS-3	3/7/2011	0.45	0.45	0.45	-1.28
MWS-3	6/7/2011	1	1	1	-1.28
MWS-3	8/15/2011	1.03	1.03	1.03	-1.28
MWS-3	12/6/2011	1.99	1.99	1.99	-1.28
MWS-3	2/28/2012	1.29	1.29	1.29	-1.28
MWS-3	5/7/2012	0.7	0.7	0.7	-1.28
MWS-3	7/11/2012	0.33	0.33	0.33	-1.28
MWS-3	12/3/2012	0.07	0.07	0.07	-1.28
MWS-3	3/20/2013	0.58	0.58	0.58	-1.28
MWS-3	6/19/2013	1.31	1.31	1.31	-1.28
MWS-3	8/29/2013	2.01	2.01	2.01	-1.28
MWS-3	12/3/2013	0.74	0.74	0.74	-1.28
MWS-3	2/17/2014	0.2	0.2	0.2	-1.28
MWS-3	5/12/2014	2.34	2.34	2.34	-1.28
MWS-3	8/18/2014	1.55	1.55	1.55	-1.28
MWS-3	12/1/2014	0.86	0.86	0.86	-1.28

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
MWS-3	2/18/2015	1.25	1.25	1.25	-1.28
MWS-3	5/13/2015	1.74	1.74	1.74	-1.28
MWS-3	8/10/2015	1.29	1.29	1.29	-1.28
MWS-3	12/7/2015	0.86	0.86	0.86	-1.28
MWS-3	3/8/2016	1.39	1.39	1.39	-1.28
MWS-3	5/9/2016	1.36	1.36	1.36	-1.28
MWS-3	8/22/2016	0.63	0.63	0.63	-1.28
MWS-3	11/29/2016	0.56	0.56	0.56	-1.28
MWS-3	2/20/2017	0.19	0.19	0.19	-1.28
MWS-3	5/8/2017	0.85	0.85	0.85	-1.28
MWS-3	9/5/2017	1.37	1.37	1.37	-1.28
MWS-3	12/4/2017	0.20	0.20	0.20	-1.28
MWS-3	3/26/2018	5.44	5.424	5.32	-1.28
MWS-3	6/18/2018	2.06	2.06	2.06	-1.28
MWS-3	9/10/2018	2.07	2.07	2.07	-1.28
MWS-3	12/4/2018	2.95	2.95	2.95	-1.28
MWS-3	6/3/2019	2.27	2.27	2.27	-1.28
MWS-3	9/10/2019	1.81	1.81	1.81	-1.28

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
MWS-4	1/12/2004	0.88	0.88		-1.28
MWS-4	2/24/2004	0.51	0.51		-1.28
MWS-4	3/23/2004	0.56	0.56		-1.28
MWS-4	4/22/2004	1.17	1.17		-1.28
MWS-4	5/10/2004	1.29	1.29		-1.28
MWS-4	6/8/2004	0.92	0.92		-1.28
MWS-4	7/15/2004	1.09	1.09		-1.28
MWS-4	8/24/2004	1.09	1.09		-1.28
MWS-4	9/21/2004	2.3	2.3		-1.28
MWS-4	10/4/2004	1.05	1.05		-1.28
MWS-4	11/10/2004	1.04	1.04		-1.28
MWS-4	12/15/2004	1.21	1.21		-1.28
MWS-4	1/11/2005	1.09	1.09		-1.28
MWS-4	2/25/2005	0.97	0.97		-1.28
MWS-4	3/18/2005	0.85	0.85		-1.28
MWS-4	5/18/2005	1.23	1.23		-1.28
MWS-4	8/2/2005	0.38	0.38		-1.28
MWS-4	10/24/2005	-0.09	-0.09		-1.28
MWS-4	1/10/2006	-0.17	-0.17	-0.17	-1.28
MWS-4	5/8/2006	-0.02	-0.02	-0.02	-1.28
MWS-4	7/10/2006	0.27	0.27	0.27	-1.28
MWS-4	11/6/2006	1.53	1.53	1.53	-1.28
MWS-4	1/2/2007	1.81	1.81	1.81	-1.28
MWS-4	4/2/2007	1.86	1.86	1.86	-1.28
MWS-4	7/2/2007	1.86	1.86	1.86	-1.28
MWS-4	11/5/2007	0.94	0.94	0.94	-1.28
MWS-4	3/17/2009	0.15	0.15	0.15	-1.28
MWS-4	5/12/2009	0.79	0.79	0.79	-1.28
MWS-4	9/8/09	1.79	1.79	1.78	-1.28
MWS-4	11/2/09	2.28	2.28	2.26	-1.28
MWS-4	1/4/10	1.92	1.92	1.92	-1.28
MWS-4	4/7/10	3	3	3	-1.28
MWS-4	9/13/10	1.12	1.12	1.11	-1.28
MWS-4	12/13/10	0.99	0.99	0.99	-1.28
MWS-4	3/7/11	1.06	1.06	1.06	-1.28
MWS-4	6/7/11	1.23	1.23	1.23	-1.28
MWS-4	8/15/11	1.38	1.38	1.38	-1.28
MWS-4	12/6/11	2.16	2.16	2.16	-1.28
MWS-4	2/28/12	1.49	1.49	1.49	-1.28
MWS-4	5/7/12	1.24	1.24	1.24	-1.28
MWS-4	7/11/12	0.58	0.58	0.58	-1.28
MWS-4	12/4/12	0.50	0.50	0.50	-1.28
MWS-4	3/19/13	1.04	1.04	1.04	-1.28
MWS-4	6/19/13	1.37	1.37	1.37	-1.28
MWS-4	8/28/13	2.13	2.13	2.13	-1.28
MWS-4	12/3/13	1.02	1.02	1.02	-1.28
MWS-4	2/17/14	1.34	1.34	1.34	-1.28
MWS-4	5/12/14	2.38	2.38	2.38	-1.28
MWS-4	8/18/2014	1.84	1.84	1.83	-1.28
MWS-4	12/1/2014	1.23	1.23	1.23	-1.28

Table F2: Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
MWS-4	2/18/2015	1.5	1.5	1.5	-1.28
MWS-4	5/13/2015	2.01	2.01	2.01	-1.28
MWS-4	8/10/2015	1.62	1.62	1.62	-1.28
MWS-4	12/7/2015	1.23	1.23	1.23	-1.28
MWS-4	3/7/2016	1.61	1.61	1.61	-1.28
MWS-4	5/9/2016	1.23	1.23	1.23	-1.28
MWS-4	8/22/2016	1.22	1.22	1.22	-1.28
MWS-4	11/29/2016	1.52	1.52	1.52	-1.28
MWS-4	2/20/2017	0.7	0.7	0.7	-1.28
MWS-4	5/10/2017	1.28	1.27	1.23	-1.28
MWS-4	9/5/2017	1.71	1.71	1.71	-1.28
MWS-4	12/4/2017	0.82	0.82	0.82	-1.28
MWS-4	3/26/2018	1.76	1.76	1.76	-1.28
MWS-4	6/18/2018	2.42	2.42	2.42	-1.28
MWS-4	9/10/2018	2.33	2.33	2.33	-1.28
MWS-4	12/4/2018	2.93	2.93	2.91	-1.28
MWS-4	6/3/2019	2.53	2.52	2.47	-1.28
MWS-4	9/10/2019	2.06	2.06	2.04	-1.28

Product Elevation in PH-14 Compared to the Bottom of the Passyunk Sewer at Manhole D

Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
1/12/2004	0.26	-0.12		-1.62
2/24/2004	-0.12	-0.42		-1.62
3/23/2004	-0.08	-1.5		-1.62
4/22/2004	0.56	0.11		-1.62
5/10/2004	1.04	-0.19		-1.62
6/8/2004	0.51	-0.22		-1.62
7/15/2004	0.03	-0.14		-1.62
8/24/2004	0.42	0.21		-1.62
9/21/2004	0.41	-0.19		-1.62
10/4/2004	0.4	-0.22		-1.62
11/10/2004	0.43	0.43		-1.62
12/15/2004	0.23	0.23		-1.62
1/11/2005	0.39	0.38		-1.62
2/25/2005	0.29	0.29		-1.62
3/18/2005	0.49	0.24		-1.62
5/18/2005	0.74	0.68		-1.62
8/2/2005	0.13	-0.19		-1.62
10/24/2005	-0.39	-0.59		-1.62
1/10/2006	-0.6	-0.96	-2.11	-1.62
5/8/2006	-0.46	-0.72	-1.53	-1.62
7/10/2006	-0.21	-0.33	-0.73	-1.62
11/6/2006	0.93	0.89	0.77	-1.62
1/2/07	1.19	1.13	0.96	-1.62
4/2/2007	1.35	1.29	1.1	-1.62
7/2/2007	1.53	1.5	1.39	-1.62
11/5/2007	0.50	0.44	0.24	-1.62
3/17/09	0.2	-0.07	-0.91	-1.62
5/12/2009	0.28	0.11	-0.42	-1.62
9/8/2009	1.22	1.15	0.93	-1.62
11/2/2009	1.61	1.55	1.37	-1.62
1/4/2010	2.01	1.95	1.76	-1.62
4/7/2010	2.6	2.57	2.49	-1.62
9/13/2010	1.02	0.98	0.86	-1.62
3/7/2011	0.35	0.19	-0.32	-1.62

Product Elevation in PH-14 Compared to the Bottom of the Passyunk Sewer at Manhole D

6/7/2011	1.1	0.92	0.36	-1.62
8/15/2011	0.77	0.63	0.19	-1.62
12/5/2011	1.89	1.8601	1.76	-1.62
2/28/2012	1.29	1.26	1.14	-1.62
5/7/2012	0.74	0.7	0.57	-1.62
7/11/2012	0.38	0.34	0.16	-1.62
12/3/2012	0.49	0.27	-0.47	-1.62
3/20/2013	0.97	0.22	0.53	-1.62
6/19/2013	0.63	0.59	0.46	-1.62
8/29/2013	1.73	1.67	1.49	-1.62
12/3/2013	0.76	0.746	0.7	-1.62
2/17/2014	0.99	0.99	0.99	-1.62
5/12/2014	1.99	1.99	1.99	-1.62
8/18/2014	1.49	1.49	1.49	-1.62
12/1/2014	0.78	0.78	0.78	-1.62
2/18/2015	1.21	1.21	1.21	-1.62
5/13/2015	1.56	1.56	1.56	-1.62
8/10/2015	1.19	1.19	1.19	-1.62
12/7/2015	0.88	0.88	0.88	-1.62
3/7/2016	1.21	1.21	1.21	-1.62
5/9/2016	1.15	1.15	1.15	-1.62
8/22/2016	0.65	0.65	0.65	-1.62
11/29/2016	0.01	0.01	0.01	-1.62
2/20/2017	0.11	0.11	0.1	-1.62
5/8/2017	0.69	0.69	0.69	-1.62
9/5/2017	1.34	1.34	1.34	-1.62
12/4/2017	0.49	0.4884	0.48	-1.62
3/26/2018	1.29	1.29	1.29	-1.62
6/18/2018	1.88	1.88	1.88	-1.62
9/10/2018	1.96	1.96	1.96	-1.62

Product Elevation in MWS-1 Compared to the Bottom of the Passyunk Sewer at Manhole A

Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
1/12/2004	0.15	0.15		-1.8
2/24/2004	-0.12	-0.12		-1.8
3/23/2004	-0.27	-0.27		-1.8
4/22/2004	0.17	0.17		-1.8
5/10/2004	0.39	0.38		-1.8
6/8/2004	0.12	0.11		-1.8
7/15/2004	0.13	0.12		-1.8
8/24/2004	0.47	0.45		-1.8
9/21/2004	0.35	0.34		-1.8
10/4/2004	0.55	0.54		-1.8
11/10/2004	0.23	0.22		-1.8
12/15/2004	0.36	0.36		-1.8
1/11/2005	0.46	0.44		-1.8
2/28/2005	0.38	0.36		-1.8
3/18/2005	0.3	0.27		-1.8
5/18/2005	0.74	0.63		-1.8
8/2/2005	0.02	-0.02		-1.8
10/24/2005	-0.55	-0.59		-1.8
1/10/2006	-0.73	-0.78	-0.95	-1.8
5/8/2006	-0.57	-0.59	-0.67	-1.8
7/10/2006	-0.16	-0.16	-0.16	-1.8
11/6/2006	0.88	0.88	0.88	-1.8
1/2/2007	1.06	1.06	1.04	-1.8
4/2/2007	1.09	1.09	1.09	-1.8
7/2/2007	1.23	1.25	1.25	-1.8
11/5/2007	0.3	0.3	0.3	-1.8
3/24/2008	0.19	0.19	0.19	-1.8
3/17/2009	-0.23	-0.23	-0.23	-1.8
5/12/2009	-0.06	-0.06	-0.06	-1.8
9/8/09	0.95	0.95	0.94	-1.8
11/2/09	4.19	4.19	4.18	-1.8
1/4/10	1.6	1.6	1.6	-1.8
4/7/10	2.27	2.27	2.27	-1.8
9/13/10	0.79	0.79	0.79	-1.8

Product Elevation in MWS-1 Compared to the Bottom of the Passyunk Sewer at Manhole A

12/13/10	0.17	0.17	0.17	-1.8
3/7/11	-0.08	-0.08	-0.08	-1.8
6/7/11	0.76	0.76	0.76	-1.8
8/15/11	0.48	0.48	0.48	-1.8
12/5/11	1.93	1.93	1.93	-1.8
2/28/12	0.92	0.92	0.92	-1.8
5/7/2012	0.39	0.39	0.39	-1.8
7/11/2012	-1.91	-1.91	-1.91	-1.8
12/3/2012	-0.03	-0.03	-0.03	-1.8
3/20/2013	0.00	0.00	0.00	-1.8
6/19/2013	0.26	0.26	0.26	-1.8
8/28/13	1.43	1.43	1.43	-1.8
12/3/2013	0.43	0.43	0.43	-1.8
2/17/2014	0.46	0.46	0.46	-1.8
5/12/2014	1.61	1.61	1.61	-1.8
8/18/2014	1.12	1.12	1.12	-1.8
12/1/2014	0.4	0.4	0.4	-1.8
2/18/2015	0.87	0.87	0.87	-1.8
5/13/2015	1.26	1.26	1.26	-1.8
8/10/2015	0.93	0.93	0.93	-1.8
12/7/2015	0.53	0.53	0.53	-1.8
3/7/2016	0.9	0.9	0.9	-1.8
5/9/2016	0.74	0.74	0.74	-1.8
8/22/2016	0.37	0.37	0.37	-1.8
11/29/2016	0.17	0.17	0.17	-1.8
2/20/2017	-0.12	-0.12	-0.12	-1.8
5/8/2017	0.35	0.35	0.35	-1.8
9/5/2017	11.47	11.47	11.47	-1.8
12/4/2017	0.13	0.13	0.13	-1.8
3/26/2018	0.9	0.9	0.9	-1.8
6/18/2018	1.59	1.59	1.59	-1.8
9/10/2018	1.42	1.42	1.42	-1.8

Product Elevation in MWS-3 Compared to the Bottom of the Passyunk Sewer at Manhole F

Date	Product Elevation	Cor. Water Elevatic	Uncor. Water Elev.	Bottom of Sewer Elevation
1/12/2004	0.72	0.72		-1.28
2/24/2004	1.26	0.98		-1.28
3/23/2004	1.03	0.79		-1.28
4/22/2004	3.66	3.66		-1.28
5/10/2004	3.69	3.69		-1.28
6/8/2004	3.29	3.29		-1.28
7/15/2004	1.17	1.17		-1.28
8/24/2004	1.55	1.53		-1.28
9/21/2004	1.15	1.09		-1.28
10/4/2004	1.45	1.44		-1.28
11/10/2004	1.32	1.32		-1.28
12/15/2004	1.57	1.57		-1.28
1/11/2005	1.25	1.24		-1.28
2/25/2005	0.96	0.95		-1.28
3/18/2005	0.83	0.83		-1.28
5/18/2005	1.14	1.14		-1.28
8/2/2005	0.38	0.37		-1.28
10/24/2005	-0.32	-0.33		-1.28
1/10/2006	-0.2	-0.21	-0.23	-1.28
5/8/2006	-0.29	-0.29	-0.3	-1.28
7/10/2006	-0.01	-0.01	-0.01	-1.28
11/6/2006	1.63	1.63	1.63	-1.28
1/2/2007	1.69	1.69	1.69	-1.28
4/2/2007	1.57	1.57	1.57	-1.28
7/2/2007	1.75	1.75	1.75	-1.28
11/5/2007	0.8	0.8	0.8	-1.28
3/17/09	-0.23	-0.23	-0.23	-1.28
5/12/2009	0.36	0.36	0.36	-1.28
9/8/2009	1.88	1.88	1.88	-1.28
11/2/2009	2.19	2.19	2.19	-1.28
1/4/2010	2.34	2.34	2.34	-1.28
4/7/2010	2.85	2.85	2.85	-1.28
9/13/2010	0.86	0.86	0.86	-1.28
12/13/2010	0.49	0.49	0.49	-1.28
3/7/2011	0.45	0.45	0.45	-1.28
6/7/2011	1	1	1	-1.28

Product Elevation in MWS-3 Compared to the Bottom of the Passyunk Sewer at Manhole F

8/15/2011	1.03	1.03	1.03	-1.28
12/6/2011	1.99	1.99	1.99	-1.28
2/28/2012	1.29	1.29	1.29	-1.28
5/7/2012	0.7	0.7	0.7	-1.28
7/11/2012	0.33	0.33	0.33	-1.28
12/3/2012	0.07	0.07	0.07	-1.28
3/20/2013	0.58	0.58	0.58	-1.28
6/19/2013	1.31	1.31	1.31	-1.28
8/29/2013	2.01	2.01	2.01	-1.28
12/3/2013	0.74	0.74	0.74	-1.28
2/17/2014	0.2	0.2	0.2	-1.28
5/12/2014	2.34	2.34	2.34	-1.28
8/18/2014	1.55	1.55	1.55	-1.28
12/1/2014	0.86	0.86	0.86	-1.28
2/18/2015	1.25	1.25	1.25	-1.28
5/13/2015	1.74	1.74	1.74	-1.28
8/10/2015	1.29	1.29	1.29	-1.28
12/7/2015	0.86	0.86	0.86	-1.28
3/8/2016	1.39	1.39	1.39	-1.28
5/9/2016	1.36	1.36	1.36	-1.28
8/22/2016	0.63	0.63	0.63	-1.28
11/29/2016	0.56	0.56	0.56	-1.28
2/20/2017	0.19	0.19	0.19	-1.28
5/8/2017	0.85	0.85	0.85	-1.28
9/5/2017	1.37	1.37	1.37	-1.28
12/4/2017	0.2	0.2	0.2	-1.28
3/26/2018	5.44	5.424	5.34	-1.28
6/18/2018	2.06	2.06	2.06	-1.28
9/10/2018	2.07	2.07	2.07	-1.28

Product Elevation in MWS-4 Compared to the Bottom of the Passyunk Sewer at Manhole G

Date	Product Elevation	Cor.Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
1/12/2004	0.88	0.88		-1.28
2/24/2004	0.51	0.51		-1.28
3/23/2004	0.56	0.56		-1.28
4/22/2004	1.17	1.17		-1.28
5/10/2004	1.29	1.29		-1.28
6/8/2004	0.92	0.92		-1.28
7/15/2004	1.09	1.09		-1.28
8/24/2004	1.09	1.09		-1.28
9/21/2004	2.3	2.3		-1.28
10/4/2004	1.05	1.05		-1.28
11/10/2004	1.04	1.04		-1.28
12/15/2004	1.21	1.21		-1.28
1/11/2005	1.09	1.09		-1.28
2/25/2005	0.97	0.97		-1.28
3/18/2005	0.85	0.85		-1.28
5/18/2005	1.23	1.23		-1.28
8/2/2005	0.38	0.38		-1.28
10/24/2005	-0.09	-0.09		-1.28
1/10/2006	-0.17	-0.17	-0.17	-1.28
5/8/2006	-0.02	-0.02	-0.02	-1.28
7/10/2006	0.27	0.27	0.27	-1.28
11/6/2006	1.53	1.53	1.53	-1.28
1/2/2007	1.81	1.81	1.81	-1.28
4/2/2007	1.86	1.86	1.86	-1.28
7/2/2007	1.86	1.86	1.86	-1.28
11/5/2007	0.94	0.94	0.94	-1.28
3/17/2009	0.15	0.15	0.15	-1.28
5/12/2009	0.79	0.79	0.79	-1.28
9/8/09	1.79	1.79	1.78	-1.28
11/2/09	2.28	2.28	2.26	-1.28
1/4/10	1.92	1.92	1.92	-1.28

Product Elevation in MWS-4 Compared to the Bottom of the Passyunk Sewer at Manhole G

4/7/10	3	3	3	-1.28
9/13/10	1.12	1.12	1.11	-1.28
12/13/10	0.99	0.99	0.99	-1.28
3/7/11	1.06	1.06	1.06	-1.28
6/7/11	1.23	1.23	1.23	-1.28
8/15/11	1.38	1.38	1.38	-1.28
12/6/11	2.16	2.16	2.16	-1.28
2/28/12	1.49	1.49	1.49	-1.28
5/7/12	1.24	1.24	1.24	-1.28
7/11/12	0.58	0.58	0.58	-1.28
12/4/12	0.50	0.50	0.50	-1.28
3/19/13	1.04	1.04	1.04	-1.28
6/19/13	1.37	1.37	1.37	-1.28
8/28/13	2.13	2.13	2.13	-1.28
12/3/13	1.02	1.02	1.02	-1.28
2/17/14	1.34	1.34	1.34	-1.28
5/12/14	2.38	2.38	2.38	-1.28
8/18/2014	1.84	1.84	1.83	-1.28
12/1/2014	1.23	1.23	1.23	-1.28
2/18/2015	1.5	1.5	1.5	-1.28
5/13/2015	2.01	2.01	2.01	-1.28
8/10/2015	1.62	1.62	1.62	-1.28
12/7/2015	1.23	1.23	1.23	-1.28
3/7/2016	1.61	1.61	1.61	-1.28
5/9/2016	1.23	1.23	1.23	-1.28
8/22/2016	1.22	1.22	1.22	-1.28
11/29/2016	1.52	1.52	1.52	-1.28
2/20/2017	0.7	0.7	0.7	-1.28
5/10/2017	1.28	1.27	1.23	-1.28
9/5/2017	1.71	1.71	1.71	-1.28
12/4/2017	0.82	0.82	0.82	-1.28
3/26/2018	1.76	1.76	1.76	-1.28
6/18/2018	2.42	2.42	2.41	-1.28
9/10/2018	2.33	2.33	2.32	-1.28

Product Elevation in RW-G Compared to the Bottom of the Passyunk Sewer at Manhole D

Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
1/12/2004	0.38	0.38		-1.62
2/24/2004	-0.26	-0.31		-1.62
3/23/2004	-0.42	-0.54		-1.62
4/22/2004	0.2	-0.08		-1.62
5/10/2004	-0.6	-0.7		-1.62
6/8/2004	-0.05	-0.05		-1.62
7/15/2004	0.05	0.01		-1.62
8/24/2004	0.39	0.39		-1.62
9/21/2004	0.3	-0.19		-1.62
10/4/2004	0.27	0.12		-1.62
11/10/2004	0.21	0.21		-1.62
12/15/2004	0.21	0.21		-1.62
1/11/2005	0.39	0.36		-1.62
2/25/2005	0.26	0.25		-1.62
3/18/2005	0.17	0.16		-1.62
5/18/2005	0.65	0.64		-1.62
8/2/2005	-0.21	-0.22		-1.62
10/24/2005	-0.5	-0.52		-1.62
1/10/2006	-0.96	-0.95	-0.99	-1.62
5/8/2006	-0.46	-0.47	-0.5	-1.62
7/10/2006	-0.36	-0.37	-0.42	-1.62
1/2/07	1.81	1.81	1.81	-1.62
4/2/2007	1.08	1.08	1.08	-1.62
7/2/2007	1.21	1.21	1.21	-1.62
11/5/2007	0.28	0.28	0.28	-1.62
3/17/09	0.02	-0.04	-0.24	-1.62
5/12/2009	0.2	0.16	0.05	-1.62
9/8/09	1.31	1.29	1.24	-1.62
11/2/09	1.74	1.74	1.72	-1.62
1/4/10	2.05	2.05	2.04	-1.62
4/7/10	2.64	2.64	2.64	-1.62

Product Elevation in RW-G Compared to the Bottom of the Passyunk Sewer at Manhole D

9/13/10	1.01	0.95	0.74	-1.62
12/13/2010	0.67	0.55	0.19	-1.62
03/07/11	0.36	0.18	-0.37	-1.62
06/07/11	1.32	1.12	0.48	-1.62
08/15/11	0.87	0.69	0.11	-1.62
12/05/11	1.93	1.9093	1.84	-1.62
02/28/12	1.3	1.29	1.26	-1.62
05/07/12	0.84	0.72	0.31	-1.62
07/11/12	0.49	0.31	-0.48	-1.62
12/03/12	0.39	0.21	-0.41	-1.62
03/20/13	0.55	0.29	0.13	-1.62
06/19/13	0.81	0.69	0.3	-1.62
08/29/13	1.8	1.71	1.43	-1.62
12/03/13	0.85	0.82	0.72	-1.62
02/17/14	1	0.97	0.88	-1.62
05/12/14	2.02	2.02	2.02	-1.62
08/18/14	1.55	1.55	1.55	-1.62
12/01/14	0.8	0.8	0.8	-1.62
2/18/2015	1.05	1.05	1.05	-1.62
5/13/2015	1.67	1.67	1.67	-1.62
8/10/2015	1.25	1.25	1.25	-1.62
12/7/2015	2.29	2.29	2.29	-1.62
3/7/2016	2.65	2.65	2.65	-1.62
5/9/2016	2.65	2.65	2.65	-1.62
8/22/2016	2.13	2.13	2.13	-1.62
11/29/2016	1.76	1.76	1.76	-1.62
2/20/2017	1.77	1.58	0.94	-1.62
5/8/2017	2.38	2.18	1.14	-1.62
9/5/2017	2.94	2.81	2.1	-1.62
12/4/2017	2.02	1.8568	1	-1.62
3/26/2018	2.83	2.83	2.81	-1.62
6/18/2018	3.6	3.55	3.26	-1.62
9/10/2018	15.17	15.17	15.17	-1.62

Product Elevation in RW-H Compared to the Bottom of the Passyunk Sewer at Manhole C

Date	Product Elevation	Cor. Water Eleva	Uncor. Water Ele	Bottom of Sewer Elevation
1/12/2004	0.35	0.04		-1.65
2/24/2004	0.2	0.11		-1.65
3/23/2004	0	-0.71		-1.65
4/22/2004	0.56	0.47		-1.65
5/10/2004	0.62	0.46		-1.65
6/8/2004	0.47	0.32		-1.65
7/15/2004	0.4	0.11		-1.65
8/24/2004	0.71	0.61		-1.65
9/21/2004	0.47	0.36		-1.65
10/4/2004	0.51	0.5		-1.65
11/10/2004	0.46	0.45		-1.65
12/15/2004	0.54	0.54		-1.65
1/11/2005	0.92	0.92		-1.65
2/25/2005	0.6	0.6		-1.65
3/18/2005	0.6	0.6		-1.65
5/18/05	0.96	0.96		-1.65
8/2/05	0.13	0.13		-1.65
10/24/05	-1.28	-1.3		-1.65
1/10/06	-0.66	-0.66	-0.66	-1.65
5/8/06	-0.41	-0.42	-0.45	-1.65
7/10/06	-0.04	-0.04	-0.06	-1.65
11/6/06	1.11	1.11	1.11	-1.65
1/2/07	1.3	1.3	1.3	-1.65
4/2/07	1.38	1.38	1.38	-1.65
7/2/07	1.56	1.56	1.56	-1.65
11/5/07	0.53	0.53	0.52	-1.65
3/24/08	0.56	0.32	-0.56	-1.65
3/17/09	1.99	1.77	1.07	-1.65
5/12/09	2.12	1.91	1.26	-1.65
9/8/09	3.11	3.11	3.11	-1.65
11/2/09	3.48	3.41	3.19	-1.65
1/4/10	3.56	3.42	2.99	-1.65
4/7/10	4.41	4.35	4.15	-1.65
9/13/10	2.8	2.76	2.64	-1.65

Product Elevation in RW-H Compared to the Bottom of the Passyunk Sewer at Manhole C

12/13/10	2.32	2.28	2.17	-1.65
3/7/11	2.06	2.04	1.99	-1.65
6/7/11	0.95	0.92	0.81	-1.65
8/15/11	2.52	2.49	2.38	-1.65
12/5/11	3.66	3.66	3.66	-1.65
2/28/12	3.07	3.06	3.03	-1.65
5/7/12	2.51	2.5	2.46	-1.65
7/11/2012	4.19	4.18	4.14	-1.65
12/3/2012	1.49	1.49	1.49	-1.65
3/20/2013	2.09	2.09	2.09	-1.65
6/19/2013	2.46	2.46	2.46	-1.65
8/29/2013	3.41	3.41	3.41	-1.65
12/3/2013	2.39	2.39	2.39	-1.65
2/17/2014	3.02	3.02	3.02	-1.65
5/12/2014	3.76	3.76	3.76	-1.65
8/18/2014	3.3	3.3	3.3	-1.65
12/1/2014	2.57	2.57	2.57	-1.65
2/18/2015	2.81	2.81	2.81	-1.65
5/13/2015	3.44	3.44	3.44	-1.65
8/10/2015	3.1	3.1	3.1	-1.65
12/7/2015	3.72	3.72	3.72	-1.65
3/7/2016	4.05	4.05	4.05	-1.65
5/9/2016	4.07	4.07	4.07	-1.65
8/22/2016	3.98	3.98	3.98	-1.65
11/29/2016	3.28	3.28	3.28	-1.65
2/20/2017	2.96	2.96	2.96	-1.65
5/8/2017	3.63	3.63	3.63	-1.65
9/5/2017	4.23	4.23	4.23	-1.65
12/4/2017	3.28	3.28	3.28	-1.65
3/26/2018	4.46	4.46	4.46	-1.65
6/18/2018	4.98	4.98	4.98	-1.65
9/10/2018	4.8	4.8	4.8	-1.65

Product Elevation in RW-I Compared to the Bottom of the Passyunk Sewer at Manhole B

Date	Product Elevation	Cor. Water Elevatio	Uncor. Water Elevation	Bottom of Sewer Elevation
1/12/2004	0.24	0.11		-1.68
2/24/2004	-0.06	-0.56		-1.68
3/23/2004	-0.53	-1.17		-1.68
4/22/2004	-0.06	-0.16		-1.68
5/10/2004	0.28	-0.26		-1.68
6/8/2004	0.05	-0.52		-1.68
7/15/2004	0.5	-0.51		-1.68
8/24/2004	0.99	-0.33		-1.68
9/21/2004	0.1	-0.12		-1.68
10/4/2004	0.58	0.18		-1.68
11/10/2004	0.36	0.06		-1.68
12/15/2004	0.17	0.07		-1.68
1/11/2005	0.27	0.19		-1.68
2/25/2005	0.22	0.09		-1.68
3/18/2005	0.07	-0.01		-1.68
5/18/2005	0.53	0.49		-1.68
8/2/2005	-0.08	-0.22		-1.68
10/24/2004	-0.7	-0.75		-1.68
1/10/2006	-0.87	-0.97	-1.28	-1.68
5/8/2006	-0.67	-0.81	-1.24	-1.68
7/10/2006	-0.17	-0.41	-1.19	-1.68
11/6/2006	0.77	0.76	0.71	-1.68
1/2/2007	1.24	1.24	1.24	-1.68
4/2/2007	1	1	1	-1.68
7/2/2007	1.22	1.02	1.17	-1.68
11/5/2007	0.32	0.28	0.15	-1.68
3/24/2008	0.12	0.09	-0.02	-1.68
3/17/2009	1.73	1.45	0.56	-1.68
5/12/2009	2.33	2.06	1.21	-1.68
9/8/09	3.33	3.13	2.5	-1.68
11/2/09	3.67	3.45	2.76	-1.68
1/4/10	3.87	3.83	3.59	-1.68
4/7/10	4.48	4.48	4.48	-1.68
9/13/10	2.99	2.99	2.99	-1.68

Product Elevation in RW-I Compared to the Bottom of the Passyunk Sewer at Manhole B

12/13/10	2.37	2.37	2.37	-1.68
3/7/11	2.16	2.16	2.16	-1.68
6/7/11	0.65	0.65	0.65	-1.68
8/15/11	2.66	2.66	2.66	-1.68
12/6/11	3.78	3.78	3.78	-1.68
2/28/12	3.18	3.18	3.18	-1.68
5/7/12	2.72	2.72	2.72	-1.68
7/11/12	2.38	2.38	2.38	-1.68
12/3/12	2.13	2.13	2.13	-1.68
3/20/13	2.11	2.11	2.11	-1.68
6/19/13	2.53	2.53	2.53	-1.68
8/28/13	3.64	3.64	3.64	-1.68
12/3/2013	2.61	2.61	2.61	-1.68
2/17/2014	2.76	2.76	2.76	-1.68
5/12/2014	3.88	3.88	3.88	-1.68
8/18/2014	3.51	3.51	3.51	-1.68
12/1/2014	2.79	2.79	2.79	-1.68
2/18/2015	3.1	3.1	3.1	-1.68
5/13/2015	3.59	3.59	3.59	-1.68
8/10/2015	1.01	1.01	1.01	-1.68
12/7/2015	4.00	4.00	4.00	-1.68
3/7/2016	4.35	4.35	4.35	-1.68
5/9/2016	4.27	4.27	4.27	-1.68
8/22/2016	3.79	3.79	3.79	-1.68
11/29/2016	3.56	3.56	3.56	-1.68
2/20/2017	3.34	3.34	3.34	-1.68
5/8/2017	3.92	3.92	3.92	-1.68
9/5/2017	4.56	4.56	4.56	-1.68
12/4/2017	3.58	3.58	3.58	-1.68
3/26/2018	4.5	4.5	4.5	-1.68
6/18/2018	5.36	5.36	5.36	-1.68
9/10/2018	4.69	4.69	4.69	-1.68

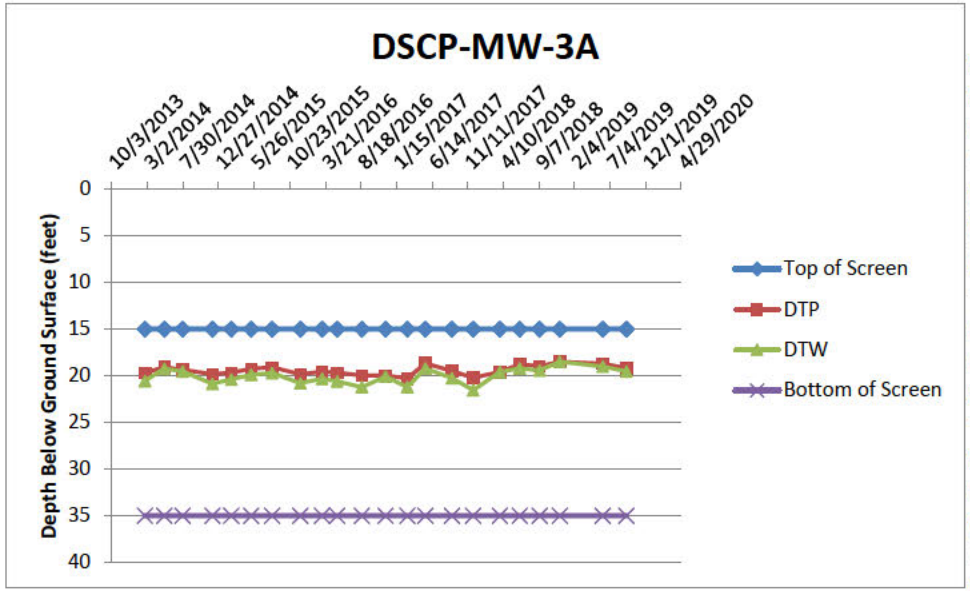
Product Elevation in RW-M Compared to the Bottom of the Passyunk Sewer at Manhole E

Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
1/12/2004	0.47	0.47		-1.52
2/24/2004	0.49	0.49		-1.52
3/23/2004	0.67	0.67		-1.52
4/22/2004	0.99	0.99		-1.52
5/10/2004	0.78	0.78		-1.52
6/8/2004	0.91	0.91		-1.52
7/15/2004	0.81	0.81		-1.52
8/24/2004	1.25	1.25		-1.52
9/21/2004	1.09	1.09		-1.52
10/4/2004	1.12	1.12		-1.52
11/10/2004	1.07	1.07		-1.52
12/15/2004	1.09	1.09		-1.52
1/11/2005	1.62	1.62		-1.52
2/25/2005	0.99	0.99		-1.52
3/18/2005	0.85	0.85		-1.52
5/18/2005	1.4	1.4		-1.52
8/2/2005	0.54	0.54		-1.52
10/24/2005				-1.52
1/10/2006	-0.15	-0.15	-0.15	-1.52
5/8/2006	-0.04	-0.04	-0.04	-1.52
7/10/2006	0.33	0.33	0.33	-1.52
11/6/2006				-1.52
1/2/07	1.9	1.9	1.9	-1.52
4/2/2007	1.83	1.83	1.83	-1.52
7/2/2007	2	2	2	-1.52
11/5/2007	1.01	1.01	1.01	-1.52
3/17/09	-0.26	-0.26	-0.26	-1.52
5/12/2009	0.15	0.15	0.15	-1.52
9/8/2009	1.35	1.35	1.35	-1.52
11/2/2009	1.7	1.7	1.7	-1.52
1/4/2010	2.06	2.06	2.06	-1.52
4/7/2010	2.62	2.62	2.62	-1.52
9/13/2010	0.96	0.96	0.96	-1.52
12/13/2010	0.45	0.45	0.45	-1.52
3/7/2011	0.25	0.25	0.25	-1.52
6/7/2011	0.96	0.96	0.96	-1.52

Product Elevation in RW-M Compared to the Bottom of the Passyunk Sewer at Manhole E

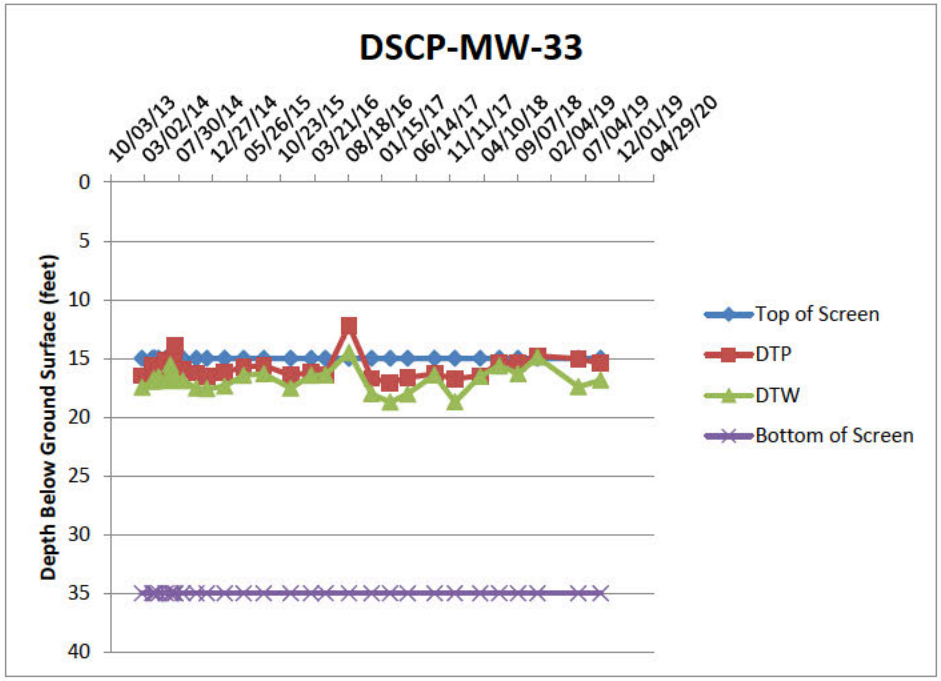
15-Aug	0.77	0.77	0.77	-1.52
12/6/2011	1.9	1.9	1.9	-1.52
2/28/2012	1.25	1.25	1.25	-1.52
5/7/2012	0.7	0.7	0.7	-1.52
7/11/2012	0.37	0.37	0.37	-1.52
12/3/2012	0.64	0.64	0.64	-1.52
3/20/2013	0.33	0.33	0.33	-1.52
6/19/2013	0.78	0.78	0.78	-1.52
8/29/2013	1.79	1.79	1.79	-1.52
12/3/2013	0.74	0.74	0.74	-1.52
2/17/2014	1.03	1.03	1.03	-1.52
5/12/2014	2.07	2.07	2.07	-1.52
8/18/2014	1.53	1.53	1.53	-1.52
12/1/2014	0.81	0.81	0.81	-1.52
2/18/2015	1.21	1.21	1.21	-1.52
5/13/2015	1.67	1.67	1.67	-1.52
8/10/2015	1.18	1.18	1.18	-1.52
12/7/2015	2.41	2.41	2.41	-1.52
3/7/2016	2.76	2.76	2.76	-1.52
5/9/2016	2.83	2.83	2.83	-1.52
8/22/2016	2.4	2.4	2.4	-1.52
12/2/2016	2.31	2.31	2.31	-1.52
2/20/2017	1.72	1.72	1.72	-1.52
5/8/2017	6.51	6.44	6.06	-1.52
9/5/2017	2.91	2.91	2.91	-1.52
12/4/2017	1.87	1.87	1.87	-1.52
3/26/2018	2.95	2.95	2.95	-1.52
6/18/2018	3.64	3.64	3.64	-1.52
9/10/2018	4.03	4.03	4.03	-1.52

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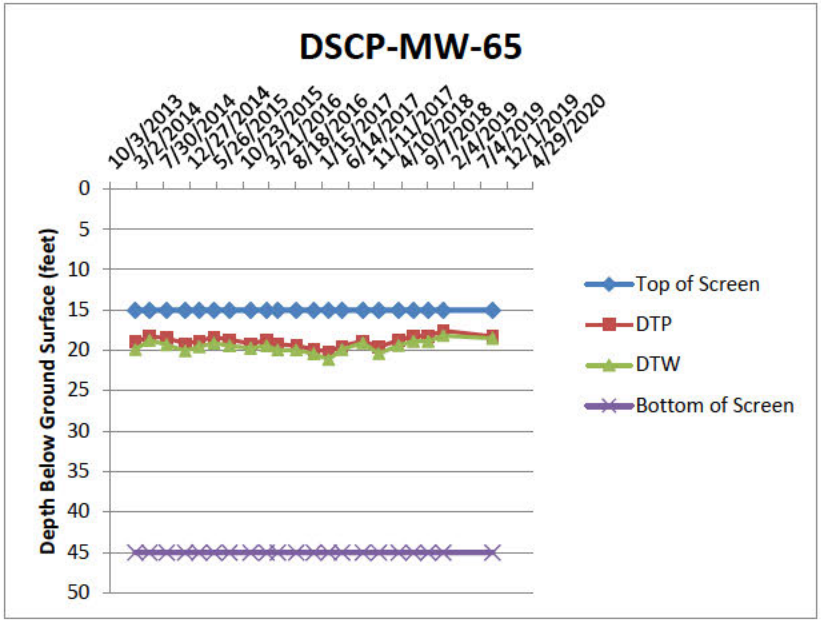
Date	DTP	DTW	PT
02/20/14	19.72	20.58	0.86
05/12/14	19.08	19.28	0.2
07/28/14	19.37	19.55	0.18
12/01/14	19.84	20.89	1.05
02/18/15	19.68	20.41	0.73
05/13/15	19.29	19.9	0.61
08/10/15	19.1	19.71	0.61
12/07/15	19.85	20.81	0.96
03/07/16	19.56	20.35	0.79
05/09/16	19.69	20.61	0.92
08/22/16	20	21.25	1.25
11/29/16	20.01	20.08	0.07
03/01/17	20.31	21.24	0.93
05/16/17	18.68	19.22	0.54
09/05/17	19.51	20.25	0.74
12/04/17	20.22	21.56	1.34
03/26/18	19.59	19.6	0.01
06/18/18	18.8	19.21	0.41
09/10/18	18.99	19.44	0.45
12/04/18	18.51	18.52	0.01
06/03/19	18.72	19.02	0.30
09/10/19	19.19	19.55	0.36

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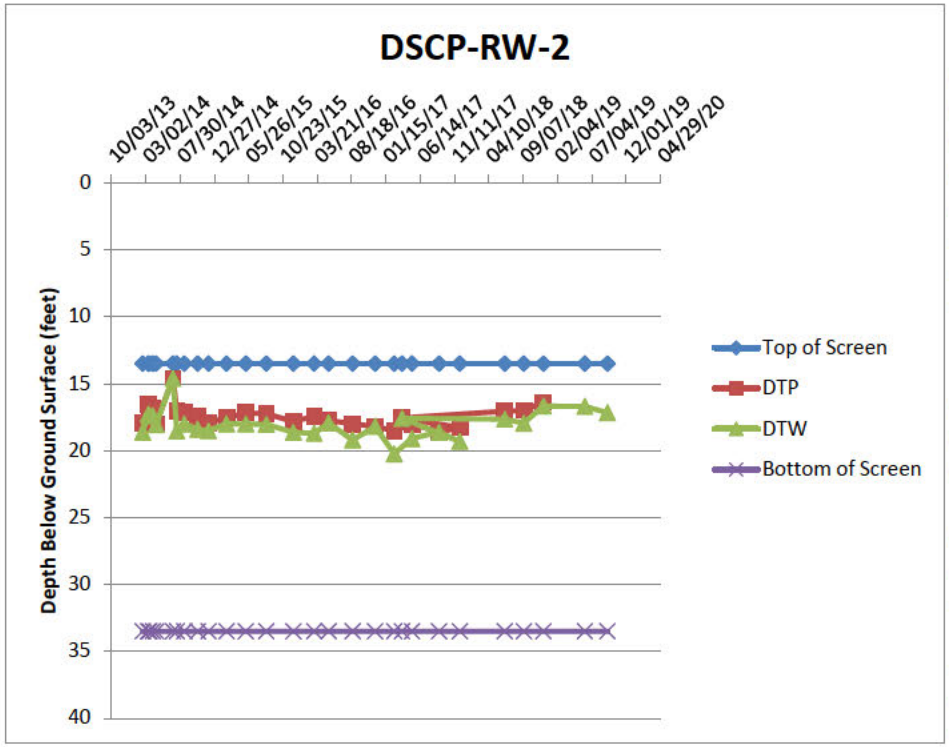
Date	DTP	DTW	PT
02/17/14	16.46	17.47	1.01
04/04/14	15.57	16.96	1.39
04/11/14	16.42	16.74	0.32
04/17/14	16.58	16.91	0.33
05/02/14	16.08	16.59	0.51
06/02/14	15.1	16.89	1.79
06/23/14	15.24	15.52	0.28
06/25/14	15.82	16.35	0.53
07/08/14	15.04	16.77	1.73
07/15/14	13.91	16.57	2.66
08/18/14	16	16.89	0.89
10/16/14	16.23	17.53	1.3
12/01/14	16.48	17.59	1.11
02/18/15	16.16	17.39	1.23
05/13/15	15.75	16.45	0.7
08/10/15	15.59	16.3	0.71
12/07/15	16.45	17.55	1.1
03/07/16	16.17	16.44	0.27
05/09/16	16.41	16.41	0
08/22/16	12.2	14.5	2.3
11/29/16	16.7	18.03	1.33
02/20/17	17.08	18.74	1.66
05/08/17	16.65	18.05	1.4
09/05/17	16.3	16.42	0.12
12/4/2017	16.75	18.72	1.97
3/26/2018	16.49	16.54	0.05
6/18/2018	15.4	15.64	0.24
9/10/2018	15.44	16.31	0.87
12/4/2018	14.8	14.88	0.08
6/3/2019	15.03	17.42	2.39
9/10/2019	15.42	16.85	1.43

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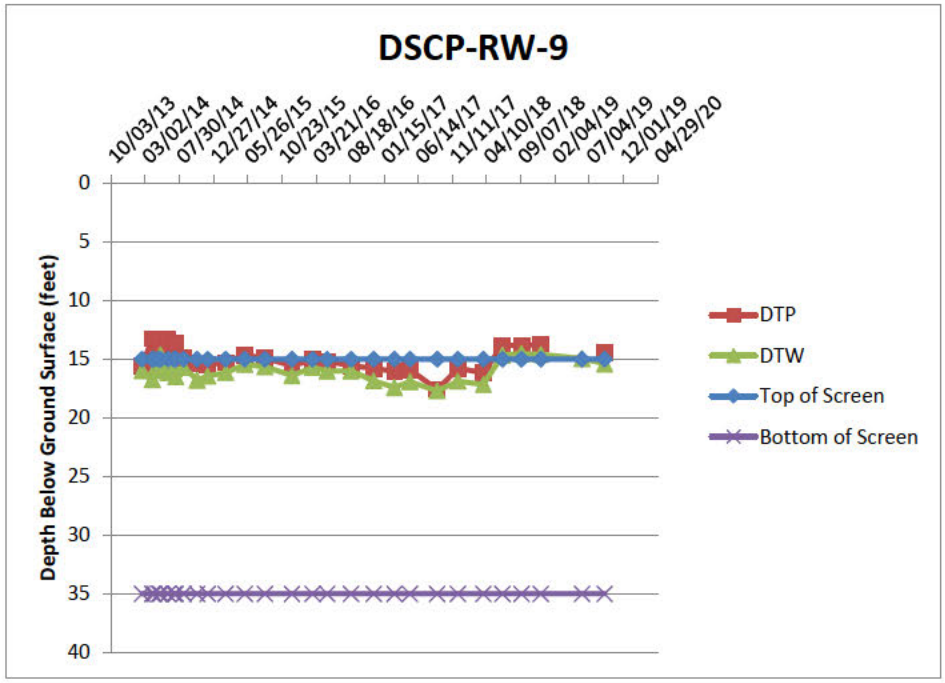
Date	DTP	DTW	PT
02/20/14	18.92	19.87	0.95
05/12/14	18.26	18.76	0.5
08/18/14	18.46	19.28	0.82
12/01/14	19.13	20.04	0.91
02/18/15	18.8	19.52	0.72
05/13/15	18.36	19.09	0.73
08/10/15	18.65	19.42	0.77
12/07/15	19.1	19.72	0.62
03/07/16	18.75	19.42	0.67
05/09/16	19.2	19.94	0.74
08/22/16	19.4	19.94	0.54
11/29/16	19.85	20.41	0.56
02/20/17	20.17	21.11	0.94
05/08/17	19.43	19.89	0.46
09/05/17	18.8	19.03	0.23
12/04/17	19.56	20.37	0.81
03/26/18	18.73	19.37	0.64
06/18/18	18.22	18.84	0.62
09/10/18	18.2	18.86	0.66
12/04/18	17.53	18.16	0.63
09/10/19	18.25	18.49	0.24

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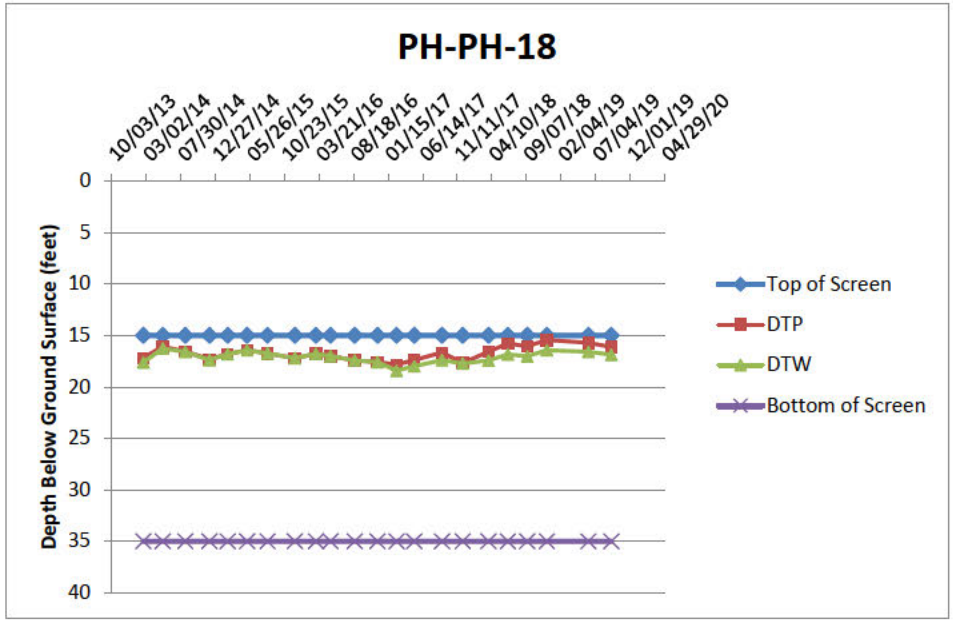
Date	DTP	DTW	PT
02/17/14	17.95	18.62	18.62
03/13/14	16.56	17.3	18.62
03/18/14	16.78	17.37	18.62
04/02/14	16.78	17.37	0.59
04/17/14	18.00	18.05	0.05
06/30/14	14.60	14.6	0
07/16/14	17.04	18.55	1.51
08/18/14	17.17	18	0.83
10/16/14	17.41	18.42	1.01
12/01/14	17.92	18.52	0.6
02/18/15	17.57	17.99	0.42
05/13/15	17.18	18.01	0.83
08/10/15	17.26	18.04	0.78
12/07/15	17.82	18.64	0.82
03/07/16	17.45	18.7	1.25
05/09/16	17.75	17.93	0.18
08/22/16	18.00	19.2	1.2
11/29/16	NONE	18.21	0
02/20/17	18.53	20.24	1.71
05/08/17	18.00	19.11	1.11
09/05/17	18.63	18.63	0
12/04/17	18.28	19.33	1.05
03/26/17	17.58	17.59	0.01
06/18/18	17.08	17.65	0.57
09/10/18	17.02	17.95	0.93
12/04/18	16.40	16.68	0.28
06/03/19	NONE	16.7	0
09/10/19	NONE	17.17	0

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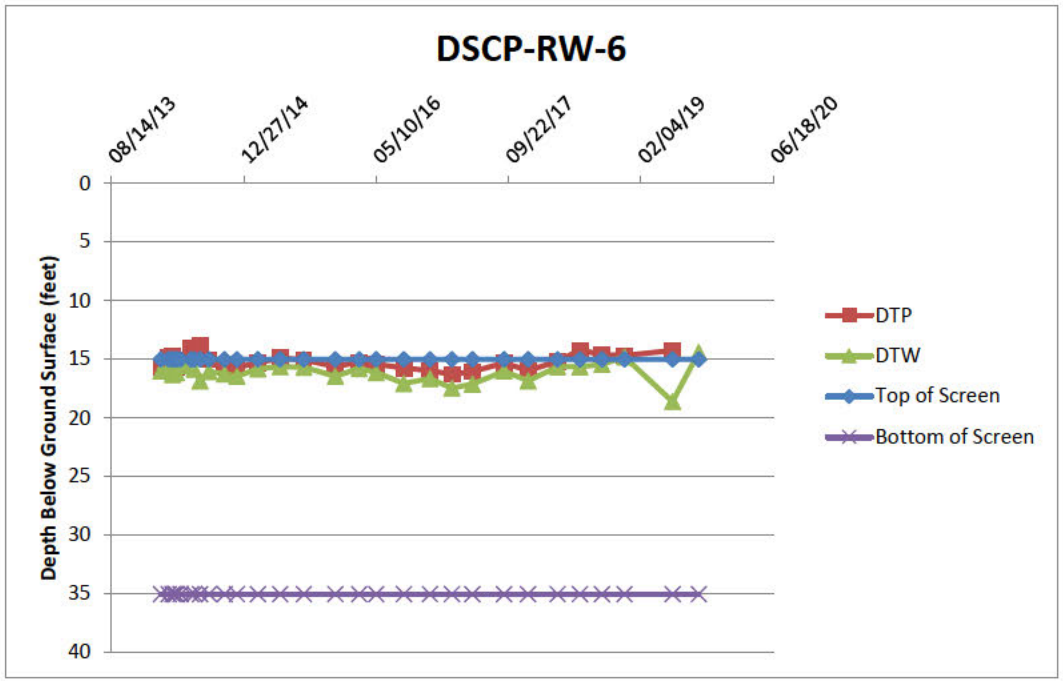
Date	DTP	DTW	PT
02/17/14	15.62	15.98	0.36
04/02/14	13.23	16.75	3.52
04/11/14	15.10	15.98	0.88
05/02/14	14.77	15.7	0.93
05/09/14	14.22	14.64	0.42
06/11/14	13.33	16.17	2.84
07/07/14	14.03	15.8	1.77
07/15/14	13.67	16.5	2.83
08/18/14	14.88	15.72	0.84
10/16/14	15.41	16.78	1.37
12/01/14	15.45	16.45	1
02/18/15	15.27	16.15	0.88
05/13/15	14.65	15.45	0.8
08/10/15	14.94	15.65	0.71
12/07/15	15.55	16.4	0.85
03/07/16	15.05	15.72	0.67
05/09/16	15.19	16	0.81
08/22/16	15.55	16.02	0.47
11/29/16	15.77	16.85	1.08
02/28/17	16.04	17.4	1.36
05/08/17	15.9	16.93	1.03
09/05/17	17.6	17.7	0.1
12/4/2017	15.79	16.89	1.1
3/26/2018	16.14	17.15	1.01
6/18/2018	13.82	14.65	0.83
9/10/2018	13.86	14.53	0.67
12/4/2018	13.72	14.58	0.86
6/3/2019	NONE	14.96	0
9/10/2019	14.45	15.4	0.95

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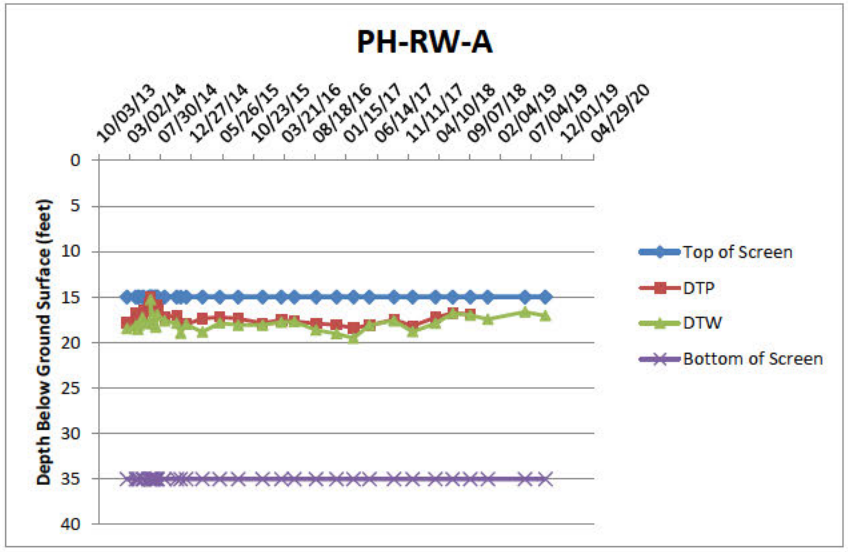
Date	DTP	DTW	PT
02/17/14	17.17	17.63	0.46
05/12/14	16.09	16.28	0.19
08/18/14	16.55	16.6	0.05
12/01/14	17.3	17.4	0.1
02/18/15	16.81	16.82	0.01
05/13/15	16.42	16.44	0.02
08/10/15	NONE	16.75	0
12/07/15	NONE	17.2	0
03/07/16	NONE	16.79	0
05/09/16	NONE	17	0
08/22/16	17.42	17.43	0.01
11/29/16	NONE	17.61	0
02/20/17	17.83	18.44	0.61
05/08/17	17.4	18	0.6
09/05/17	16.66	17.38	0.72
12/04/17	17.67	17.73	0.06
03/26/18	16.57	17.45	0.88
06/18/18	15.8	16.84	1.04
09/10/18	16.05	17.02	0.97
12/04/18	15.43	16.44	1.01
06/03/19	15.71	16.61	0.9
09/10/19	16.11	16.88	0.77

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Former Defense Supply Center Philadelphia
Through Third Quarter of 2019



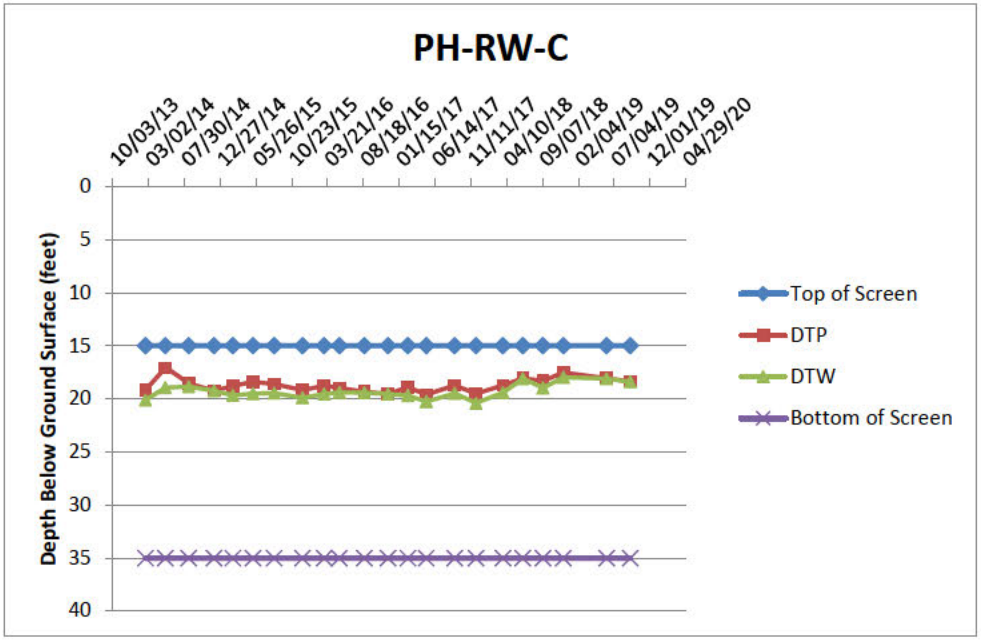
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04/11/14	15.41	16.07	0.66
04/17/14	15.63	16.13	0.5
05/02/14	15.06	15.53	0.47
06/11/14	14.06	15.49	1.43
06/23/14	14.06	15.83	1.77
07/15/14	13.85	16.85	3
08/18/14	14.99	16.04	1.05
10/16/14	15.54	16.23	0.69
12/01/14	15.66	16.45	0.79
02/18/15	15.32	15.8	0.48
05/13/15	14.87	15.62	0.75
08/10/15	15.07	15.67	0.6
12/07/15	15.6	16.45	0.85
03/07/16	15.24	15.77	0.53
05/09/16	15.4	16.13	0.73
08/22/16	15.72	17.05	1.33
11/29/16	15.95	16.65	0.7
02/20/17	16.27	17.45	1.18
05/08/17	16.05	17.1	1.05
09/05/17	15.3	16	0.7
12/4/2017	15.97	16.84	0.87
3/26/2018	15.15	15.64	0.49
6/18/2018	14.22	15.64	1.42
9/10/2018	14.58	15.44	0.86
12/04/18	14.68	14.79	0.11
06/03/19	14.25	18.6	4.35
09/10/19	NONE	14.4	0

Water Level and Well Screen Tracking
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019



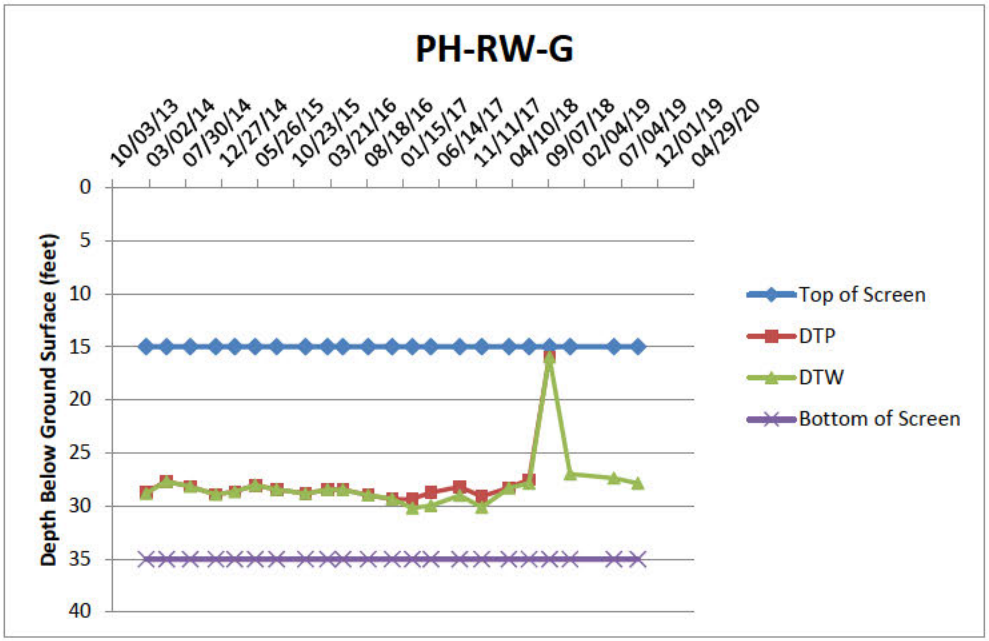
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03/31/14	16.80	18.15	1.35
04/11/14	17.54	18.56	1.02
04/15/14	17.46	18.11	0.65
05/02/14	17.19	17.27	0.08
05/09/14	16.5	17.89	1.39
06/02/14	15.78	17.88	2.1
06/10/14	16.21	17.8	1.59
06/11/14	16.09	17.61	1.52
06/12/14	14.96	15.3	0.34
06/18/14	16	17.88	1.88
06/23/14	16.06	17.05	0.99
06/30/14	15.88	17.97	2.09
07/07/14	15.86	18.32	2.46
07/11/14	16.2	17	0.8
07/16/14	16.37	17.04	0.67
08/18/14	17.25	17.63	0.38
10/16/14	17	17.92	0.92
11/05/14	17.95	18.98	1.03
12/01/14	NONE	18.01	0
02/18/15	17.36	18.84	1.48
05/13/15	17.2	17.85	0.65
08/10/15	17.36	18.1	0.74
12/07/15	17.88	18.09	0.21
03/07/16	17.52	17.78	0.26
05/09/16	17.7	17.73	0.03
08/22/16	17.92	18.64	0.72
11/29/16	18.08	19.03	0.95
02/20/17	18.41	19.54	1.13
05/08/17	NONE	18.13	0
09/05/17	17.48	17.61	0.13
12/4/2017	18.18	18.83	0.65
3/26/2018	17.23	17.91	0.68
6/18/2018	16.77	16.8	0.03
9/10/2018	16.9	17	0.1
12/04/18	NONE	17.44	0
06/03/19	NONE	16.63	0
09/10/19	NONE	17.05	0

Water Level and Well Screen Tracking
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019



Date	DTP	DTW	PT
02/17/14	19.18	20.12	0.94
05/12/14	17.05	18.94	1.89
08/18/14	18.55	18.84	0.29
12/01/14	19.23	19.24	0.01
02/18/15	18.8	19.65	0.85
05/13/15	18.38	19.51	1.13
8/10/2015	18.62	19.44	0.82
12/7/2015	19.2	19.92	0.72
3/7/2016	18.75	19.55	0.8
5/9/2016	18.97	19.4	0.43
8/22/2016	19.32	19.42	0.1
11/29/2016	NONE	19.55	0
2/20/2017	18.9	19.68	0.78
5/8/2017	19.6	20.25	0.65
9/5/2017	18.72	19.48	0.76
12/04/17	19.53	20.4	0.87
03/26/18	18.72	19.42	0.7
06/18/18	18.07	18.1	0.03
09/10/18	18.3	18.95	0.65
12/04/18	17.54	17.98	0.44
06/03/19	18.08	18.1	0.02
09/10/19	18.37	18.38	0.01

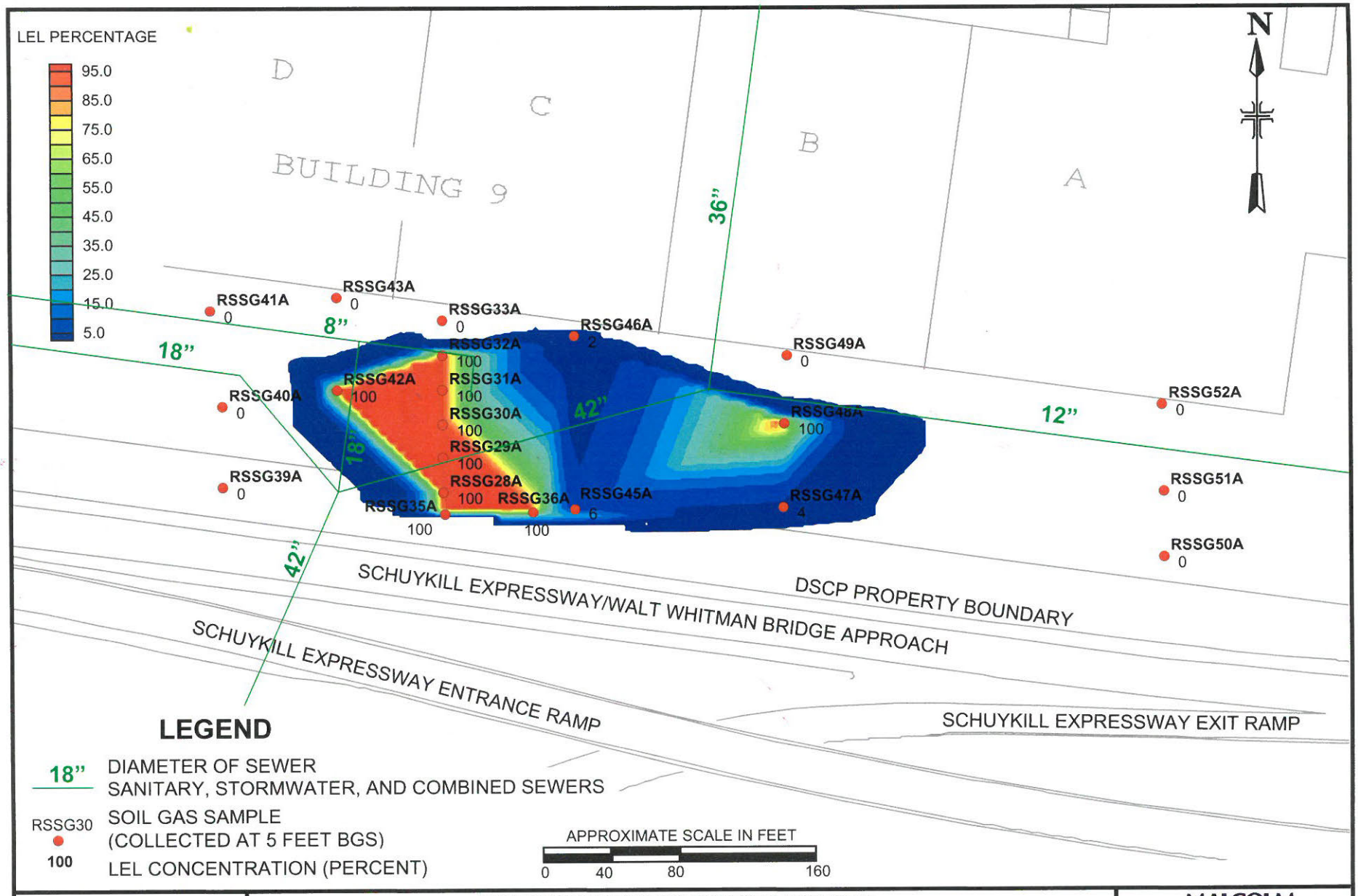
Water Level and Well Screen Tracking
Former Defense Supply Center Philadelphia
Through Third Quarter of 2019



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08/18/14	NONE	28.15	0
12/01/14	NONE	28.9	0
02/18/15	NONE	28.65	0
05/13/15	NONE	28.03	0
8/10/2015	NONE	28.45	0
12/7/2015	NONE	28.83	0
3/7/2016	NONE	28.47	0
5/9/2016	NONE	28.47	0
8/22/2016	NONE	28.99	0
11/29/2016	NONE	29.36	0
2/20/2017	29.35	30.18	0.83
5/8/2017	28.74	29.98	1.24
09/05/17	28.18	29.02	0.84
12/04/17	29.1	30.12	1.02
03/26/18	28.29	28.31	0.02
06/18/18	27.52	27.86	0.34
09/10/18	NONE	15.95	0
12/04/18	NONE	27.00	0
06/03/19	NONE	27.38	0
09/10/19	NONE	27.88	0

Appendix I

Silt and Sewer Drawings



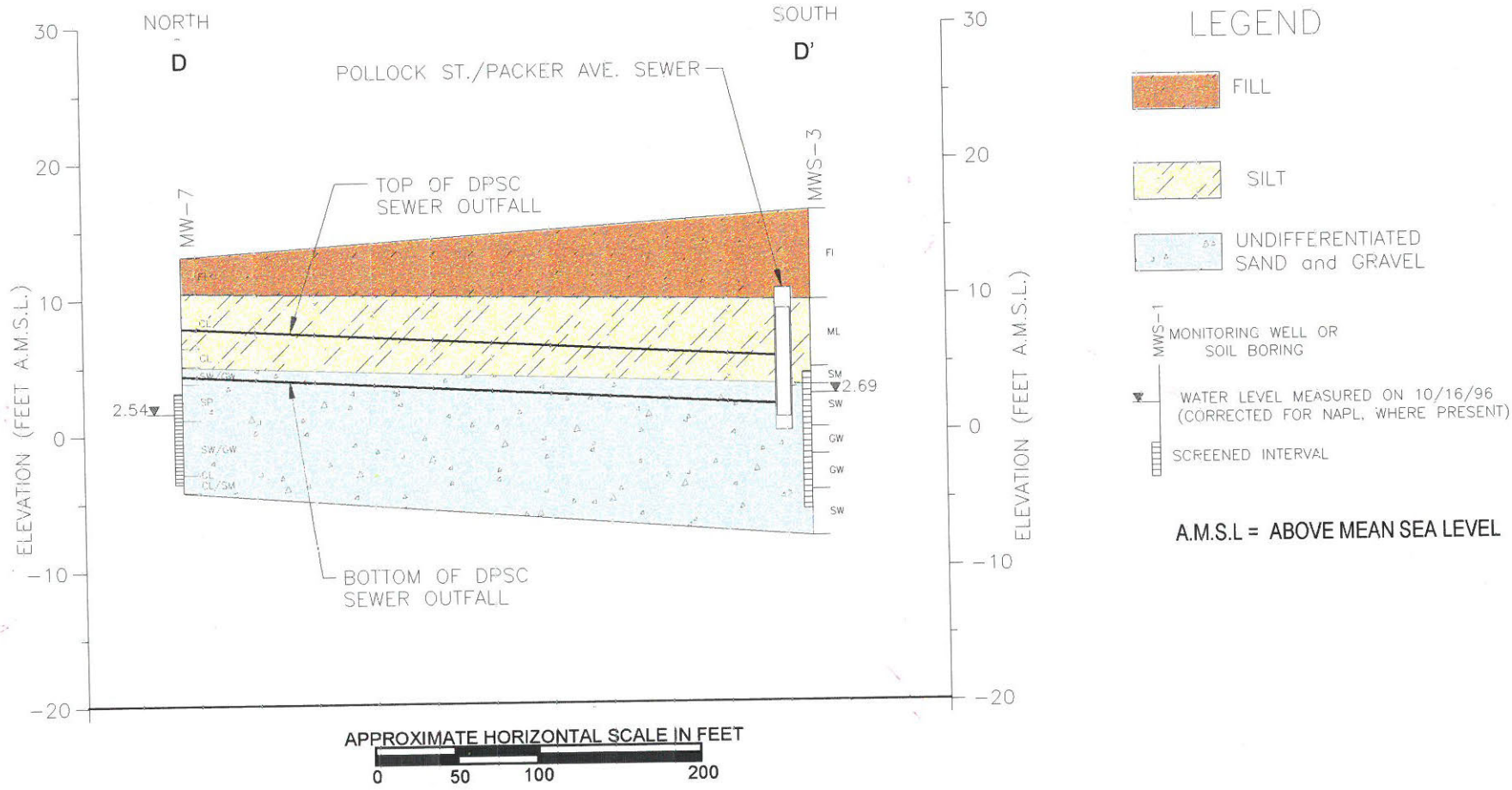
US Army Corps of Engineers
Baltimore District

DEFENSE SUPPLY CENTER PHILADELPHIA
PHILADELPHIA, PENNSYLVANIA

RESULTS OF SHALLOW SOIL GAS SAMPLES SOUTH OF BUILDING 9 (2000)

MALCOLM PIRNIE

FIGURE 10



US Army Corps of Engineers
Baltimore District

DEFENSE SUPPLY CENTER PHILADELPHIA
PHILADELPHIA, PENNSYLVANIA

CROSS SECTION D-D' - DSCP COMBINED SEWER OUTFALL

MALCOLM PIRNIE

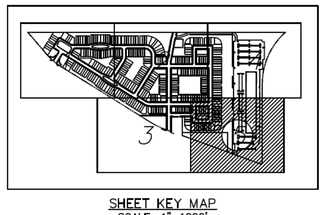
FIGURE 11

MATCH TO C303

DATE:	REVISION:
11/26/08	ISSUED TO OWNER
12/15/08	REVISED SWALE GRADING
12/16/08	REVISED LOT DATA, ISSUED TO OWNER
01/29/09	REVISED BASIN E GRADING
02/17/12	NPDES PERMIT RENEWAL APPLICATION
05/24/12	PER DEP COMMENTS – 04/30/2012

LEGEND

- Existing Contour
- Existing Building
- Existing Edge of Paving
- Existing Right of Way
- Existing Tree Line
- Existing Wetland Limit Line
- Existing Flood Plain Line
- Existing Lot Line
- Property Line
- Existing Sanitary Sewer
- Existing Storm Sewer
- Existing Electric Line
- Existing Utility Pole
- Existing Drainage Area Line
- Proposed Building
- Proposed Curb Line
- Proposed Edge of Paving
- Proposed Right of Way
- Proposed Right of Way
- Proposed Sanitary Sewer
- Proposed Storm Sewer
- Proposed Water
- Proposed Drainage Easement
- Proposed Sanitary Sewer Easement
- Proposed Inlet
- Proposed Drainage/Sanitary Manhole
- Proposed Sidewalk
- Proposed Drainage Area Line
- Proposed Concrete Curb
- Proposed Endwall
- (FF-30) Proposed Filter Fabric Fence
- (RCE) Proposed Rock Construction Entrance
- (SSF) Super Filter Fabric Fence
- (GIP) Gravel Inlet Protection
- Rock Energy Dissipater
- Areas of BMP Installation & Completed Construction
- Limit of Disturbance
- Orange Safety Fence
- Roadway Pavement to be Removed
- Walkway Pavement to be Removed
- Utility Line to be Abandoned
- Pole to be Removed
- Light Pole
- 112.00 Proposed Top of Curb Elevation
- ICP Existing Elevations per City Plan
- Parking Block
- Traffic Flow Arrow (Not to be Painted)
- Curb Cut with Driveway Apron
- Outbound Breakpoint
- Proposed Private Inlet
- Stormwater Drainage Flow Arrow



SHEET KEY MAP
SCALE: 1"=1000'

GRAPHIC SCALE
(IN FEET)
1 inch = 1 ft.

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SIENA PLACE
3100–3190 PENROSE FERRY ROAD
PHILADELPHIA, PENNSYLVANIA

UTILITY PLAN

C305

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — DANILO R. SALAMEDA — ENGINEER PE-045167-E

Scale:	1"=30'
Originated By:	DRS
Drawn By:	RPU
Checked By:	DRS
Project Mgr.:	DRS
Project No.:	20051505
Sheet No.:	OF
Issued:	

DATE:	REVISION:
11/26/08	ISSUED TO OWNER
12/15/08	REVISED SWALE GRADING
12/16/08	REVISED LOT DATA, ISSUED TO OWNER
01/29/09	REVISED BASIN E GRADING
02/17/12	NPDES PERMIT RENEWAL APPLICATION
05/24/12	PER DEP COMMENTS – 04/30/2012

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

MATCH TO C302

TRIESTE WAY

GENOA DRIVE

SIENA DRIVE

HARTRANFT STREET

POLLOCK STREET

BASIN "B"

(RESERVED FOR SEWER MAINTENANCE AND DRAINAGE PURPOSES)

FORMER

N15°00'00"E 85.040'

N60°22'07"W 27.958'

N64°27'07"W 71.152'

N15°00'00"E 105.122'

N75°00'00"W 97.000'

VEGETATED SWALE B 350' @ 0.005

YARD DRAIN (TYP)

INFILTRATION TRENCH OVERFLOW DRAIN LINE (TYP)

99 LF 15" PERFORATED HDPE @ 0.005

199 LF 15" PERFORATED HDPE @ 0.006

105 LF 15" PERFORATED HDPE @ 0.005

177 LF 30" RCP @ 0.005

168 LF 30" RCP @ 0.005

335 LF 30" RCP @ 0.005

192 LF 24" RCP @ 0.003

190 LF 24" RCP @ 0.003

72 LF 24" RCP @ 0.003

126 LF 15" RCP @ 0.003

128 LF 30" RCP @ 0.003

270 LF 30" RCP @ 0.003

148 LF 15" PERFORATED HDPE @ 0.005

45 LF 24" RCP @ 0.060

41 LF 30" RCP @ 0.005

35 LF 15" RCP @ 0.005

75 LF 24" RCP @ 0.003

75 LF 18" RCP @ 0.003

148 LF 24" RCP @ 0.003

70 LF 24" RCP @ 0.005

100'-24" HDPE @ 0.005 (O/F)

MH11-1 RIM 16.00 INV. 12.39

MH11-2 RIM 17.16 INV. 11.67

MH11-3 RIM 17.00 INV. 13.00

MH5-2 RIM 15.17 INV IN 10.72 INV IN 10.36 INV. OUT 10.26

MHU-7 RIM 14.29 INV. 7.72

SUM-4 RIM 17.28 INV. 9.27

MH15-2 RIM 17.06 INV. 11.64

MH15-1 RIM 16.42 INV. 12.17

MH15-3 RIM 16.20 INV. 11.81

MH8-6 RIM 16.70 INV. OUT 10.36

MH14-3 RIM 16.46 INV. 10.17

SMH-15 RIM 16.00 INV. 11.79

SMH-14 RIM 16.25 INV. 0.97

MH8-1 RIM TR 15 INV. 8.33

MH14-4 RIM 16.18 INV. 11.81

MH8-7 RIM 15.47 INV. 9.24

SMH-44 RIM 15.70 INV. 8.29

MH8-5 RIM 14.85 INV. OUT 10.21

SMH-17 RIM 15.17 INV. IN 10.78 INV. IN 10.28 INV. OUT 3.28

MH8-9 RIM 15.78 INV. 10.08

MH8-8 RIM 16.49 INV. 9.52

SMH-16 RIM 16.54 INV. IN 2.39 INV. IN 2.39 INV. OUT 2.39

MH8-2 RIM 16.74 INV. 9.63

MH9-1 RIM 15.82 INV. 2.00

MH9-2 RIM 15.00 INV. 2.00

MH8-4 GR 14.95 INV 4.45

SUM-1B RIM 16.87 SANITARY INV. 8.32 STORM INV. 9.85

SUM-1C RIM 16.46 SANITARY INV. 3.9 STORM INV. 4.85

MHC-15 RIM 13.64 INV. 6.74

MHC-4 RIM 12.61 INV. 6.56

MHC-16 RIM 13.99

MHC-17 RIM 12.59 INV. 5.55

MHU-8 RIM 12.57

SMH-34 RIM 12.58 INV.OUT 4.83

SMH-38 RIM 13.82 INV. 4.78

MH14-5 RIM 16.00 INV. 12.52

MHB-50 RIM 27.05 INV. −1.52

SMH-50 RIM 18.50 INV. 0.15

IB-1, OMG TC 15.70 INV. 11.12

IB-2, OMG TC 15.70 INV. 11.12

IB-12, OMG TC 16.19 INV. 11.61

IB-13, OMG TC 16.19 INV. 11.61

IB-14, OMG TC 16.19 INV. 11.61

IB-2, HG GR 14.22 INV. 10.55

I9-1, HG GR 12.80 INV. 9.13

I9-2, HG GR 14.22 INV. 10.55

I9-3, HG GR 14.30 INV. 10.63

I9-4, HG GR 13.60 INV. 9.93

I9-5, HG GR 14.90 INV. 11.23

I14-1, HG GR 14.80 INV. 11.13

I14-2, HG GR 15.43 INV. 11.76

I14-5, HG GR 16.15 INV. 13.29

I14-6, HG GR 15.80 INV. 13.29

IC-10, OMG TC 16.05 INV. 8.11

IC-15, OMG TC 16.05 INV. 8.11

IC-17, OMG TC 12.28 INV. 7.86

IC-18, OMG TC 12.45 INV. 7.86

IC-19, OMG TC 12.93 INV. 8.72

IC-20, OMG TC 13.01 INV. 8.72

IC-29, OMG TC 13.45 INV. 9.46

(M)C-30, OMG TC 13.47 INV. 10.54

(M)I11-2, HG GR 14.82 INV. 12.37

(M)B-5, OMG TC 14.97 INV. 11.37

(M)B-6, OMG TC 14.97 INV. 11.37

PTU-7

PTU-5

PTU-11

PTC-28

PTC-27

PTC-32

PTC-33

PTC-16

PTC-22

PTC-15

PTB-1

PTB-2

PTB-3

PTB-4

PTB-5

PTB-6

PTB-7

PTB-8

PTB-11

PTB-12

PTI14-2

PTI14-3

PTI14-6

PT9-1

PT9-2

PT9-3

PT9-4

PT9-6

PTI15-1

PTI11-2

EW-B INV. 7.51

OS-B GR 10.37 INV (ORIFICE) 7.00 INV OUT 2.50

INV IN −1.75

CONNECTION TO EXISTING CULVERT INV. −0.08

48" CMP OBSERVATION/ MAINTENANCE PORT GR 14.25 INV 1.50

24" PERF HDPE OVERFLOW PIPE INV 5.43

20' WIDE STONE INFILTRATION BED TWIN 15" PERF HDPE PIPES TOP OF BED 7.93 BOTTOM OF BED 1.50

10' – 15" PERF HDPE CONNECTOR PIPE 100' O.C. (TYPICAL)

24" PERF HDPE OVERFLOW PIPE INV 4.75

OVERFLOW PIPE (O/F) 227' –24" PERFORATED HDPE @ .003

800 LF TWIN 15" PERF HDPE SET LEVEL AT 2.00

48" CMP OBSERVATION/ MAINTENANCE PORT GR 13.80 INV 1.50

VEGETATED SWALE C 100' @ 0.030

VEGETATED SWALE C 100' @ 0.010

YARD DRAIN (TYP)

SHEET KEY MAP
SCALE: 1"=1000'

LEGEND

- Existing Contour
- Existing Building
- Existing Edge of Paving
- Existing Right of Way
- Existing Tree Line
- Existing Wetland Limit Line
- Existing Flood Plain Line
- Existing Lot Line
- Property Line
- Existing Sanitary Sewer
- Existing Storm Sewer
- Existing Electric Line
- Existing Utility Pole
- Existing Drainage Area Line
- Proposed Building
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- Proposed Sanitary Sewer Easement
- Proposed Inlet
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- Proposed Endwall
- (FF-30) Proposed Filter Fabric Fence
- (RCE) Proposed Rock Construction Entrance
- (SSF) Super Filter Fabric Fence
- (GP) Gravel Inlet Protection
- Rock Energy Dissipater
- Areas of BMP Installation & Completed Construction
- Limit of Disturbance
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- Walkway Pavement to be Removed
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3100-3190 PENROSE FERRY ROAD
PHILADELPHIA, PENNSYLVANIA

UTILITY PLAN

C304

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL DANILO R. SALAMEDA ENGINEER PE-045614

Scale:	1"=30'
Originated By:	DRS
Drawn By:	RPU
Checked By:	DRS
Project Mgr.:	DRS
Project No.:	20051505
Sheet No.:	OF
Issued:	

Appendix J

Sewer Monitoring and Inspection

Summary of Work
Packer Avenue Sewer Inspection
Former Defense Supply Center Philadelphia (DSCP)
Philadelphia, Pennsylvania

USACE Philadelphia District
Engineering and Construction Division
Geo-Environmental Section

October 2016

Contents

Summary of Work..... 3

Figures

Figure 1. Location Map
Figure 2. Entry Team Personal Protective Equipment
Figure 3. Fluorescent liquid
Figure 4. Utility Plan, Siena Place
Figure 5. Stained wall
Figure 6. Stained floor
Figure 7. Buried manhole

Appendices

Appendix A 1997 Inspection Report
Appendix B 2007 Inspection Report
Appendix C Groundwater and product elevations near the Packer Avenue Sewer

Summary of Work

On Friday, October 14, 2016, staff from the US Army Corps of Engineers (USACE) Philadelphia District and Arcadis, Inc. conducted an inspection of the Packer Avenue trunk sewer near the Philadelphia Housing Authority office building and Siena Place Homes in South Philadelphia, shown in Figure 1. The purpose of the inspection was to confirm the presence or absence of petroleum hydrocarbon fluids in the sewer tunnel, following many years of groundwater remediation in the vicinity of the sewer. A 1997 investigation of the same sewer segment, provided in Appendix A, identified "a steady stream of floating globs of pure petroleum product" in the sewer. The 1997 inspection report notes that, "Significant infiltration of petroleum hydrocarbon fluids was found in this sewer tunnel. At least eight discrete seeps were identified." A 2007 inspection of Manhole C, provided in Appendix B, also identified "globs" of light non-aqueous phase liquids (LNAPL) floating on the water inside the sewer.

In the years since these sewer surveys were conducted, a significant volume of LNAPL adjacent to the sewer has been removed from the groundwater and the water table. This, combined with a rise of the local water table by several feet, was expected to decrease the likelihood of LNAPL infiltration into the sewer at the present time.

The 2016 sewer entry was performed by [redacted] of USACE and [redacted] of Arcadis. Also participating in a supporting capacity were [redacted] and [redacted] of USACE and Chris Ortolano of Arcadis. A crew led by Joseph McAninley of the Philadelphia Water Department (PWD) was also on site to provide backup capability.

On the morning of October 14, 2016 a visual inspection of the manholes was conducted. No petroleum product could be seen by looking into the manholes. Prior to the sewer entry, a Photoionization Detector (PID) and a multi-gas LEL/O_2/H_2S/CO meter were lowered into each of the manholes to various depths and no significant detections were observed. Oxygen concentrations were within the normal range. Ambient air monitoring continued for the duration of the inspection. All PID measurements were less than or equal to 0.8 ppm as isobutylene; O_2 measurements were equal to 20.9%; and all other measurements were equal to zero. This contrasts markedly from the 1997 inspection, when PID readings of 1500 to 1600 ppm and LEL measurements of 18% to 20% were recorded.

On the morning of October 14, [redacted] of Evergreen Resources Management Operations confirmed by text message that the Philadelphia Energy Systems (PES) biofilter system was operational. The biofilter system, located at the PES refinery, produces a vacuum in the Packer Avenue sewer tunnel in order to prevent buildup of potentially toxic and/or combustible vapors. Two of the three available blowers were operating during the inspection. Previous measurements demonstrated that with two blowers running, the biofilter system is capable of producing a flow volume of 7,128 CFM.

Each member of the entry team was equipped with yellow waterproof Tychem coveralls, knee-high rubber boots, a confined space retrieval harness, and an emergency self-contained breathing apparatus (ESCBA), as shown in Figure 2. A wired communication system was used to maintain verbal contact between the entrants and attendants at ground surface. A rescue tripod was

erected on each end of the sewer segment being inspected, offering the entrants two points of egress from the sewer at all times. One member of the entry team [redacted] was positioned at the bottom of the entry manhole to maintain visual contact with the entry team and the attendants at ground surface simultaneously.

The sewer entry began just after 10:00am. The entry team entered Manhole G and walked west to Manhole C, then returned east and exited the sewer at Manhole D-1. After resting, the entry team re-entered the sewer at Manhole A, walked east to Manhole C, then doubled back and exited the sewer at Manhole A. The total linear distance inspected was approximately 1500 feet.

The entry team focused their attention on the north wall of the sewer, where non aqueous phase liquid (NAPL) infiltration was observed in 1997. The groundwater direction in the area of interest flows from northwest to the south and southeast, therefore any infiltration would be expected on the north wall of the sewer. No groundwater elevation data were recorded on the date of the inspection, however groundwater levels are regularly monitored in the vicinity of the sewer. In the third and fourth quarters of 2016, groundwater and LNAPL elevations in close proximity to the sewer were higher than the bottom of the sewer. Table 1 below shows the depth of product relative to the sewer bottom. These data are also presented in the DSCP quarterly reports, which are excerpted in Appendix C to this report.

Table 1. Product depth relative to the Packer Avenue Sewer

Sewer manhole	Nearby well	Product depth above sewer bottom (ft)	
		August 2016	November 2016
MH-A	MWS-1	2.17	1.97
MH-B	RW-I	5.47	5.24
MH-C	PH-RW-H	5.63	4.93
MH-D2	PH-PH-14	2.27	1.63
MH-D2	PH-RW-G	3.75	3.38
MH-E	PH-RW-M	3.92	3.83
MH-G	MWS-3	1.91	1.8
MH-G	MWS-4	2.5	2.8

The entry team carried an ultraviolet lamp to assist in the visual detection of NAPL. They trained the UV light on the walls, cracks and joints of the sewer but did not identify any areas of NAPL infiltration. No major observations were reported. A 12-inch sewer pipe tributary to the Packer Avenue sewer carried a liquid that fluoresced under the UV light as shown in Figure 3. This pipe is believed to originate in the Siena Place residential development, as shown on the construction drawing of Siena Place homes (Figure 4). This fluid did not exhibit hydrophobic properties or hydrocarbon odor and was therefore dismissed as an observation of interest.

The entry team observed some rust-colored stains on the wall and floor of the sewer located between Manholes E and F, as shown in Figures 5 and 6. The stains did not fluoresce and did not produce a sheen of any sort. The entrants placed the PID in close proximity to the stain and no response from the instrument was observed.

Lastly, the entry team confirmed the existence of two buried manholes, D-2 and F, as labeled on Figure 1. These manholes were shown on site drawings, however they could not be located from the ground surface, even when surveyed by PWD. It is unknown how much soil lies on top of the manholes, but they do exist, as shown in Figure 7.

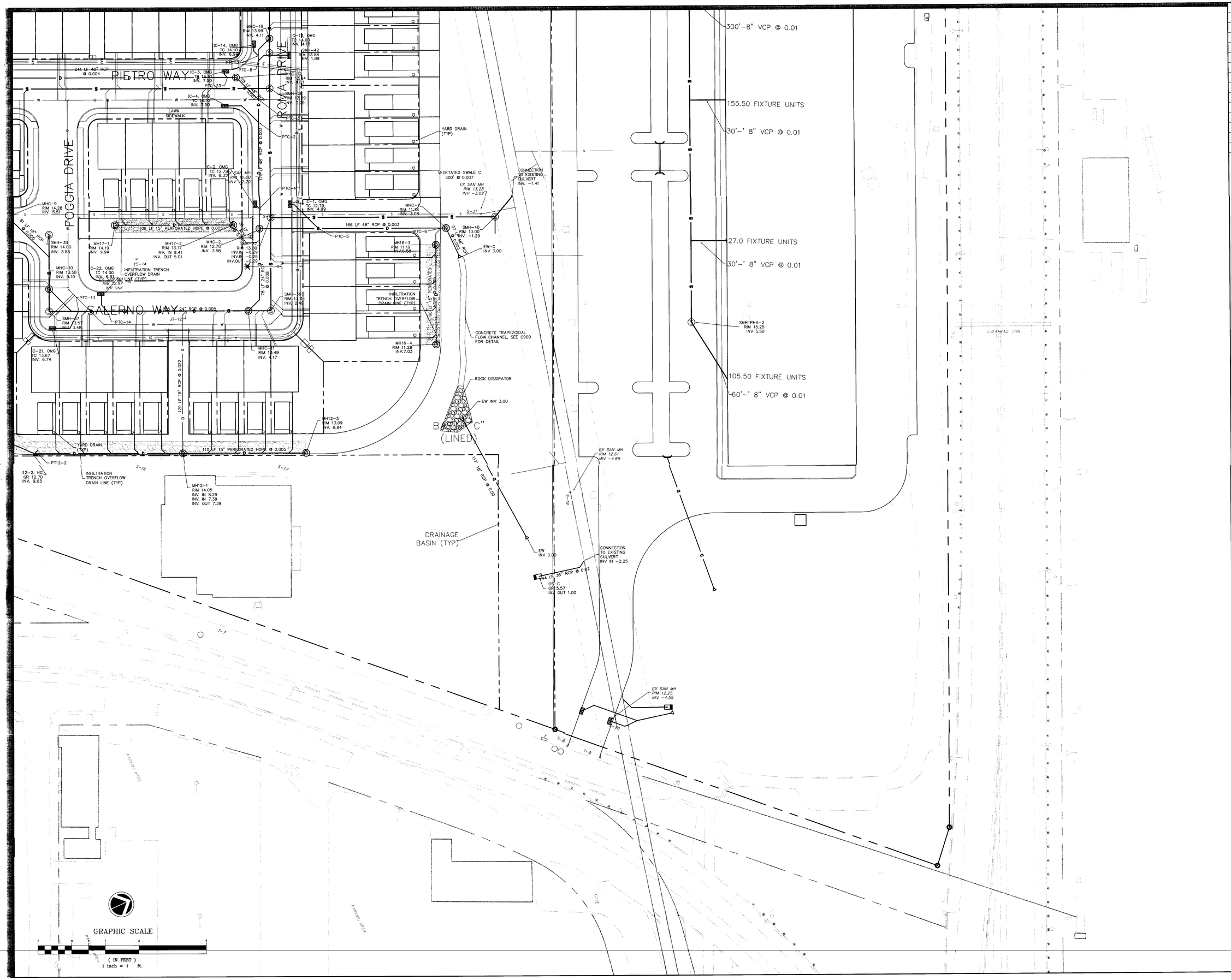
In conclusion, no vapors or LNAPL were detected during the inspection of the Packer Avenue sewer on October 14, 2016. The PES refinery's biofilter system was operational on the day of the inspection and groundwater elevations were higher than the bottom of the sewer. No other significant observations were noted during the course of this inspection.



Figure 1
Packer Avenue Sewer Inspection
Former Defense Supply Center Philadelphia (DSCP)


2016/10/14


2016/10/14



MATCH TO C303

DATE:	REVISION:
10/22/07	STREETS DEPT REVIEW COMMENTS
11/14/07	PER PROPERTY LINE ADJUSTMENT
11/26/07	PER PWD REVIEW
12/10/07	PER PWD REVIEW
12/17/07	PER PRIVATE COST PLAN COORDINATION
12/21/07	PER PRIVATE COST PLAN COORDINATION
12/28/07	PER PROPERTY LINE ADJUSTMENT
01/08/08	PER PRIVATE COST PLAN COORDINATION

LEGEND

- Existing Contour
- Existing Building
- Existing Edge of Paving
- Existing Right of Way
- Existing Tree Line
- Existing Wetland Limit Line
- Existing Flood Plain Line
- Existing Lot Line
- Property Line
- a — Existing Sanitary Sewer
- s — Existing Storm Sewer
- Existing Electric Line
- Existing Utility Pole
- Existing Drainage Area Line
- Proposed Building
- Proposed Curb Line
- Proposed Edge of Paving
- Proposed Right of Way
- Proposed Right of Way
- S — Proposed Sanitary Sewer
- D — Proposed Storm Sewer
- W — Proposed Water
- Proposed Drainage Easement
- Proposed Sanitary Sewer Easement
- Proposed Inlet
- Proposed Drainage/Sanitary Manhole
- Proposed Sidewalk
- Proposed Drainage Area Line
- Proposed Concrete Curb
- Proposed Endwall
- (FF-30) — Proposed Filter Fabric Fence
- RCE — Proposed Rock Construction Entrance
- (SSF) — Super Filter Fabric Fence
- GIP — Gravel Inlet Protection
- Rock Energy Dissipater
- Limit of Disturbance
- Orange Safety Fence
- Roadway Pavement to be Removed
- Walkway Pavement to be Removed
- Utility Line to be Abandoned
- Pole to be Removed
- Light Pole
- 112.00 — Proposed Top of Curb Elevation
- TCP — Existing Elevations per City Plan
- Parking Block
- Traffic Flow Arrow (Not to be Painted)
- Driveway Apron



SHEET KEY MAP
SCALE: 1"=1000'

ADVANCED GeoServices
Engineering for the Environment. Planning for People.™
1055 ANDREW DRIVE, SUITE A
WEST CHESTER, PENNSYLVANIA 19380

PENROSE PARK ASSOCIATES, L.P.
1750 WALTON ROAD
BLUE BELL, PA 19422

SIENA PLACE
3100-3190 PENROSE FERRY ROAD
PHILADELPHIA, PENNSYLVANIA

UTILITY PLAN

C305

COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — DANILO R. SALAMEDA — ENGINEER PE-040687-E

Scale:	1"=30'
Originated By:	DRS
Drawn By:	RPU
Checked By:	DRS
Project Mgr.:	DRS
Project No.:	20051505
Sheet No.:	OF
Issued:	

L:\kd050027\dwg\C300.dwg, C305






2016/10/14

Appendix A

DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGION
LEE PARK, SUITE 6010
555 NORTH LANE
CONSHOHOCKEN, PA 19428

I N T E R O F F I C E M E M O R A N D U M

Date: 12-Mar-1997 08:26am EST
From: [redacted]
Dept: Water Quality Management
Tel No: [redacted]

Subject: field notes - March 11

To: file

WQ - IW/correspondence
South Philadelphia groundwater
odor problems

From: [redacted] WQS [redacted]

On Tuesday, March 11, 1997, [redacted] and I participated in and observed field work carried out by the Philadelphia Water Department/Industrial Waste Unit in the area of the Passyunk Homes development and the Packer Avenue trunk sewer. Two PWD staff persons walked the sewer from the manhole at Penrose Ferry Road (Manhole A-8) down to the manhole at Pollock Terrace west of 24th Street (Manhole A-1). Significant infiltration of petroleum hydrocarbon fluids was found in this sewer tunnel. At least eight discreet seeps were identified, all of them between Manhole A-5 and Manhole A-7, and all of them from the north side of the sewer, at the floor.

PWD staff participating were [redacted] The sewer entry was performed by Mr. [redacted]

This work follows up observations made on March 10 when significant concentrations of organic vapors were documented in the sewer between 23rd Street and 26th Street.

On the morning of March 11, following up the previous day's work, a visual inspection of the manholes was conducted. A steady stream of floating globs of pure petroleum product could be readily seen by looking down into certain manholes. The manholes where product could be readily seen included Manhole A-3 (corner of Packer and 24th), Manhole A-5 (in the grass south of Packer and west of 23rd), and Manhole A-6 (in the street near Packer and 23rd). Manholes where floating globs of product could NOT be seen included Manhole A-7 (Hemberger Terrace at Packer) and Manhole A-8 (in the grass near Penrose Ferry Ave. and Packer). Vapors were observed to be present at all these locations; the strength varying with location and time.

The sewer entry took place over several hours between 1:30 p.m. and 5:00 p.m. The entry team went into Manhole A-7, and walked

east to Manhole A-8, then returned and continued to the west where they exited the sewer at Manhole A-5. After resting, the team re-entered the sewer at Manhole A-5 and walked west to Manhole A-1, where the sewer walk was terminated. The total linear distance inspected was approximately 1500 feet.

The sewer is a concrete box eight feet high by ten feet wide. The floor is sloped towards the center in a shallow "V". During normal flow conditions, the flow does not completely cover the sloped floor; there is a narrow area of dry floor along the wall at each side (see Figure 2).

The sewer entry team carried an ultraviolet lamp to assist in the visual detection of hydrocarbons. Several areas of hydrocarbon infiltration were observed. The distance from each area of infiltration to the nearest manhole was measured using a fifty-foot measuring tape. All of the infiltration points were in the floor of the sewer, close to the north wall. No areas of infiltration were found along the southern side. The infiltration areas are indicated on the attached Figure 1. (See table below). A sample of pure product (approximately 60 to 80 ml product) was collected from the location noted on the figure.

Vapor monitoring for ionizable vapors ("PID") and combustible gasses ("LEL") was carried out throughout the work. Such vapors were present at all times, with concentrations varying with the location and with time. The highest PID readings recorded were in the range 1500 to 1600 ppm (as isobutylene). The highest LEL readings were 18% to 20%. Strong odors of petroleum were present throughout the work. Often, these vapors were exhausting out of the open manholes and spreading throughout the neighborhood, where many people took notice of them.

Areas of product infiltration:
(Moving from east to west)

20 feet west of MH A-7
48 feet west of MH A-7
76 feet west of MH A-7
103 feet west of MH A-7
130 feet west of MH A-7
15 feet west of MH A-6
67 feet west of MH A-6 (sample location)
25 feet east of MH A-5

FIG. 1

PACKER SEWER WALK - 3.11.97

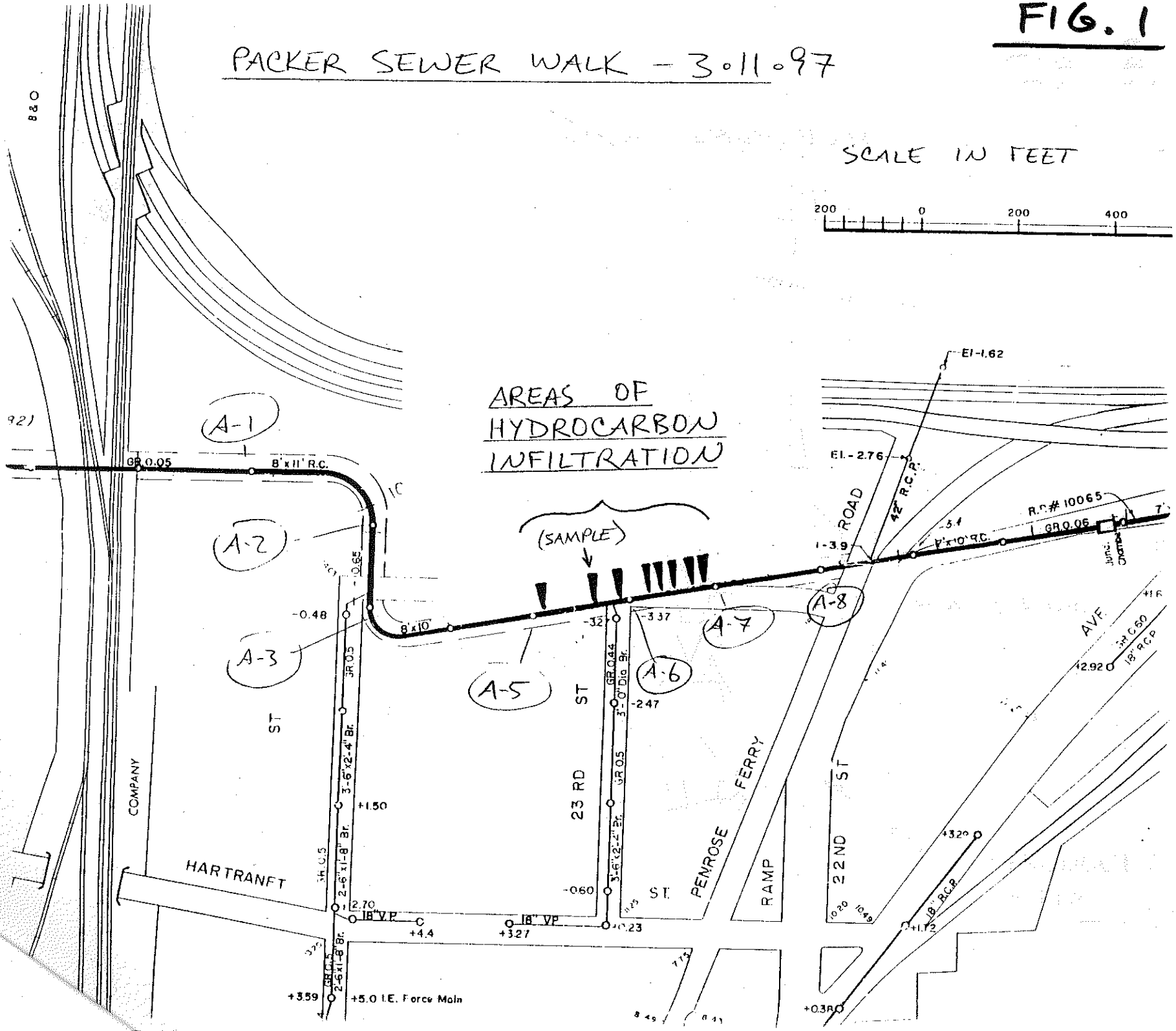
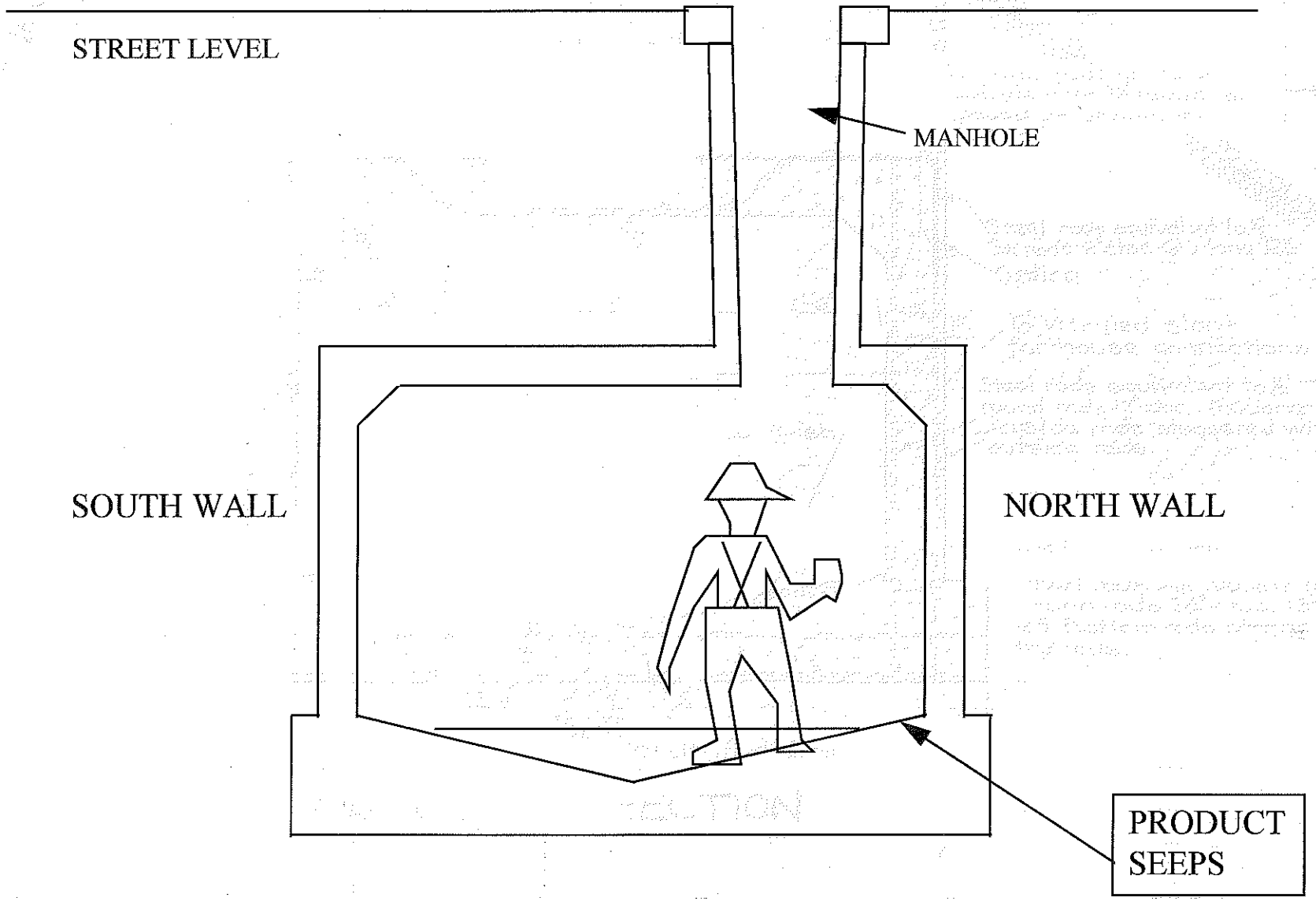
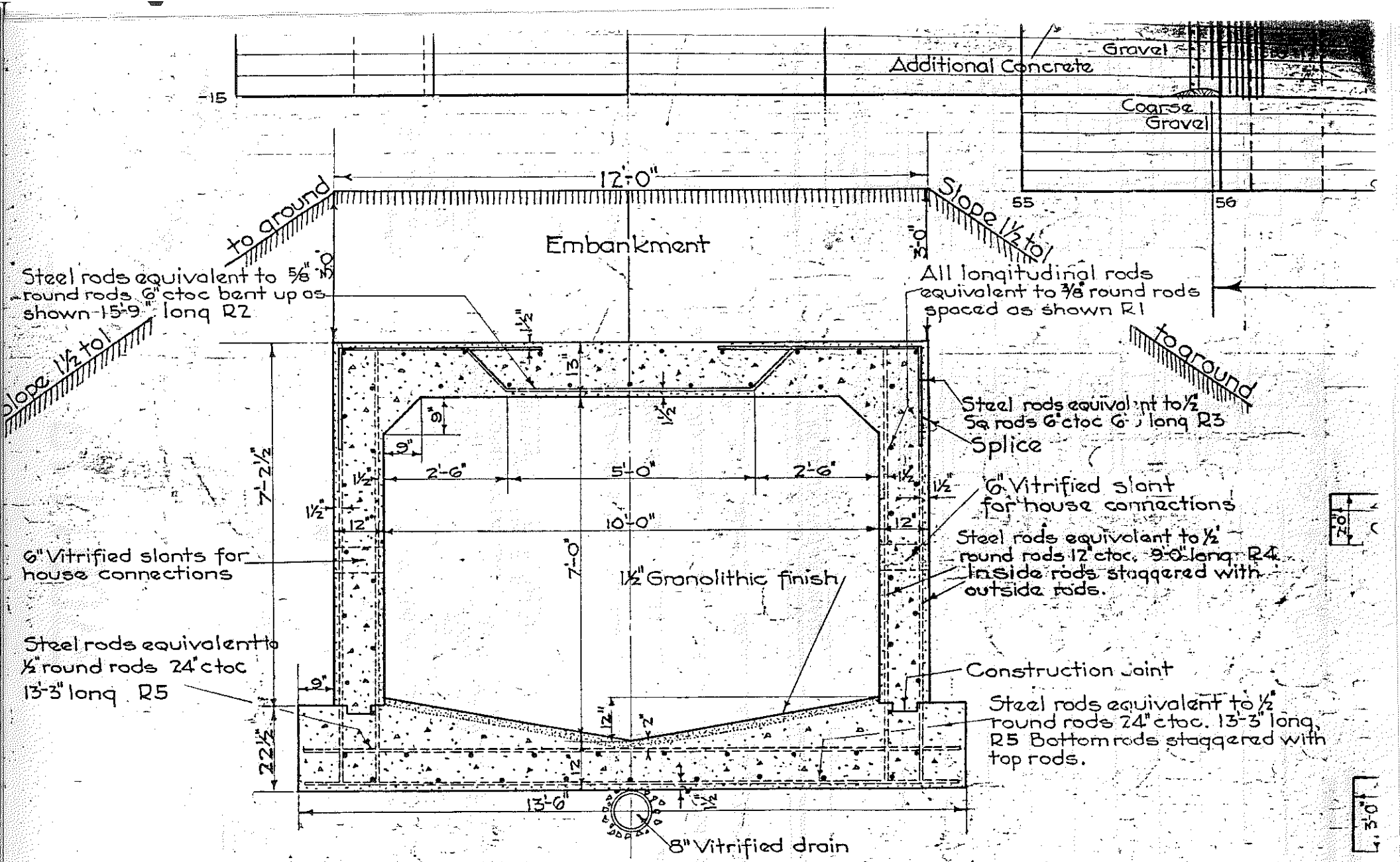


FIG. 2

CROSS SECTION OF PACKER AVE. SEWER LOOKING WEST





7'-0" x 10'-0" SECTION

60013.1 6/95

RECEIVED
NORTHEAST REGION
MAR 28 1997

97001119

LAB Use Only

Lab Number

Date Received 3/13/97

Matrix Code 4

ESTABLISHMENT	CASE	FACILITY	COLL NUMBER
PACKER SEWER		PRODUCT SEEP	0120

COUNTY	MUNICIPALITY	GRANT CODE	TYPE TR	STD ANALYSIS
PHILA.	PHILA.	106 [redacted]		

CARD (3)	ID CODE (ALL CARDS) 4-16	LATITUDE 4-10	LONGITUDE 11-18	DATE 19-24	TIME 25-8	KIND 29
1/2	Cnty Mun T Est Case Fac.		0	M D Y: 03 11 97	Hr Min: 14 30	

USGS -Q 30-34	BUREAU 35-37 AMIS	SAMPLE NUMBER 38-43	STREAM NAME 44-57	RELATIVE POINT 58
	710	0120774		

FULL DESCRIPTION WHERE SAMPLE TAKEN:

CUSTODY LOG

How Shipped USC Date 3-18-97

Legal Seal No. 304658

Received by: [redacted] 3/13/97

Legal Seal Co

COMPARE TO: (3 samples)

	COLL. #	LAB #
(1)	0120741	97000316
(2)	0120751	97000357
(3)	0120761	97000364

QUALITATIVE REPORT

AS IS → 15 ml ISO

REQUESTED LAB ANALYSES

UV/IR and VOA ON PRODUCT

DO NOT WRITE BELOW THIS LINE

THE UV/IR SPECTRA EXHIBIT CHARACTERISTICS INDICATIVE OF GASOLINE. THE SPECTRA OF SAMPLE # 0120774 CLOSELY RESEMBLE THOSE OF SAMPLE #0120741 AND SAMPLE # 0120751, BUT NOT THOSE OF #0120761.

QUANTITATIVE RESULTS

ANALYSIS:	UNITS:	ANALYSIS CODE	RESULTS (SHOW DECIMAL POINTS ON LINES)

CHLORINE PRESENT IN SAMPLE

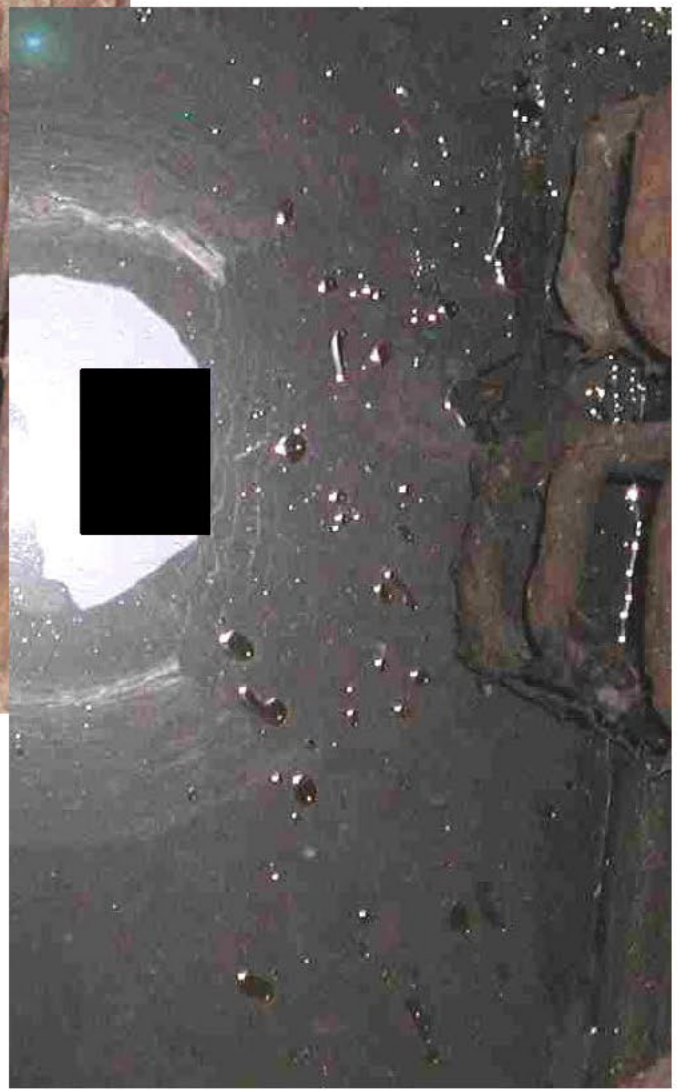
YES NO

ANALY[redacted] SIGNATURE

DATE 3-24-97

Appendix B





Philadelphia combined sewer manhole at 24th and Packer. Flow is to the north (from bottom of image towards top of image). Globules of yellow/brown NAPL are visible on the water surface. Water surface is approximately 17 feet below the street elevation.

Photos by [redacted] PADEP 3/14/2007

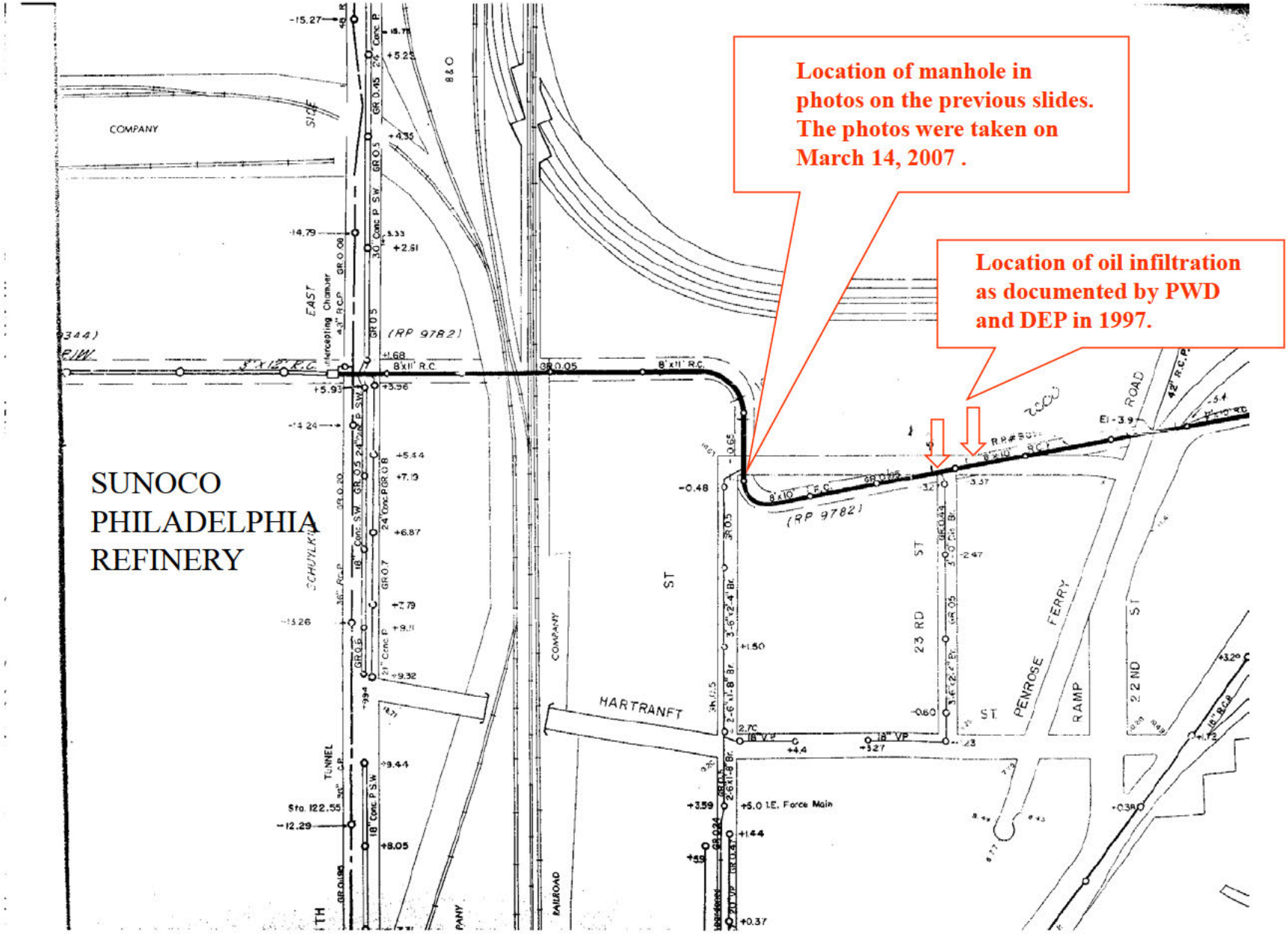
Contact: [redacted]





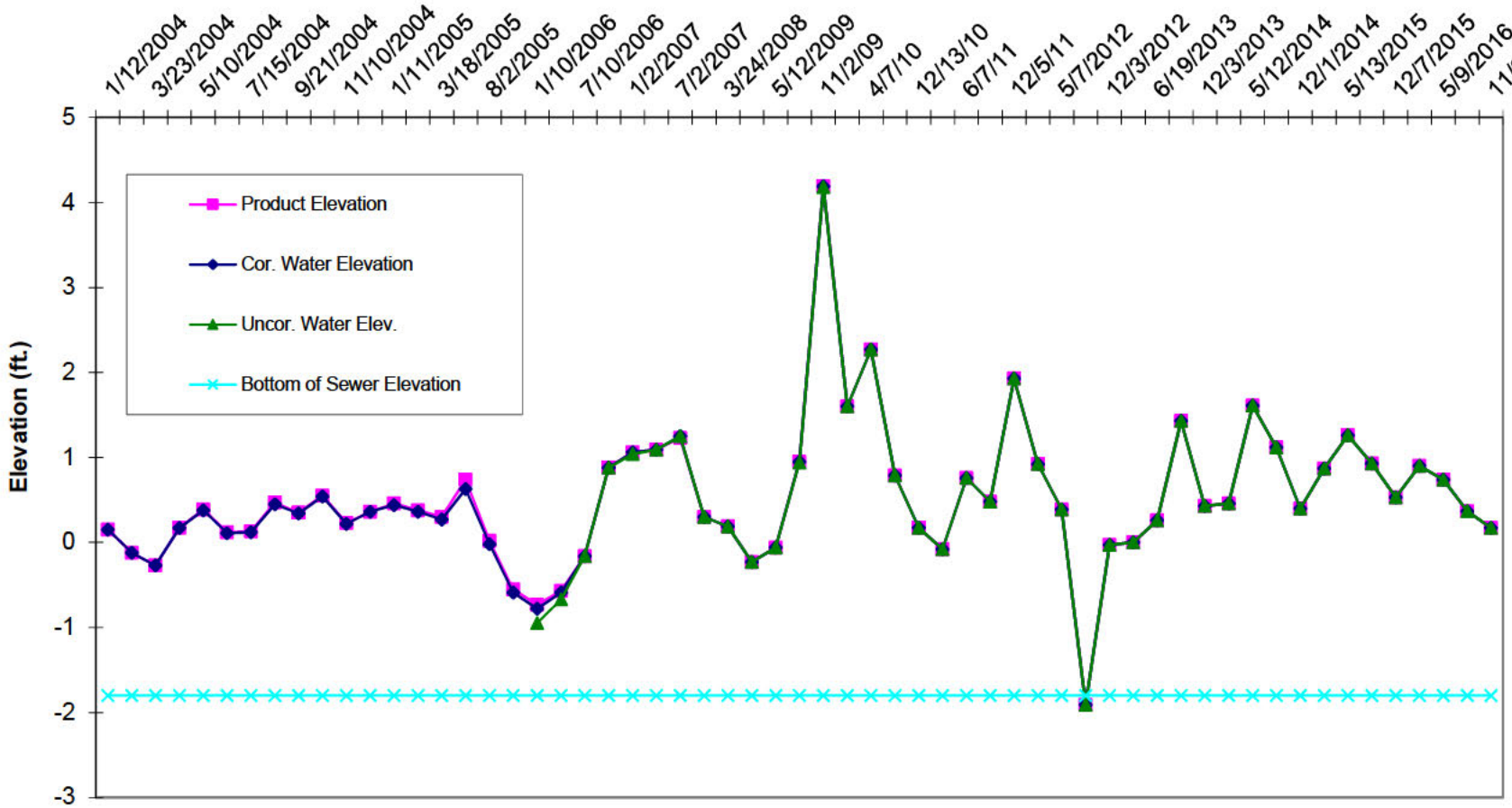
Philadelphia combined sewer manhole at 24th and Packer. A large mirror is being used to reflect sunlight and illuminate the water surface. Flow is to the north (from bottom of image towards top of image). Globules of yellow/brown NAPL are visible on the water surface. Water surface is approximately 17 feet below the street elevation.

[redacted]


Location of manhole in photos on the previous slides. The photos were taken on March 14, 2007 .
Location of oil infiltration as documented by PWD and DEP in 1997.
SUNOCO PHILADELPHIA REFINERY
(RP 9782)
HARTRANFT
23 RD ST
PENROSE FERRY RAMP
22 ND ST
8 & O
COMPANY
EAST
TUNNEL
RAILROAD
Sta. 122.55
+5.0 I.E. Force Main

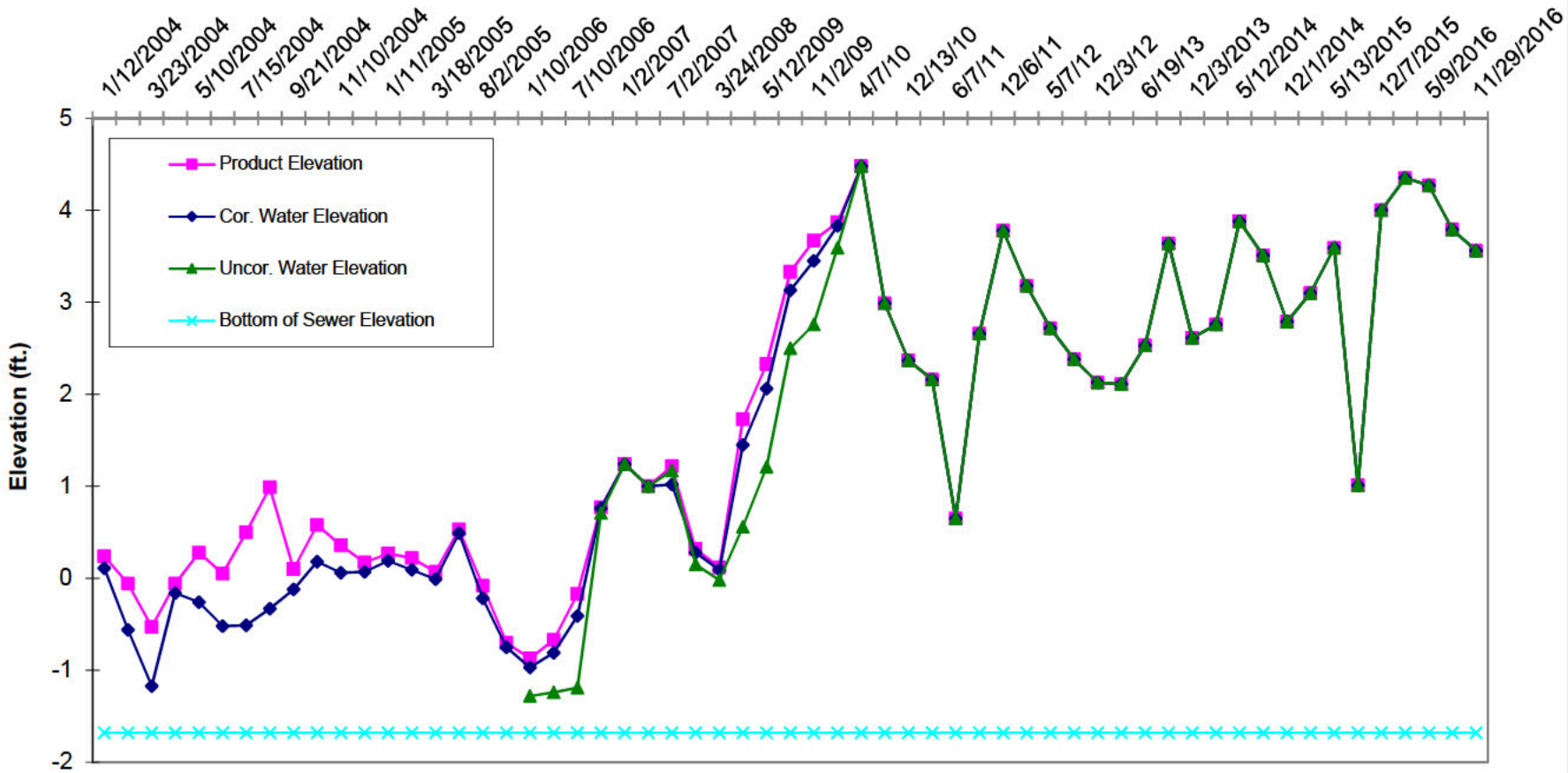
Appendix C

Product Elevation in MWS-1 Compared to the Bottom of the Packer Avenue Sewer at Manhole A



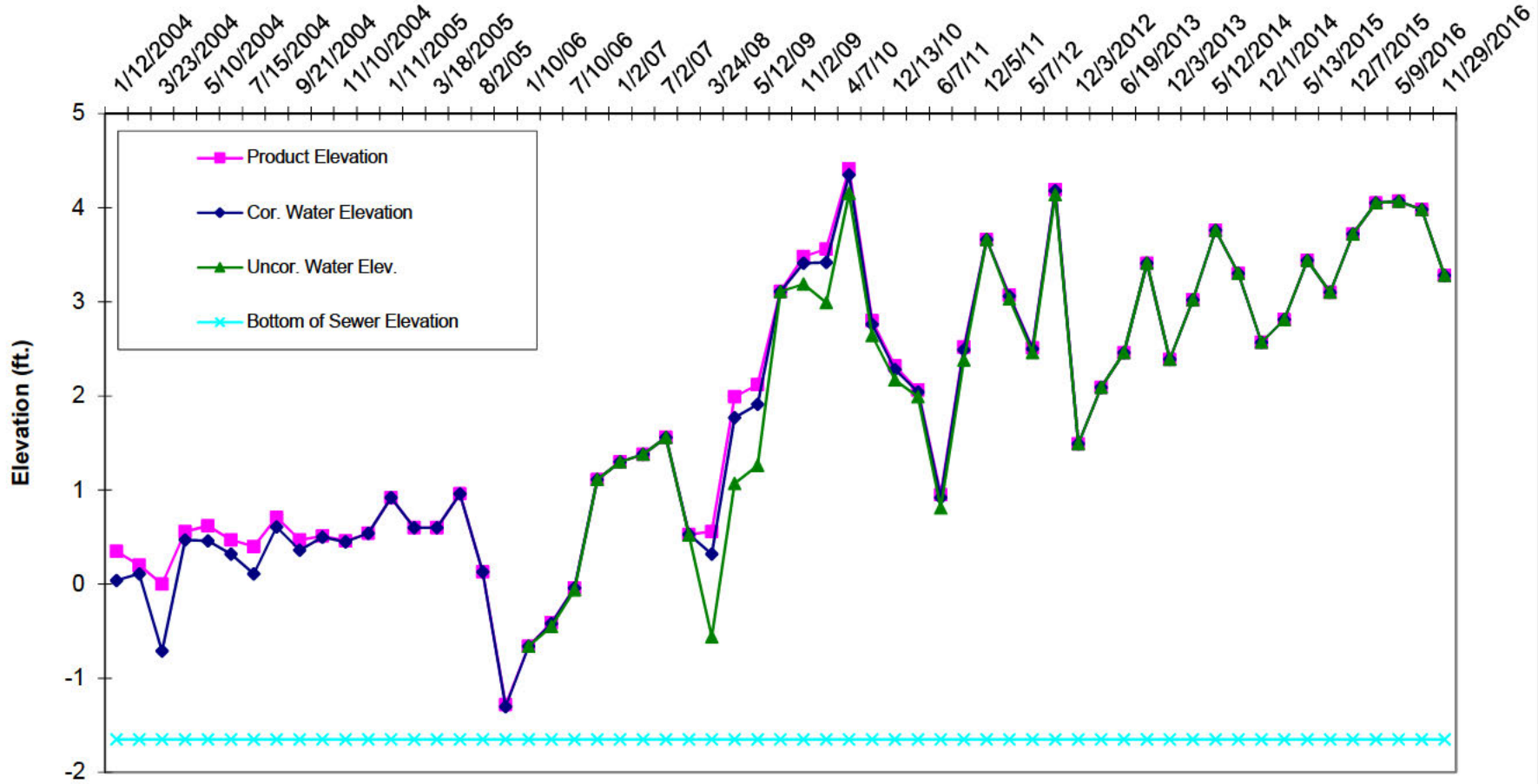
*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Product Elevation in RW-I Compared to the Bottom of the Packer Avenue Sewer at Manhole B



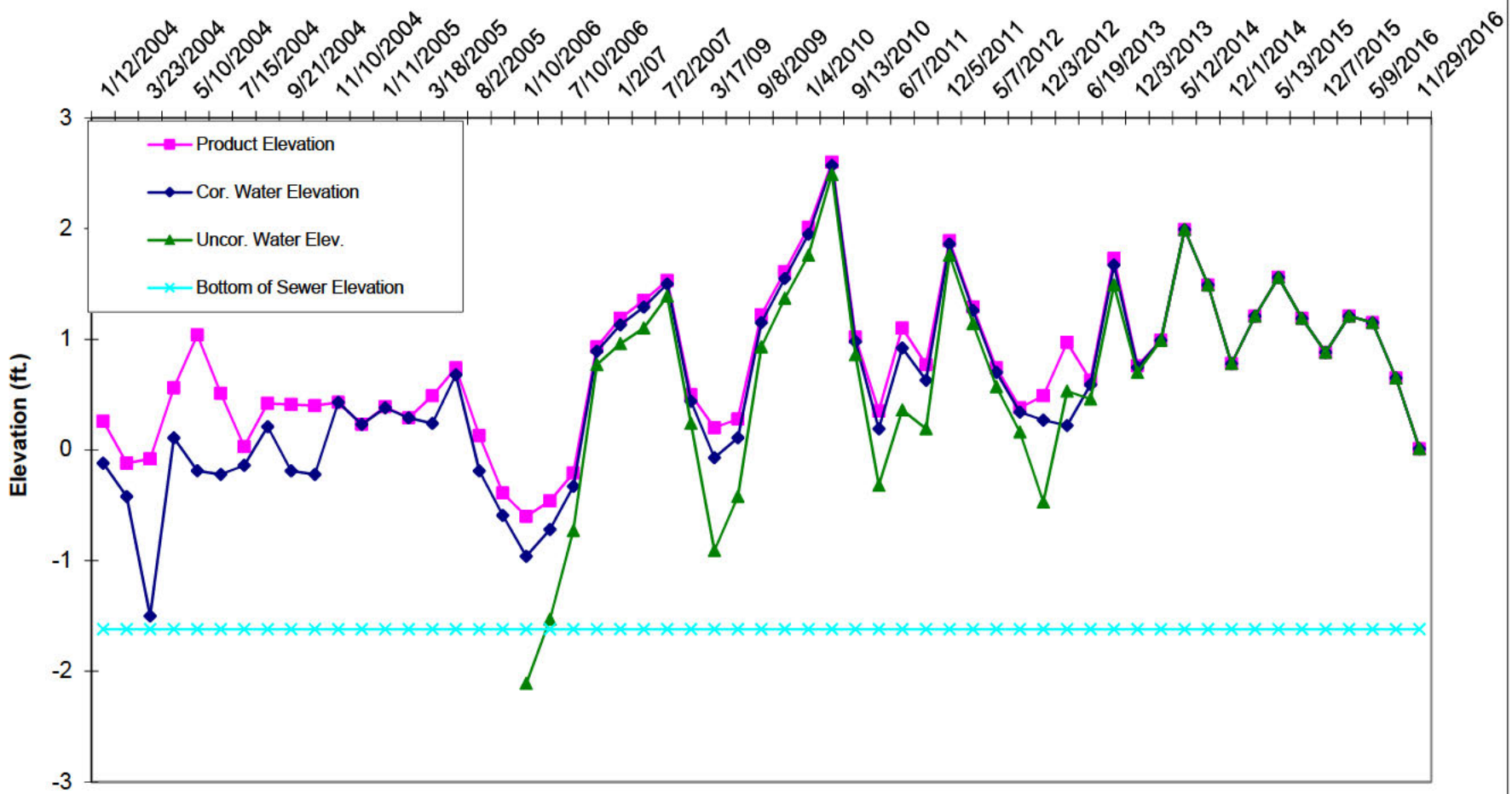
*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Product Elevation in RW-H Compared to the Bottom of the Packer Avenue Sewer at Manhole C



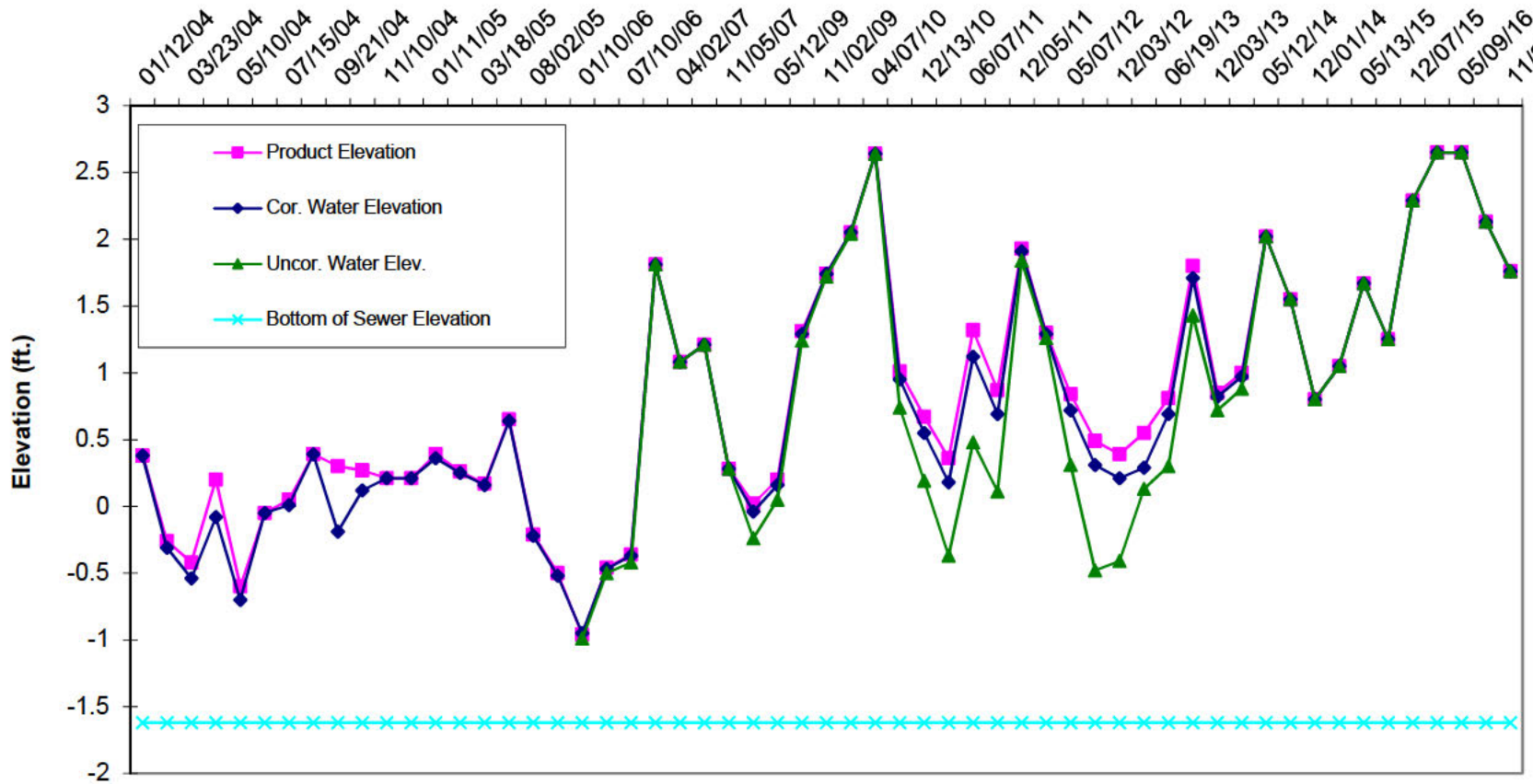
*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Product Elevation in PH-14 Compared to the Bottom of the Packer Avenue Sewer at Manhole D



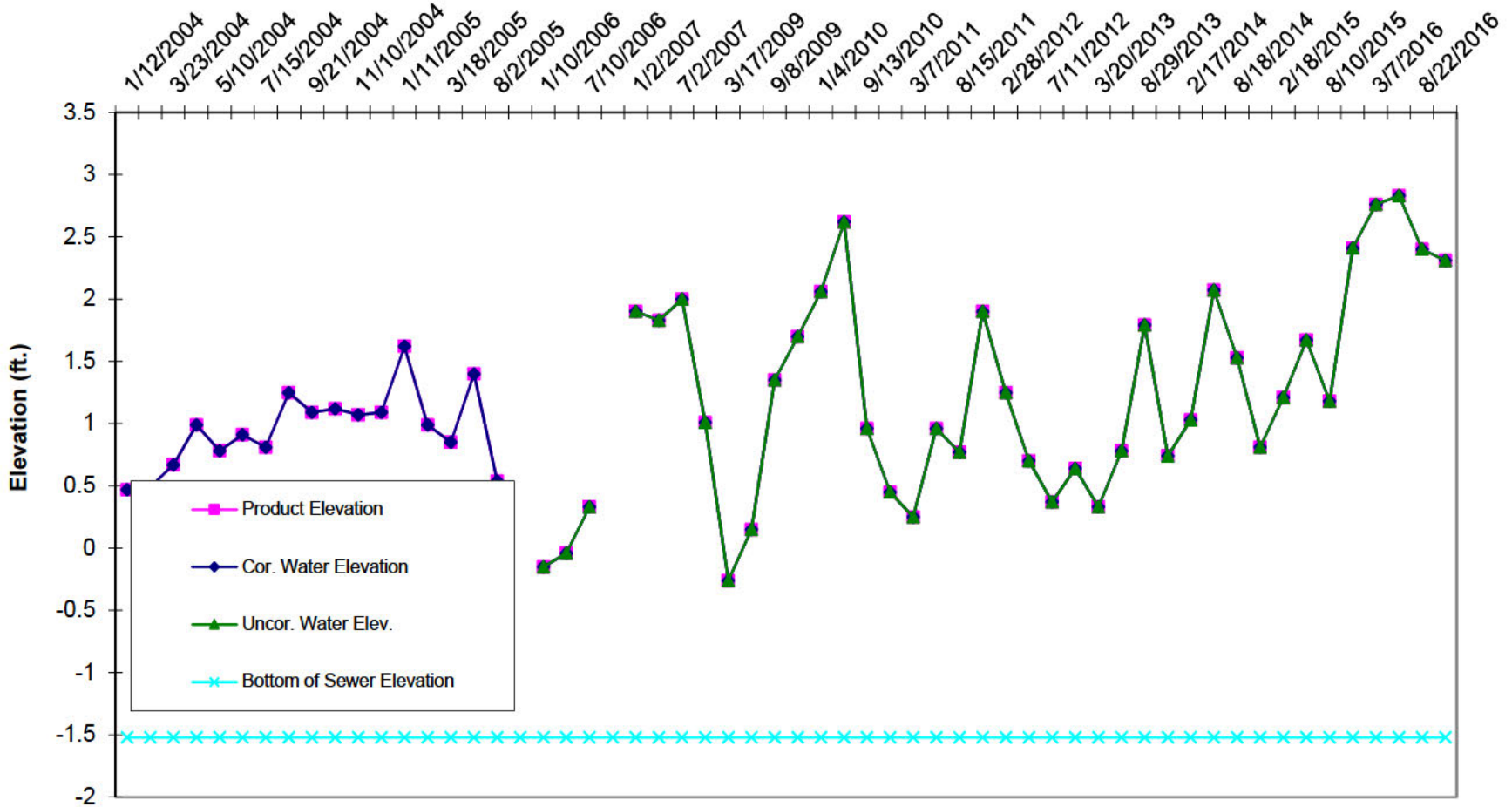
*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Product Elevation in RW-G Compared to the Bottom of the Packer Avenue Sewer at Manhole D



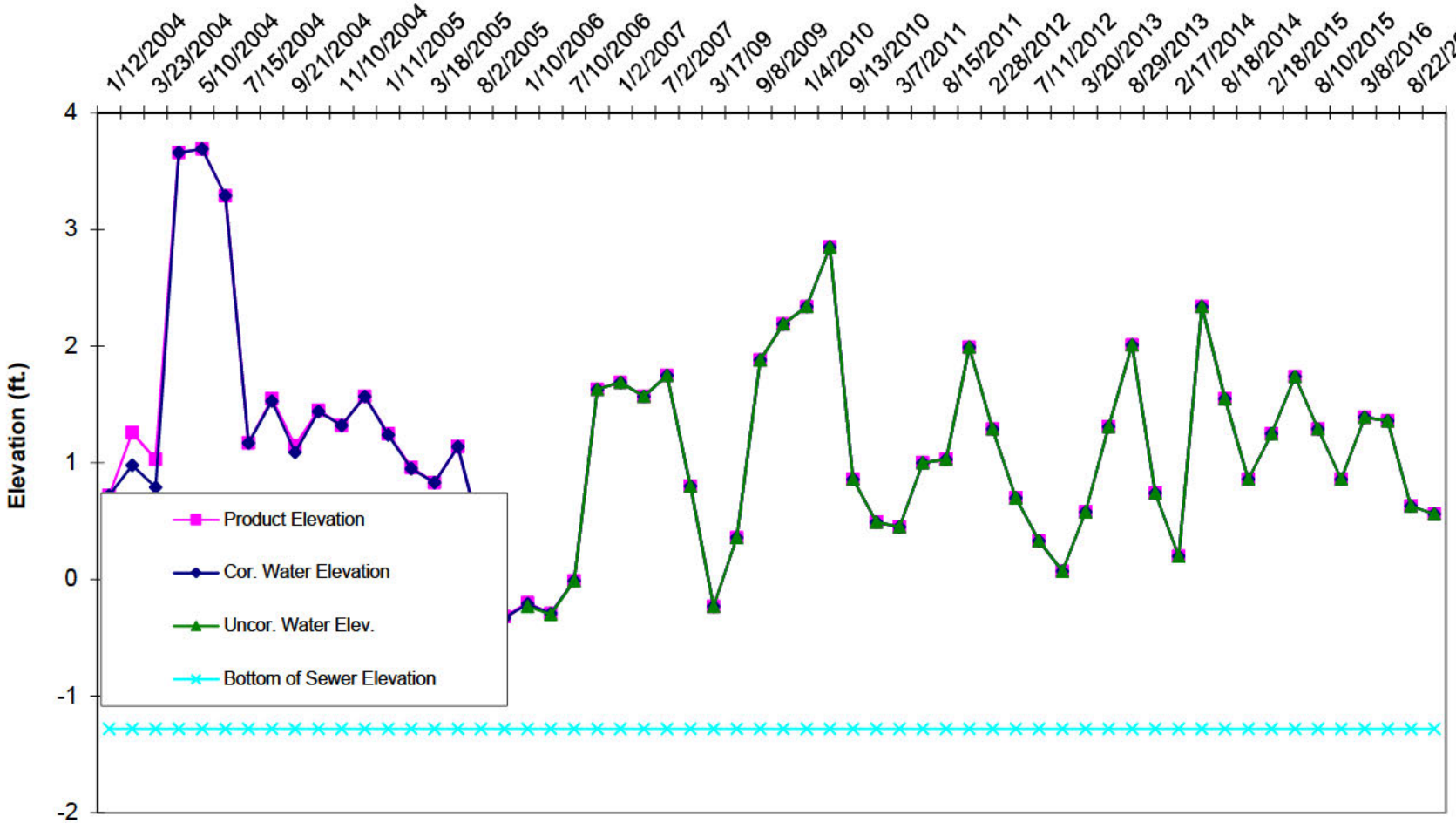
*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Product Elevation in RW-M Compared to the Bottom of the Packer Avenue Sewer at Manhole E



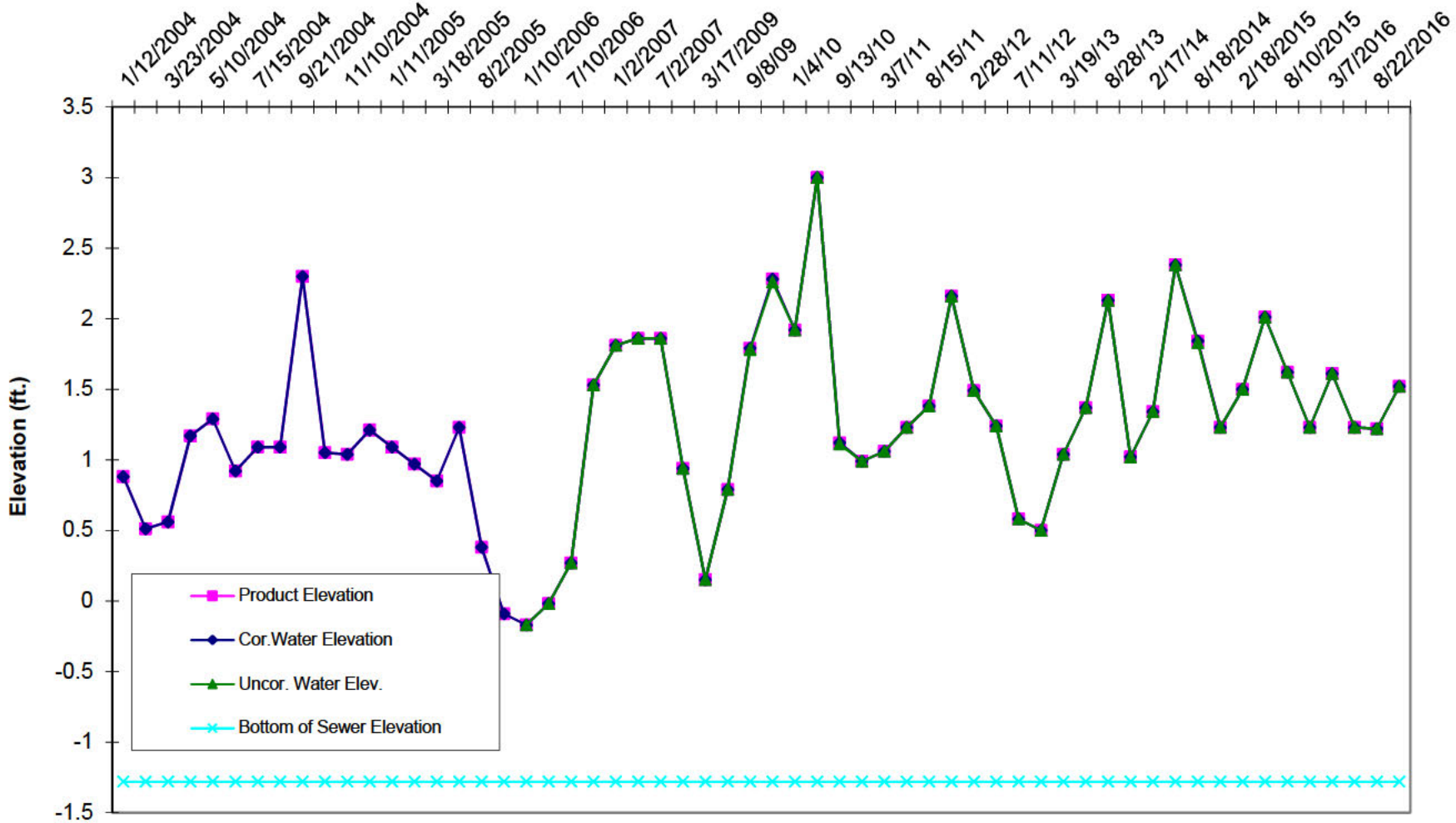
*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Product Elevation in MWS-3 Compared to the Bottom of the Packer Avenue Sewer at Manhole G



*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Product Elevation in MWS-4 Compared to the Bottom of the Packer Avenue Sewer at Manhole G



*GW El. corrected for presence of LNAPL using calculation outlined in report text.

Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2016

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
MWS-1	1/12/2004	0.15	0.15		-1.8
MWS-1	2/24/2004	-0.12	-0.12		-1.8
MWS-1	3/23/2004	-0.27	-0.27		-1.8
MWS-1	4/22/2004	0.17	0.17		-1.8
MWS-1	5/10/2004	0.39	0.38		-1.8
MWS-1	6/8/2004	0.12	0.11		-1.8
MWS-1	7/15/2004	0.13	0.12		-1.8
MWS-1	8/24/2004	0.47	0.45		-1.8
MWS-1	9/21/2004	0.35	0.34		-1.8
MWS-1	10/4/2004	0.55	0.54		-1.8
MWS-1	11/10/2004	0.23	0.22		-1.8
MWS-1	12/15/2004	0.36	0.36		-1.8
MWS-1	1/11/2005	0.46	0.44		-1.8
MWS-1	2/28/2005	0.38	0.36		-1.8
MWS-1	3/18/2005	0.3	0.27		-1.8
MWS-1	5/18/2005	0.74	0.63		-1.8
MWS-1	8/2/2005	0.02	-0.02		-1.8
MWS-1	10/24/2005	-0.55	-0.59		-1.8
MWS-1	1/10/2006	-0.73	-0.78	-0.95	-1.8
MWS-1	5/8/2006	-0.57	-0.59	-0.67	-1.8
MWS-1	7/10/2006	-0.16	-0.16	-0.16	-1.8
MWS-1	11/6/2006	0.88	0.88	0.88	-1.8
MWS-1	1/2/2007	1.06	1.06	1.04	-1.8
MWS-1	4/2/2007	1.09	1.09	1.09	-1.8
MWS-1	7/2/2007	1.23	1.25	1.25	-1.8
MWS-1	11/5/2007	0.3	0.3	0.3	-1.8
MWS-1	3/24/2008	0.19	0.19	0.19	-1.8
MWS-1	3/17/2009	-0.23	-0.23	-0.23	-1.8
MWS-1	5/12/2009	-0.06	-0.06	-0.06	-1.8
MWS-1	9/8/09	0.95	0.95	0.94	-1.8
MWS-1	11/2/09	4.19	4.19	4.18	-1.8
MWS-1	1/4/10	1.6	1.6	1.6	-1.8
MWS-1	4/7/10	2.27	2.27	2.27	-1.8
MWS-1	9/13/10	0.79	0.79	0.79	-1.8
MWS-1	12/13/10	0.17	0.17	0.17	-1.8
MWS-1	3/7/11	-0.08	-0.08	-0.08	-1.8
MWS-1	6/7/11	0.76	0.76	0.76	-1.8
MWS-1	8/15/11	0.48	0.48	0.48	-1.8
MWS-1	12/5/11	1.93	1.93	1.93	-1.8
MWS-1	2/28/12	0.92	0.92	0.92	-1.8
MWS-1	5/7/2012	0.39	0.39	0.39	-1.8
MWS-1	7/11/2012	-1.91	-1.91	-1.91	-1.8
MWS-1	12/3/2012	-0.03	-0.03	-0.03	-1.8
MWS-1	3/20/2013	0.00	0.00	0.00	-1.8
MWS-1	6/19/2013	0.26	0.26	0.26	-1.8
MWS-1	8/28/13	1.43	1.43	1.43	-1.8
MWS-1	12/3/2013	0.43	0.43	0.43	-1.8
MWS-1	2/17/2014	0.46	0.46	0.46	-1.8
MWS-1	5/12/2014	1.61	1.61	1.61	-1.8
MWS-1	8/18/2014	1.12	1.12	1.12	-1.8
MWS-1	12/1/2014	0.4	0.4	0.4	-1.8
MWS-1	2/18/2015	0.87	0.87	0.87	-1.8
MWS-1	5/13/2015	1.26	1.26	1.26	-1.8
MWS-1	8/10/2015	0.93	0.93	0.93	-1.8
MWS-1	12/7/2015	0.53	0.53	0.53	-1.8
MWS-1	3/7/2016	0.9	0.9	0.9	-1.8
MWS-1	5/9/2016	0.74	0.74	0.74	-1.8
MWS-1	8/22/2016	0.37	0.37	0.37	-1.8
MWS-1	11/29/2016	0.17	0.17	0.17	-1.8

Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2016

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
RW-I	1/12/2004	0.24	0.11		-1.68
RW-I	2/24/2004	-0.06	-0.56		-1.68
RW-I	3/23/2004	-0.53	-1.17		-1.68
RW-I	4/22/2004	-0.06	-0.16		-1.68
RW-I	5/10/2004	0.28	-0.26		-1.68
RW-I	6/8/2004	0.05	-0.52		-1.68
RW-I	7/15/2004	0.5	-0.51		-1.68
RW-I	8/24/2004	0.99	-0.33		-1.68
RW-I	9/21/2004	0.1	-0.12		-1.68
RW-I	10/4/2004	0.58	0.18		-1.68
RW-I	11/10/2004	0.36	0.06		-1.68
RW-I	12/15/2004	0.17	0.07		-1.68
RW-I	1/11/2005	0.27	0.19		-1.68
RW-I	2/25/2005	0.22	0.09		-1.68
RW-I	3/18/2005	0.07	-0.01		-1.68
RW-I	5/18/2005	0.53	0.49		-1.68
RW-I	8/2/2005	-0.08	-0.22		-1.68
RW-I	10/24/2004	-0.7	-0.75		-1.68
RW-I	1/10/2006	-0.87	-0.97	-1.28	-1.68
RW-I	5/8/2006	-0.67	-0.81	-1.24	-1.68
RW-I	7/10/2006	-0.17	-0.41	-1.19	-1.68
RW-I	11/6/2006	0.77	0.76	0.71	-1.68
RW-I	1/2/2007	1.24	1.24	1.24	-1.68
RW-I	4/2/2007	1	1	1	-1.68
RW-I	7/2/2007	1.22	1.02	1.17	-1.68
RW-I	11/5/2007	0.32	0.28	0.15	-1.68
RW-I	3/24/2008	0.12	0.09	-0.02	-1.68
RW-I	3/17/2009	1.73	1.45	0.56	-1.68
RW-I	5/12/2009	2.33	2.06	1.21	-1.68
RW-I	9/8/09	3.33	3.13	2.5	-1.68
RW-I	11/2/09	3.67	3.45	2.76	-1.68
RW-I	1/4/10	3.87	3.83	3.59	-1.68
RW-I	4/7/10	4.48	4.48	4.48	-1.68
RW-I	9/13/10	2.99	2.99	2.99	-1.68
RW-I	12/13/10	2.37	2.37	2.37	-1.68
RW-I	3/7/11	2.16	2.16	2.16	-1.68
RW-I	6/7/11	0.65	0.65	0.65	-1.68
RW-I	8/15/11	2.66	2.66	2.66	-1.68
RW-I	12/6/11	3.78	3.78	3.78	-1.68
RW-I	2/28/12	3.18	3.18	3.18	-1.68
RW-I	5/7/12	2.72	2.72	2.72	-1.68
RW-I	7/11/12	2.38	2.38	2.38	-1.68
RW-I	12/3/12	2.13	2.13	2.13	-1.68
RW-I	3/20/13	2.11	2.11	2.11	-1.68
RW-I	6/19/13	2.53	2.53	2.53	-1.68
RW-I	8/28/13	3.64	3.64	3.64	-1.68
RW-I	12/3/2013	2.61	2.61	2.61	-1.68
RW-I	2/17/2014	2.76	2.76	2.76	-1.68
RW-I	5/12/2014	3.88	3.88	3.88	-1.68
RW-I	8/18/2014	3.51	3.51	3.51	-1.68
RW-I	12/1/2014	2.79	2.79	2.79	-1.68
RW-I	2/18/2015	3.1	3.1	3.1	-1.68
RW-I	5/13/2015	3.59	3.59	3.59	-1.68
RW-I	8/10/2015	1.01	1.01	1.01	-1.68
RW-I	12/7/2015	4.00	4.00	4.00	-1.68
RW-I	3/7/2016	4.35	4.35	4.35	-1.68
RW-I	5/9/2016	4.27	4.27	4.27	-1.68
RW-I	8/22/2016	3.79	3.79	3.79	-1.68
RW-I	11/29/2016	3.56	3.56	3.56	-1.68

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Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
RW-H	1/12/2004	0.35	0.04		-1.65
RW-H	2/24/2004	0.2	0.11		-1.65
RW-H	3/23/2004	0	-0.71		-1.65
RW-H	4/22/2004	0.56	0.47		-1.65
RW-H	5/10/2004	0.62	0.46		-1.65
RW-H	6/8/2004	0.47	0.32		-1.65
RW-H	7/15/2004	0.4	0.11		-1.65
RW-H	8/24/2004	0.71	0.61		-1.65
RW-H	9/21/2004	0.47	0.36		-1.65
RW-H	10/4/2004	0.51	0.5		-1.65
RW-H	11/10/2004	0.46	0.45		-1.65
RW-H	12/15/2004	0.54	0.54		-1.65
RW-H	1/11/2005	0.92	0.92		-1.65
RW-H	2/25/2005	0.6	0.6		-1.65
RW-H	3/18/2005	0.6	0.6		-1.65
RW-H	5/18/05	0.96	0.96		-1.65
RW-H	8/2/05	0.13	0.13		-1.65
RW-H	10/24/05	-1.28	-1.3		-1.65
RW-H	1/10/06	-0.66	-0.66	-0.66	-1.65
RW-H	5/8/06	-0.41	-0.42	-0.45	-1.65
RW-H	7/10/06	-0.04	-0.04	-0.06	-1.65
RW-H	11/6/06	1.11	1.11	1.11	-1.65
RW-H	1/2/07	1.3	1.3	1.3	-1.65
RW-H	4/2/07	1.38	1.38	1.38	-1.65
RW-H	7/2/07	1.56	1.56	1.56	-1.65
RW-H	11/5/07	0.53	0.53	0.52	-1.65
RW-H	3/24/08	0.56	0.32	-0.56	-1.65
RW-H	3/17/09	1.99	1.77	1.07	-1.65
RW-H	5/12/09	2.12	1.91	1.26	-1.65
RW-H	9/8/09	3.11	3.11	3.11	-1.65
RW-H	11/2/09	3.48	3.41	3.19	-1.65
RW-H	1/4/10	3.56	3.42	2.99	-1.65
RW-H	4/7/10	4.41	4.35	4.15	-1.65
RW-H	9/13/10	2.8	2.76	2.64	-1.65
RW-H	12/13/10	2.32	2.28	2.17	-1.65
RW-H	3/7/11	2.06	2.04	1.99	-1.65
RW-H	6/7/11	0.95	0.92	0.81	-1.65
RW-H	8/15/11	2.52	2.49	2.38	-1.65
RW-H	12/5/11	3.66	3.66	3.66	-1.65
RW-H	2/28/12	3.07	3.06	3.03	-1.65
RW-H	5/7/12	2.51	2.5	2.46	-1.65
RW-H	7/11/2012	4.19	4.18	4.14	-1.65
RW-H	12/3/2012	1.49	1.49	1.49	-1.65
RW-H	3/20/2013	2.09	2.09	2.09	-1.65
RW-H	6/19/2013	2.46	2.46	2.46	-1.65
RW-H	8/29/2013	3.41	3.41	3.41	-1.65
RW-H	12/3/2013	2.39	2.39	2.39	-1.65
RW-H	2/17/2014	3.02	3.02	3.02	-1.65
RW-H	5/12/2014	3.76	3.76	3.76	-1.65
RW-H	8/18/2014	3.3	3.3	3.3	-1.65
RW-H	12/1/2014	2.57	2.57	2.57	-1.65
RW-H	2/18/2015	2.81	2.81	2.81	-1.65
RW-H	5/13/2015	3.44	3.44	3.44	-1.65
RW-H	8/10/2015	3.1	3.1	3.1	-1.65
RW-H	12/7/2015	3.72	3.72	3.72	-1.65
RW-H	3/7/2016	4.05	4.05	4.05	-1.65
RW-H	5/9/2016	4.07	4.07	4.07	-1.65
RW-H	8/22/2016	3.98	3.98	3.98	-1.65
RW-H	11/29/2016	3.28	3.28	3.28	-1.65

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Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
PH-14	1/12/2004	0.26	-0.12		-1.62
PH-14	2/24/2004	-0.12	-0.42		-1.62
PH-14	3/23/2004	-0.08	-1.5		-1.62
PH-14	4/22/2004	0.56	0.11		-1.62
PH-14	5/10/2004	1.04	-0.19		-1.62
PH-14	6/8/2004	0.51	-0.22		-1.62
PH-14	7/15/2004	0.03	-0.14		-1.62
PH-14	8/24/2004	0.42	0.21		-1.62
PH-14	9/21/2004	0.41	-0.19		-1.62
PH-14	10/4/2004	0.4	-0.22		-1.62
PH-14	11/10/2004	0.43	0.43		-1.62
PH-14	12/15/2004	0.23	0.23		-1.62
PH-14	1/11/2005	0.39	0.38		-1.62
PH-14	2/25/2005	0.29	0.29		-1.62
PH-14	3/18/2005	0.49	0.24		-1.62
PH-14	5/18/2005	0.74	0.68		-1.62
PH-14	8/2/2005	0.13	-0.19		-1.62
PH-14	10/24/2005	-0.39	-0.59		-1.62
PH-14	1/10/2006	-0.6	-0.96	-2.11	-1.62
PH-14	5/8/2006	-0.46	-0.72	-1.53	-1.62
PH-14	7/10/2006	-0.21	-0.33	-0.73	-1.62
PH-14	11/6/2006	0.93	0.89	0.77	-1.62
PH-14	1/2/07	1.19	1.13	0.96	-1.62
PH-14	4/2/2007	1.35	1.29	1.1	-1.62
PH-14	7/2/2007	1.53	1.5	1.39	-1.62
PH-14	11/5/2007	0.50	0.44	0.24	-1.62
PH-14	3/17/09	0.2	-0.07	-0.91	-1.62
PH-14	5/12/2009	0.28	0.11	-0.42	-1.62
PH-14	9/8/2009	1.22	1.15	0.93	-1.62
PH-14	11/2/2009	1.61	1.55	1.37	-1.62
PH-14	1/4/2010	2.01	1.95	1.76	-1.62
PH-14	4/7/2010	2.6	2.57	2.49	-1.62
PH-14	9/13/2010	1.02	0.98	0.86	-1.62
PH-14	3/7/2011	0.35	0.19	-0.32	-1.62
PH-14	6/7/2011	1.1	0.92	0.36	-1.62
PH-14	8/15/2011	0.77	0.63	0.19	-1.62
PH-14	12/5/2011	1.89	1.8601	1.76	-1.62
PH-14	2/28/2012	1.29	1.26	1.14	-1.62
PH-14	5/7/2012	0.74	0.7	0.57	-1.62
PH-14	7/11/2012	0.38	0.34	0.16	-1.62
PH-14	12/3/2012	0.49	0.27	-0.47	-1.62
PH-14	3/20/2013	0.97	0.22	0.53	-1.62
PH-14	6/19/2013	0.63	0.59	0.46	-1.62
PH-14	8/29/2013	1.73	1.67	1.49	-1.62
PH-14	12/3/2013	0.76	0.746	0.7	-1.62
PH-14	2/17/2014	0.99	0.99	0.99	-1.62
PH-14	5/12/2014	1.99	1.99	1.99	-1.62
PH-14	8/18/2014	1.49	1.49	1.49	-1.62
PH-14	12/1/2014	0.78	0.78	0.78	-1.62
PH-14	2/18/2015	1.21	1.21	1.21	-1.62
PH-14	5/13/2015	1.56	1.56	1.56	-1.62
PH-14	8/10/2015	1.19	1.19	1.19	-1.62
PH-14	12/7/2015	0.88	0.88	0.88	-1.62
PH-14	3/7/2016	1.21	1.21	1.21	-1.62
PH-14	5/9/2016	1.15	1.15	1.15	-1.62
PH-14	8/22/2016	0.65	0.65	0.65	-1.62
PH-14	11/29/2016	0.01	0.01	0.01	-1.62

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Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
RW-G	1/12/2004	0.38	0.38		-1.62
RW-G	2/24/2004	-0.26	-0.31		-1.62
RW-G	3/23/2004	-0.42	-0.54		-1.62
RW-G	4/22/2004	0.2	-0.08		-1.62
RW-G	5/10/2004	-0.6	-0.7		-1.62
RW-G	6/8/2004	-0.05	-0.05		-1.62
RW-G	7/15/2004	0.05	0.01		-1.62
RW-G	8/24/2004	0.39	0.39		-1.62
RW-G	9/21/2004	0.3	-0.19		-1.62
RW-G	10/4/2004	0.27	0.12		-1.62
RW-G	11/10/2004	0.21	0.21		-1.62
RW-G	12/15/2004	0.21	0.21		-1.62
RW-G	1/11/2005	0.39	0.36		-1.62
RW-G	2/25/2005	0.26	0.25		-1.62
RW-G	3/18/2005	0.17	0.16		-1.62
RW-G	5/18/2005	0.65	0.64		-1.62
RW-G	8/2/2005	-0.21	-0.22		-1.62
RW-G	10/24/2005	-0.5	-0.52		-1.62
RW-G	1/10/2006	-0.96	-0.95	-0.99	-1.62
RW-G	5/8/2006	-0.46	-0.47	-0.5	-1.62
RW-G	7/10/2006	-0.36	-0.37	-0.42	-1.62
RW-G	1/2/07	1.81	1.81	1.81	-1.62
RW-G	4/2/2007	1.08	1.08	1.08	-1.62
RW-G	7/2/2007	1.21	1.21	1.21	-1.62
RW-G	11/5/2007	0.28	0.28	0.28	-1.62
RW-G	3/17/09	0.02	-0.04	-0.24	-1.62
RW-G	5/12/2009	0.2	0.16	0.05	-1.62
RW-G	9/8/09	1.31	1.29	1.24	-1.62
RW-G	11/2/09	1.74	1.74	1.72	-1.62
RW-G	1/4/10	2.05	2.05	2.04	-1.62
RW-G	4/7/10	2.64	2.64	2.64	-1.62
RW-G	9/13/10	1.01	0.95	0.74	-1.62
RW-G	12/13/2010	0.67	0.55	0.19	-1.62
RW-G	03/07/11	0.36	0.18	-0.37	-1.62
RW-G	06/07/11	1.32	1.12	0.48	-1.62
RW-G	08/15/11	0.87	0.69	0.11	-1.62
RW-G	12/05/11	1.93	1.9093	1.84	-1.62
RW-G	02/28/12	1.3	1.29	1.26	-1.62
RW-G	05/07/12	0.84	0.72	0.31	-1.62
RW-G	07/11/12	0.49	0.31	-0.48	-1.62
RW-G	12/03/12	0.39	0.21	-0.41	-1.62
RW-G	03/20/13	0.55	0.29	0.13	-1.62
RW-G	06/19/13	0.81	0.69	0.3	-1.62
RW-G	08/29/13	1.8	1.71	1.43	-1.62
RW-G	12/03/13	0.85	0.82	0.72	-1.62
RW-G	02/17/14	1	0.97	0.88	-1.62
RW-G	05/12/14	2.02	2.02	2.02	-1.62
RW-G	08/18/14	1.55	1.55	1.55	-1.62
RW-G	12/01/14	0.8	0.8	0.8	-1.62
RW-G	02/18/15	1.05	1.05	1.05	-1.62
RW-G	5/13/2015	1.67	1.67	1.67	-1.62
RW-G	8/10/2015	1.25	1.25	1.25	-1.62
RW-G	12/7/2015	2.29	2.29	2.29	-1.62
RW-G	3/7/2016	2.65	2.65	2.65	-1.62
RW-G	5/9/2016	2.65	2.65	2.65	-1.62
RW-G	8/22/2016	2.13	2.13	2.13	-1.62
RW-G	11/29/2016	1.76	1.76	1.76	-1.62

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Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
RW-M	1/12/2004	0.47	0.47		-1.52
RW-M	2/24/2004	0.49	0.49		-1.52
RW-M	3/23/2004	0.67	0.67		-1.52
RW-M	4/22/2004	0.99	0.99		-1.52
RW-M	5/10/2004	0.78	0.78		-1.52
RW-M	6/8/2004	0.91	0.91		-1.52
RW-M	7/15/2004	0.81	0.81		-1.52
RW-M	8/24/2004	1.25	1.25		-1.52
RW-M	9/21/2004	1.09	1.09		-1.52
RW-M	10/4/2004	1.12	1.12		-1.52
RW-M	11/10/2004	1.07	1.07		-1.52
RW-M	12/15/2004	1.09	1.09		-1.52
RW-M	1/11/2005	1.62	1.62		-1.52
RW-M	2/25/2005	0.99	0.99		-1.52
RW-M	3/18/2005	0.85	0.85		-1.52
RW-M	5/18/2005	1.4	1.4		-1.52
RW-M	8/2/2005	0.54	0.54		-1.52
RW-M	10/24/2005				-1.52
RW-M	1/10/2006	-0.15	-0.15	-0.15	-1.52
RW-M	5/8/2006	-0.04	-0.04	-0.04	-1.52
RW-M	7/10/2006	0.33	0.33	0.33	-1.52
RW-M	11/6/2006				-1.52
RW-M	1/2/07	1.9	1.9	1.9	-1.52
RW-M	4/2/2007	1.83	1.83	1.83	-1.52
RW-M	7/2/2007	2	2	2	-1.52
RW-M	11/5/2007	1.01	1.01	1.01	-1.52
RW-M	3/17/09	-0.26	-0.26	-0.26	-1.52
RW-M	5/12/2009	0.15	0.15	0.15	-1.52
RW-M	9/8/2009	1.35	1.35	1.35	-1.52
RW-M	11/2/2009	1.7	1.7	1.7	-1.52
RW-M	1/4/2010	2.06	2.06	2.06	-1.52
RW-M	4/7/2010	2.62	2.62	2.62	-1.52
RW-M	9/13/2010	0.96	0.96	0.96	-1.52
RW-M	12/13/2010	0.45	0.45	0.45	-1.52
RW-M	3/7/2011	0.25	0.25	0.25	-1.52
RW-M	6/7/2011	0.96	0.96	0.96	-1.52
RW-M	15-Aug	0.77	0.77	0.77	-1.52
RW-M	12/6/2011	1.9	1.9	1.9	-1.52
RW-M	2/28/2012	1.25	1.25	1.25	-1.52
RW-M	5/7/2012	0.7	0.7	0.7	-1.52
RW-M	7/11/2012	0.37	0.37	0.37	-1.52
RW-M	12/3/2012	0.64	0.64	0.64	-1.52
RW-M	3/20/2013	0.33	0.33	0.33	-1.52
RW-M	6/19/2013	0.78	0.78	0.78	-1.52
RW-M	8/29/2013	1.79	1.79	1.79	-1.52
RW-M	12/3/2013	0.74	0.74	0.74	-1.52
RW-M	2/17/2014	1.03	1.03	1.03	-1.52
RW-M	5/12/2014	2.07	2.07	2.07	-1.52
RW-M	8/18/2014	1.53	1.53	1.53	-1.52
RW-M	12/1/2014	0.81	0.81	0.81	-1.52
RW-M	2/18/2015	1.21	1.21	1.21	-1.52
RW-M	5/13/2015	1.67	1.67	1.67	-1.52
RW-M	8/10/2015	1.18	1.18	1.18	-1.52
RW-M	12/7/2015	2.41	2.41	2.41	-1.52
RW-M	3/7/2016	2.76	2.76	2.76	-1.52
RW-M	5/9/2016	2.83	2.83	2.83	-1.52
RW-M	8/22/2016	2.40	2.40	2.40	-1.52
RW-M	12/2/2016	2.31	2.31	2.31	-1.52

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Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
MWS-3	1/12/2004	0.72	0.72		-1.28
MWS-3	2/24/2004	1.26	0.98		-1.28
MWS-3	3/23/2004	1.03	0.79		-1.28
MWS-3	4/22/2004	3.66	3.66		-1.28
MWS-3	5/10/2004	3.69	3.69		-1.28
MWS-3	6/8/2004	3.29	3.29		-1.28
MWS-3	7/15/2004	1.17	1.17		-1.28
MWS-3	8/24/2004	1.55	1.53		-1.28
MWS-3	9/21/2004	1.15	1.09		-1.28
MWS-3	10/4/2004	1.45	1.44		-1.28
MWS-3	11/10/2004	1.32	1.32		-1.28
MWS-3	12/15/2004	1.57	1.57		-1.28
MWS-3	1/11/2005	1.25	1.24		-1.28
MWS-3	2/25/2005	0.96	0.95		-1.28
MWS-3	3/18/2005	0.83	0.83		-1.28
MWS-3	5/18/2005	1.14	1.14		-1.28
MWS-3	8/2/2005	0.38	0.37		-1.28
MWS-3	10/24/2005	-0.32	-0.33		-1.28
MWS-3	1/10/2006	-0.2	-0.21	-0.23	-1.28
MWS-3	5/8/2006	-0.29	-0.29	-0.3	-1.28
MWS-3	7/10/2006	-0.01	-0.01	-0.01	-1.28
MWS-3	11/6/2006	1.63	1.63	1.63	-1.28
MWS-3	1/2/2007	1.69	1.69	1.69	-1.28
MWS-3	4/2/2007	1.57	1.57	1.57	-1.28
MWS-3	7/2/2007	1.75	1.75	1.75	-1.28
MWS-3	11/5/2007	0.8	0.8	0.8	-1.28
MWS-3	3/17/09	-0.23	-0.23	-0.23	-1.28
MWS-3	5/12/2009	0.36	0.36	0.36	-1.28
MWS-3	9/8/2009	1.88	1.88	1.88	-1.28
MWS-3	11/2/2009	2.19	2.19	2.19	-1.28
MWS-3	1/4/2010	2.34	2.34	2.34	-1.28
MWS-3	4/7/2010	2.85	2.85	2.85	-1.28
MWS-3	9/13/2010	0.86	0.86	0.86	-1.28
MWS-3	12/13/2010	0.49	0.49	0.49	-1.28
MWS-3	3/7/2011	0.45	0.45	0.45	-1.28
MWS-3	6/7/2011	1	1	1	-1.28
MWS-3	8/15/2011	1.03	1.03	1.03	-1.28
MWS-3	12/6/2011	1.99	1.99	1.99	-1.28
MWS-3	2/28/2012	1.29	1.29	1.29	-1.28
MWS-3	5/7/2012	0.7	0.7	0.7	-1.28
MWS-3	7/11/2012	0.33	0.33	0.33	-1.28
MWS-3	12/3/2012	0.07	0.07	0.07	-1.28
MWS-3	3/20/2013	0.58	0.58	0.58	-1.28
MWS-3	6/19/2013	1.31	1.31	1.31	-1.28
MWS-3	8/29/2013	2.01	2.01	2.01	-1.28
MWS-3	12/3/2013	0.74	0.74	0.74	-1.28
MWS-3	2/17/2014	0.2	0.2	0.2	-1.28
MWS-3	5/12/2014	2.34	2.34	2.34	-1.28
MWS-3	8/18/2014	1.55	1.55	1.55	-1.28
MWS-3	12/1/2014	0.86	0.86	0.86	-1.28
MWS-3	2/18/2015	1.25	1.25	1.25	-1.28
MWS-3	5/13/2015	1.74	1.74	1.74	-1.28
MWS-3	8/10/2015	1.29	1.29	1.29	-1.28
MWS-3	12/7/2015	0.86	0.86	0.86	-1.28
MWS-3	3/8/2016	1.39	1.39	1.39	-1.28
MWS-3	5/9/2016	1.36	1.36	1.36	-1.28
MWS-3	8/22/2016	0.63	0.63	0.63	-1.28
MWS-3	11/29/2016	0.56	0.56	0.56	-1.28

Water Levels at Sewers
Former Defense Supply Center Philadelphia
Through Third Quarter of 2016

Well	Date	Product Elevation	Cor. Water Elevation	Uncor. Water Elev.	Bottom of Sewer Elevation
MWS-4	1/12/2004	0.88	0.88		-1.28
MWS-4	2/24/2004	0.51	0.51		-1.28
MWS-4	3/23/2004	0.56	0.56		-1.28
MWS-4	4/22/2004	1.17	1.17		-1.28
MWS-4	5/10/2004	1.29	1.29		-1.28
MWS-4	6/8/2004	0.92	0.92		-1.28
MWS-4	7/15/2004	1.09	1.09		-1.28
MWS-4	8/24/2004	1.09	1.09		-1.28
MWS-4	9/21/2004	2.3	2.3		-1.28
MWS-4	10/4/2004	1.05	1.05		-1.28
MWS-4	11/10/2004	1.04	1.04		-1.28
MWS-4	12/15/2004	1.21	1.21		-1.28
MWS-4	1/11/2005	1.09	1.09		-1.28
MWS-4	2/25/2005	0.97	0.97		-1.28
MWS-4	3/18/2005	0.85	0.85		-1.28
MWS-4	5/18/2005	1.23	1.23		-1.28
MWS-4	8/2/2005	0.38	0.38		-1.28
MWS-4	10/24/2005	-0.09	-0.09		-1.28
MWS-4	1/10/2006	-0.17	-0.17	-0.17	-1.28
MWS-4	5/8/2006	-0.02	-0.02	-0.02	-1.28
MWS-4	7/10/2006	0.27	0.27	0.27	-1.28
MWS-4	11/6/2006	1.53	1.53	1.53	-1.28
MWS-4	1/2/2007	1.81	1.81	1.81	-1.28
MWS-4	4/2/2007	1.86	1.86	1.86	-1.28
MWS-4	7/2/2007	1.86	1.86	1.86	-1.28
MWS-4	11/5/2007	0.94	0.94	0.94	-1.28
MWS-4	3/17/2009	0.15	0.15	0.15	-1.28
MWS-4	5/12/2009	0.79	0.79	0.79	-1.28
MWS-4	9/8/09	1.79	1.79	1.78	-1.28
MWS-4	11/2/09	2.28	2.28	2.26	-1.28
MWS-4	1/4/10	1.92	1.92	1.92	-1.28
MWS-4	4/7/10	3	3	3	-1.28
MWS-4	9/13/10	1.12	1.12	1.11	-1.28
MWS-4	12/13/10	0.99	0.99	0.99	-1.28
MWS-4	3/7/11	1.06	1.06	1.06	-1.28
MWS-4	6/7/11	1.23	1.23	1.23	-1.28
MWS-4	8/15/11	1.38	1.38	1.38	-1.28
MWS-4	12/6/11	2.16	2.16	2.16	-1.28
MWS-4	2/28/12	1.49	1.49	1.49	-1.28
MWS-4	5/7/12	1.24	1.24	1.24	-1.28
MWS-4	7/11/12	0.58	0.58	0.58	-1.28
MWS-4	12/4/12	0.50	0.50	0.50	-1.28
MWS-4	3/19/13	1.04	1.04	1.04	-1.28
MWS-4	6/19/13	1.37	1.37	1.37	-1.28
MWS-4	8/28/13	2.13	2.13	2.13	-1.28
MWS-4	12/3/13	1.02	1.02	1.02	-1.28
MWS-4	2/17/14	1.34	1.34	1.34	-1.28
MWS-4	5/12/14	2.38	2.38	2.38	-1.28
MWS-4	8/18/2014	1.84	1.84	1.83	-1.28
MWS-4	12/1/2014	1.23	1.23	1.23	-1.28
MWS-4	2/18/2015	1.5	1.5	1.5	-1.28
MWS-4	5/13/2015	2.01	2.01	2.01	-1.28
MWS-4	8/10/2015	1.62	1.62	1.62	-1.28
MWS-4	12/7/2015	1.23	1.23	1.23	-1.28
MWS-4	3/7/2016	1.61	1.61	1.61	-1.28
MWS-4	5/9/2016	1.23	1.23	1.23	-1.28
MWS-4	8/22/2016	1.22	1.22	1.22	-1.28
MWS-4	11/29/2016	1.52	1.52	1.52	-1.28

Sewer Readings

4/15/2014 to 9/17/2019

Date	Display Text	MH-C	MC-G	19th & Moyamensing East	19th & Moyamensing West	Pollock & Moyamensing	19th Street (Near cut through)
April 15, 2014	LEL (%)	0	10	0	0	0	0
	PID (ppm)	0	7.6	0.6	0.3	0	0
	Air Flow	IN	IN	IN	IN	NA	OUT
May 30, 2014	LEL (%)	0	12	0	0	0	0
	PID (ppm)	0	0	0	0	0	0
	Air Flow	IN	IN	OUT	OUT	NA	OUT
June 16, 2014	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0	0	0	0	0
	Air Flow	IN	IN	IN	IN	NA	OUT
July 22, 2014	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.3	0.7	0.3	0.2	0	0.2
	Air Flow	IN	IN	IN	IN	NA	IN
August 28, 2014	LEL (%)	0	1	0	0	0	0
	PID (ppm)	0.7	0	0	0	0	0
	Air Flow	OUT	IN	IN	OUT	NA	OUT
September 22, 2014	LEL (%)	0	0	0	0	0	0
	PID (ppm)	18.5	1.9	0	0	0	0
	Air Flow	OUT	IN	OUT	OUT	NA	Neutral
October 24, 2014	LEL (%)	0	0	0	0	0	0
	PID (ppm)	19.6	30.9	0.5	0.4	0	0
	Air Flow	OUT	IN	OUT	OUT	NA	Neutral
November 14, 2014	LEL (%)	0	0	0	0	0	0
	PID (ppm)	6.9	5.6	1.9	1.6	0	0
	Air Flow	OUT	OUT	OUT	IN	NA	OUT
December 19, 2014	LEL (%)	0	0	0	0	0	0
	PID (ppm)	51.5	47.6	0.5	0	0	0
	Air Flow	OUT	IN	OUT	IN	NA	OUT
January 23, 2015	LEL (%)	0	0	0	0	0	0
	PID (ppm)	3.1	0.3	0	0	0	0
	Air Flow	OUT	IN	OUT	IN	NA	IN
March 13, 2015	LEL (%)	0	0	0	0	0	0
	PID (ppm)	1.8	0.4	0	0	0	0
	Air Flow	OUT	IN	IN	OUT	NA	OUT
April 20, 2015	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0	0.2	0.6	0	0.2
	Air Flow	IN	OUT	IN	IN	NA	Neutral
May 06, 2015	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0	0.1	0.2	0	0.2
	Air Flow	IN	IN	IN	IN	IN	IN
June 12, 2015	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.3	0	0	0	0	0
	Air Flow	IN	IN	IN	IN	OUT	OUT
July 17, 2015	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0	0	2.1	0	0
	Air Flow	IN	IN	IN	OUT	NA	OUT
August 26, 2015	LEL (%)	0	0	0	0	0	0
	PID (ppm)	1.2	5.7	0	0	0	0
	Air Flow	IN	OUT	OUT	OUT	NA	IN
September 16, 2015	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0	0	7.2	0	0
	Air Flow	IN	IN	IN	OUT	NA	Neutral
October 27, 2015	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.2	0.4	0.1	0	0	0.7
	Air Flow	OUT	IN	OUT	OUT	NA	IN

Sewer Readings

4/15/2014 to 9/17/2019

Date	Display Text	MH-C	MC-G	19th & Moyamensing East	19th & Moyamensing West	Pollock & Moyamensing	19th Street (Near cut through)
November 25, 2015	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.6	0.1	0.5	0	0.3	0
	Air Flow	Neutral	IN	OUT	OUT	NA	OUT
December 29, 2015	LEL (%)	0	0	1	0	0	1
	PID (ppm)	5.6	6.2	9.3	3.2	0	8.9
	Air Flow	OUT	OUT	OUT	OUT	NA	OUT
January 22, 2016	LEL (%)	0	0	0	0	0	0
	PID (ppm)	3.6	2.4	0.4	0.3	0	0.3
	Air Flow	OUT	IN	OUT	OUT	NA	OUT
February 15, 2016	LEL (%)	1	0	0	0	0	0
	PID (ppm)	0	0	0	0	0	0
	Air Flow	OUT	IN	OUT	IN	NA	Neutral
March 21, 2016	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0.1	0.2	0.5	0	0
	Air Flow	OUT	IN	OUT	IN	NA	OUT
April 20, 2016	LEL (%)	0	0	0	0	0	0
	PID (ppm)	8.7	5.8	1.6	0	0	0
	Air Flow	OUT	OUT	OUT		IN	
May 23, 2016	LEL (%)	0	0	0	0	0	0
	PID (ppm)	2.1	3.2	0.9	0	0	0
	Air Flow	OUT	OUT	OUT	IN	NA	Neutral
June 22, 2016	LEL (%)	0	0	0	0	0	0
	PID (ppm)	1.1	2.8	0	0	0	0
	Air Flow	OUT	OUT	OUT	OUT	Neutral	Neutral
July 19, 2016	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.8	0.3	0	0	0	0
	Air Flow	OUT	OUT	OUT	OUT	OUT	OUT
August 08, 2016	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0.3	0	0	0	0
	Air Flow	IN	IN	IN	IN	NA	IN
September 27, 2016	LEL (%)	0	0	0	0	0	0
	PID (ppm)	7.9	17.2	24.6	23.7	0	3.2
	Air Flow	OUT	IN	OUT	OUT	NA	OUT
October 26, 2016	LEL (%)	0	1	1	1	0	0
	PID (ppm)	0.1	0.1	0.1	0.1	0	0
	Air Flow	OUT	IN	OUT	IN	NA	OUT
November 18, 2016	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0	0	0	0	0
	Air Flow	OUT	IN	OUT	OUT	NA	Neutral
December 14, 2016	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.3	0	0.1	0	0	0
	Air Flow	OUT	IN	OUT	IN	NA	Neutral
January 31, 2017	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0	0	0	0	0
	Air Flow	OUT	IN	OUT	OUT	NA	OUT
February 28, 2017	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0	0	0	0	0
	Air Flow	IN	IN	IN	IN	NA	Neutral
April 28, 2017	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.2	0.5	0	0	0	0
	Air Flow	IN	IN	IN	IN	NA	Neutral
May 26, 2017	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.9	0.4	0	0	0	0
	Air Flow	OUT	OUT	OUT	IN	NA	OUT

Sewer Readings

4/15/2014 to 9/17/2019

Date	Display Text	MH-C	MC-G	19th & Moyamensing East	19th & Moyamensing West	Pollock & Moyamensing	19th Street (Near cut through)
June 14, 2017	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.1	0	0	0.1	0	0
	Air Flow	IN	IN	OUT	OUT	NA	OUT
July 11, 2017	LEL (%)	0	1		0	0	0
	PID (ppm)	1.5	2.3		0	0	0
	Air Flow	OUT	IN		OUT	NA	OUT
August 18, 2017	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.1	0.2	0.4	0.8	0	0.2
	Air Flow	IN	IN	IN	OUT	Neutral	Neutral
September 29, 2017	LEL (%)	1	0	0	0	0	0
	PID (ppm)	24.7	10.6	0	0	0	0
	Air Flow	OUT	IN	IN	IN	NA	OUT
October 23, 2017	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.4	0.6	0.3	0.5	0	0
	Air Flow	IN	IN	IN	IN	NA	OUT
November 08, 2017	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0.1	0.3	0	0	0
	Air Flow	IN	IN	IN	IN	NA	OUT
January 29, 2018	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.2	0.2	0.3	0	0	0
	Air Flow	OUT	IN	OUT	IN	NA	OUT
February 27, 2018	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.4	0.5	0	0	0	0
	Air Flow	OUT	IN	OUT	OUT	NA	Neutral
March 23, 2018	LEL (%)	0	0	0	0	0	0
	PID (ppm)	5.5	5.4	0.3	0	0	0
	Air Flow	OUT	IN	OUT	OUT	NA	OUT
April 09, 2018	LEL (%)	0	0	0	0	NM	0
	PID (ppm)	0	0	0	0	NM	0
	Air Flow	OUT	IN	OUT	OUT	NM	IN
May 07, 2018	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.5	0.3	0.0	0.0	0.0	0.0
	Air Flow	IN	IN	OUT	OUT	NA	OUT
June 05, 2018	LEL (%)	3	0	0	0	0	0
	PID (ppm)	25.6	0.2	0.0	0.0	0	0.0
	Air Flow	OUT	OUT	IN	OUT	NA	OUT
July 20, 2018	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.0	0.3	0.0	0.0	0.0	0.0
	Air Flow	IN	IN	IN	IN	NA	Neutral
August 31, 2018	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.0	0.0	0.0	0.0	0.0	0.0
	Air Flow	IN	IN	OUT	OUT	NA	Neutral
September 28, 2018	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.0	0.0	0.0	0.0	0.0	0.0
	Air Flow	IN	IN	IN	OUT	NA	OUT
November 30, 2018	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.0	0.0	0.0	0.0	0.0	0.0
	Air Flow	OUT	IN	OUT	OUT	NA	IN
December 17, 2018	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0.3	0.0	0.0	0.0	0.0	0.0
	Air Flow	OUT	IN	OUT	IN	NA	NEUTRAL
January 29, 2019	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0	0	0	0	0
	Air Flow	OUT	IN	IN	OUT	OUT	OUT
February 13, 2019	LEL (%)	0	0	0	0	0	0
	PID (ppm)	2.3	0.0	0.0	0.0	0.0	0.0

Sewer Readings

4/15/2014 to 9/17/2019

Date	Display Text	MH-C	MC-G	19th & Moyamensing East	19th & Moyamensing West	Pollock & Moyamensing	19th Street (Near cut through)
	Air Flow	OUT	IN	OUT	IN	NA	NEUTRAL
February 21, 2019	LEL (%)	0	0	0	0	0	0
	PID (ppm)	2.8	0.7	0	0	0	0
	Air Flow	IN	IN	IN	OUT	OUT	OUT
May 29, 2019	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0	0	0	0	0.1
	Air Flow	IN	IN	IN	OUT	OUT	NA
June 25, 2019	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0	0	0	0	0
	Air Flow	OUT	IN	OUT	OUT	NA	OUT
July 17, 2019	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0	0	6.3	0	0
	Air Flow	IN	IN	OUT	OUT	NEUTRAL	OUT
August 21, 2019	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0	0.1	0	0	0
	Air Flow	IN	IN	IN	IN	NEUTRAL	OUT
September 17, 2019	LEL (%)	0	0	0	0	0	0
	PID (ppm)	0	0.2	0	0	0	0
	Air Flow	OUT	OUT	OUT	IN	NEUTRAL	OUT

Appendix K

Inferred Apparent

Product Thickness

Extent of Free Phase Plume (October 28, 2002)

SUNOCO PROPERTY

CSX PROPERTY

SEPTA PROPERTY

RYDER PROPERTY

N

Legend

Apparent Product Thickness (Feet) where present

0 - 0.8
1.0-1.8
2.0-4.6

Monitoring Wells

Recovery Wells

Note:
1. Dashed lines represent estimated extent of free phase plume based on existing information. The lack of nearby monitoring wells in these areas resulted in an estimation of product thickness and extent based upon the nearest well with product thickness.

Base Map Sources:
James M. Stewart, Inc. (April 1999)
"Off-Site Free Phase Hydrocarbon Final Report (Dames & Moore, 1997)

200 0 200 400 Feet

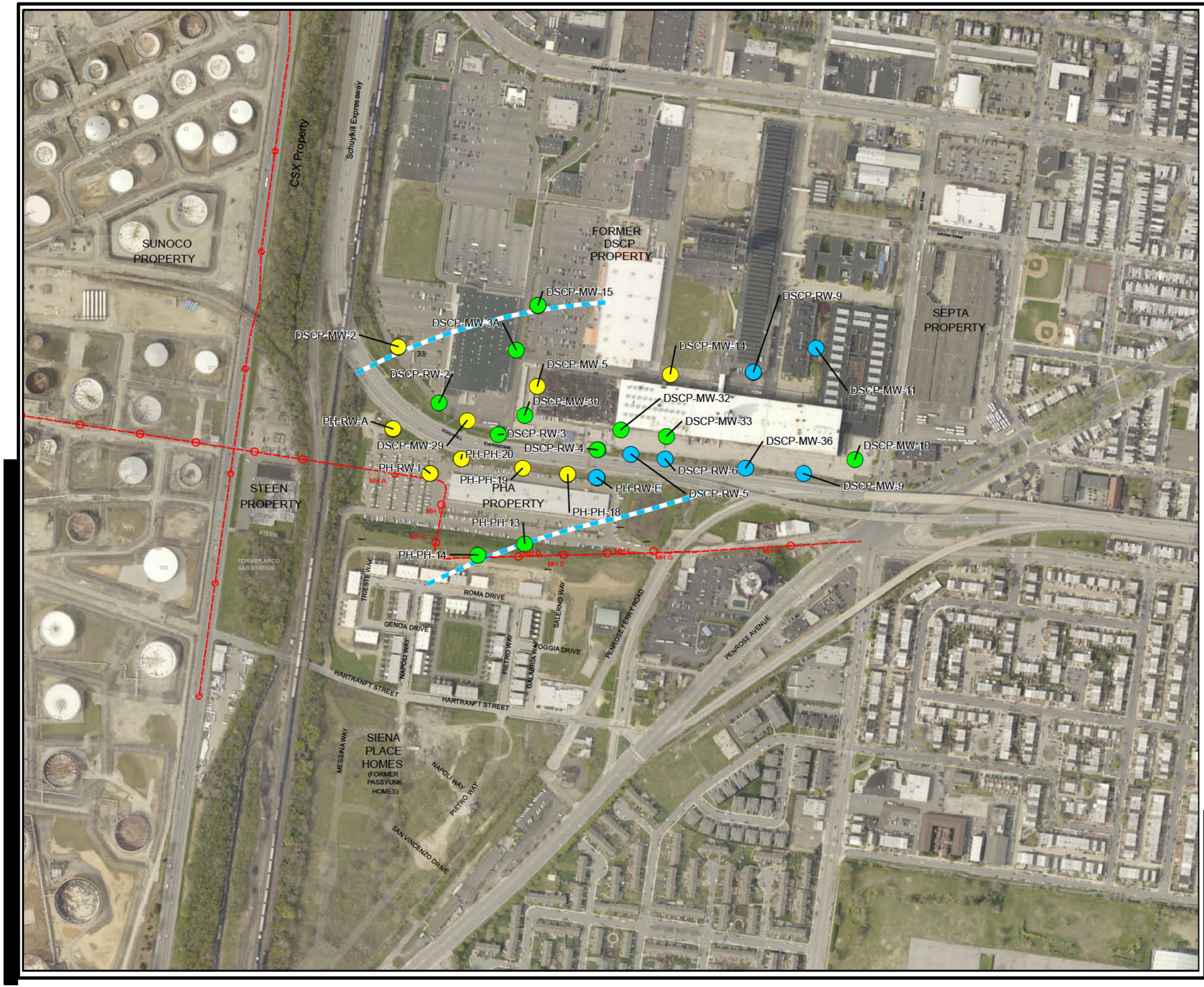
Defense Support Center Philadelphia
DSCP/Passyunk Homes

Figure 3
Inferred Apparent Product Thickness (Feet)
Performance Monitoring Wells and Recovery Wells
October 28, 2002

FOSTER WHEELER ENVIRONMENTAL CORPORATION

Appendix L

LNAPL Fingerprinting Analysis



Legend:

- Indicates >10% Light Gasoline Range Hydrocarbons (Boiling Boint <200F)
- Indicates ≤10% Light Gasoline Range Hydrocarbons and ≤30% Diesel and Residual Range Hydrocarbons
- Indicates > 30% Diesel and Residual Range Hydrocarbons (Boiling Point >400F)
- Sewer Line
- Manhole
- Interpreted Limits of the** "Hole/Breach"

0 420 840

SCALE IN FEET

FORMER DEFENSE SUPPLY CENTER PHILADELPHIA

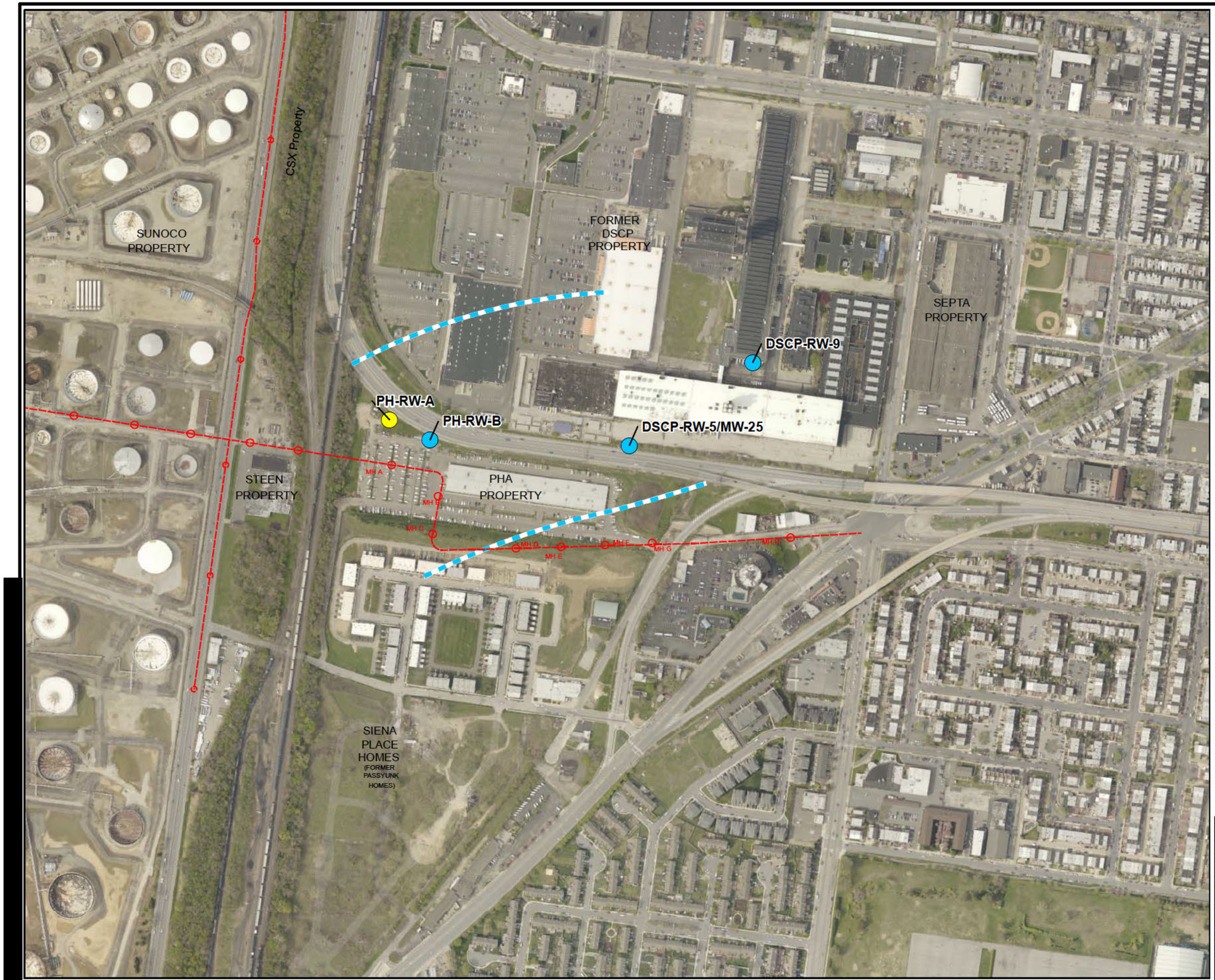
REMEDIAL INVESTIGATION REPORT

LNAPL COMPOSITION BASED ON BOILING POINT CHARACTERISTICS 2003 and 2006

ARCADIS Design & Consultancy for natural and built assets

FIGURE

L-1



Legend:

- Indicates >10% Light Gasoline Range Hydrocarbons (Boiling Boint <200F)
- Indicates > 30% Diesel and Residual Range Hydrocarbons (Boiling Point >400F)
- Sewer Line
- Manhole
- Interpreted Limits of the** "Hole/Breach"

0 420 840

SCALE IN FEET

FORMER DEFENSE SUPPLY CENTER PHILADELPHIA

REMEDIAL INVESTIGATION REPORT

LNAPL COMPOSITION BASED ON BOILING POINT CHARACTERISTICS - 2012

ARCADIS Design & Consultancy for natural and built assets

FIGURE

L-2



Legend:

- Indicates >10% Light Gasoline Range Hydrocarbons (Boiling Boint <200F)
- Indicates > 30% Diesel and Residual Range Hydrocarbons (Boiling Point >400F)
- Sewer Line
- Manhole
- Interpreted Limits of the** "Hole/Breach"

0 420 840

SCALE IN FEET

FORMER DEFENSE SUPPLY CENTER PHILADELPHIA

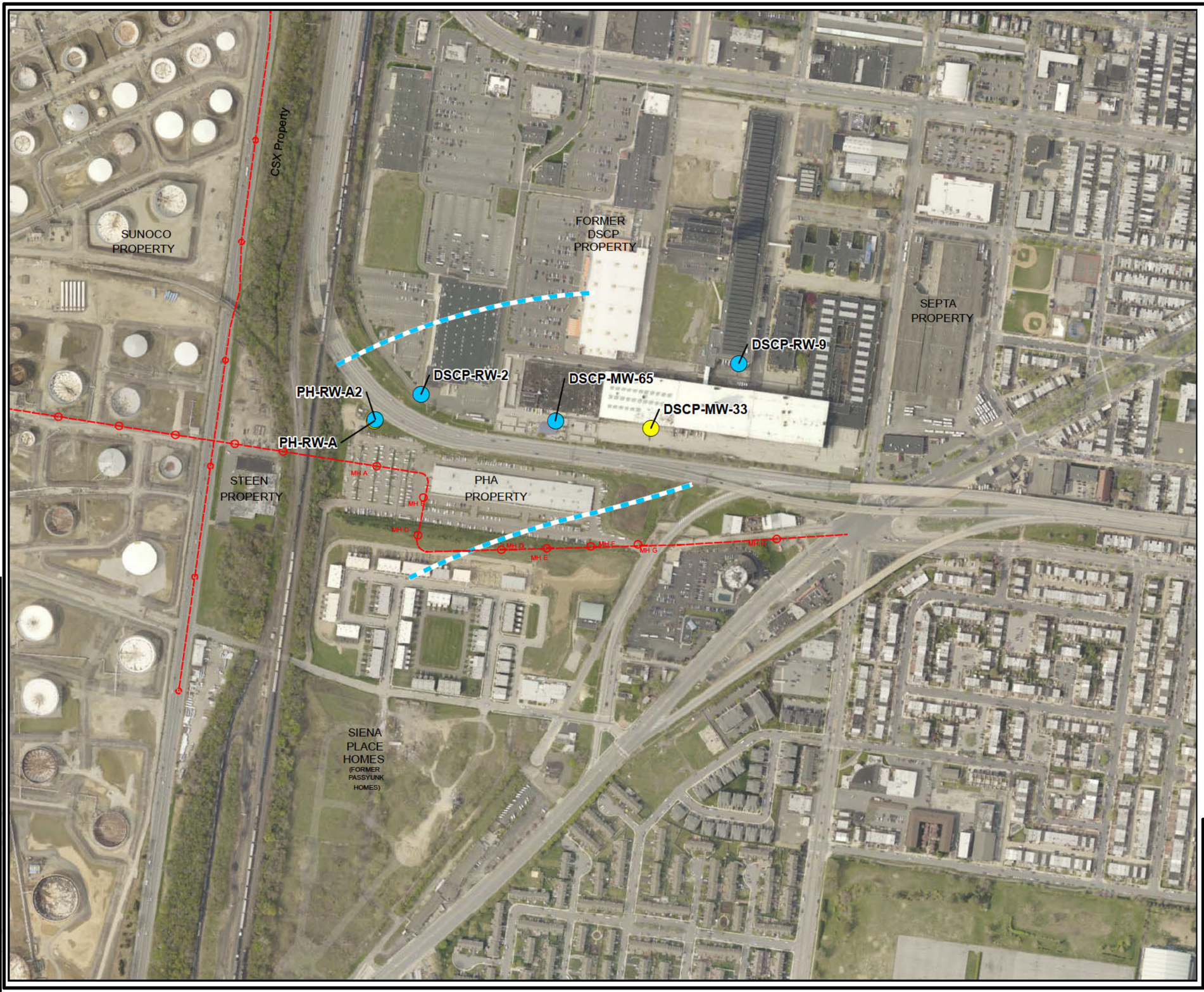
REMEDIAL INVESTIGATION REPORT

LNAPL COMPOSITION BASED ON BOILING POINT CHARACTERISTICS - 2015

ARCADIS Design & Consultancy for natural and built assets

FIGURE

L-3



Legend:

- Indicates >10% Light Gasoline Range Hydrocarbons (Boiling Boint <200F)
- Indicates > 30% Diesel and Residual Range Hydrocarbons (Boiling Point >400F)
- Sewer Line
- Manhole
- Interpreted Limits of the** "Hole/Breach"

0 420 840

SCALE IN FEET

FORMER DEFENSE SUPPLY CENTER PHILADELPHIA

REMEDIAL INVESTIGATION REPORT

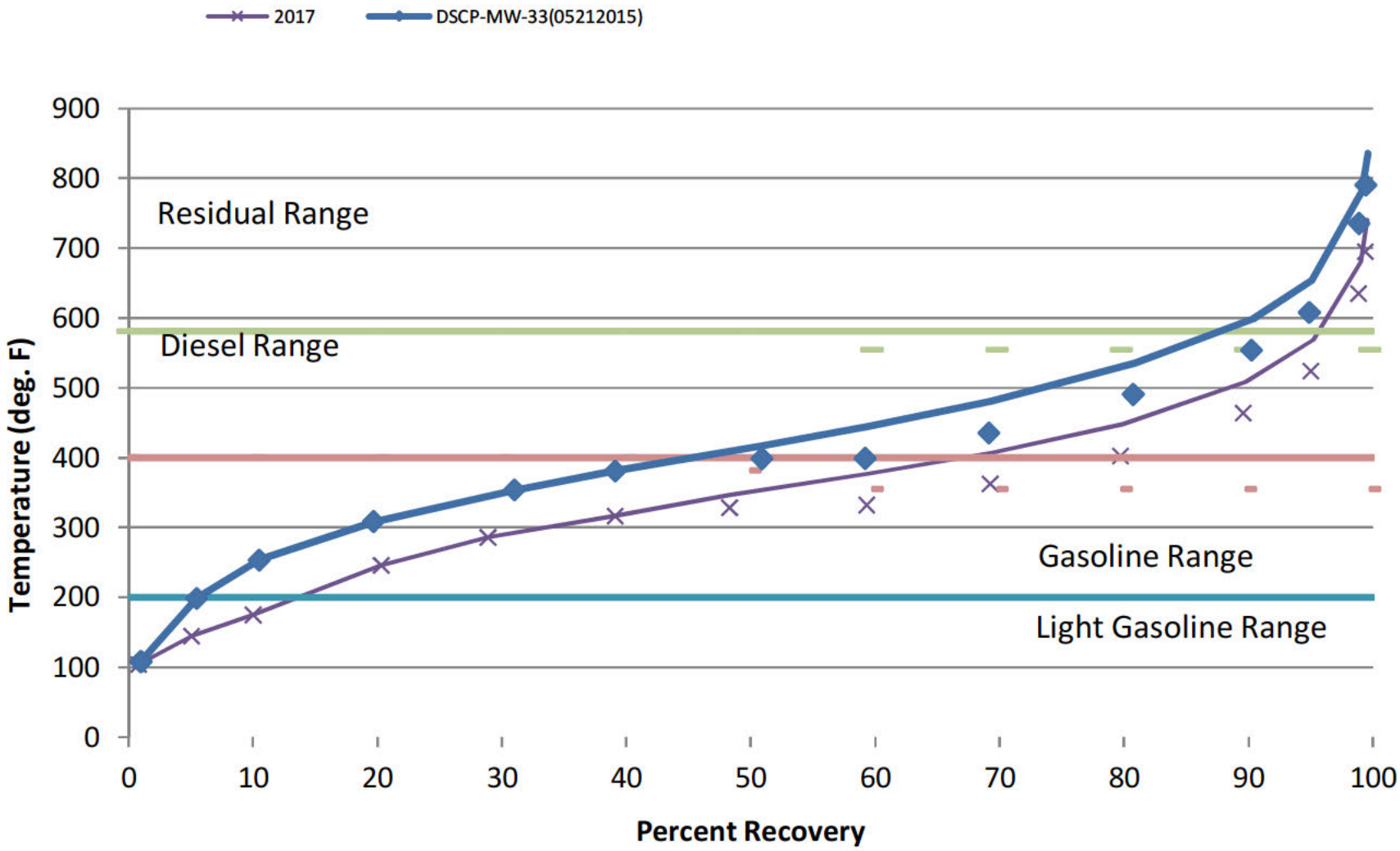
LNAPL COMPOSITION BASED ON BOILING POINT CHARACTERISTICS - 2017

ARCADIS Design & Consultancy for natural and built assets

FIGURE

L-4

GC-1: DSCP-MW-33 Recent and Historical Data



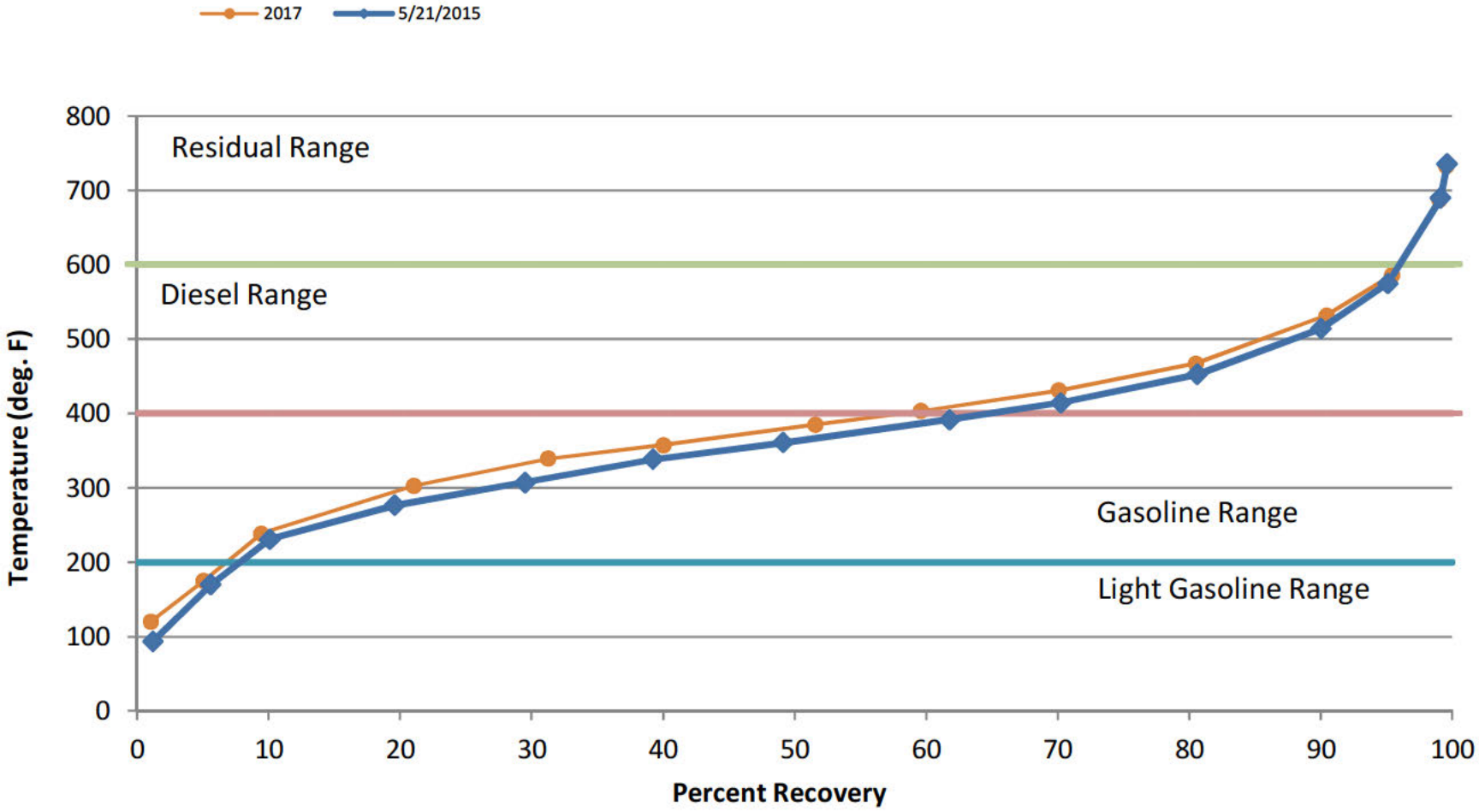
FORMER DEFENSE SUPPLY CENTER PHILADELPHIA

REMEDIAL INVESTIGATION REPORT

DSCP-MW-33 RECENT AND HISTORICAL DATA: BOILING POINT CHARACTERISTICS

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GC-2: DSCP-MW-65 Recent and Historical Data



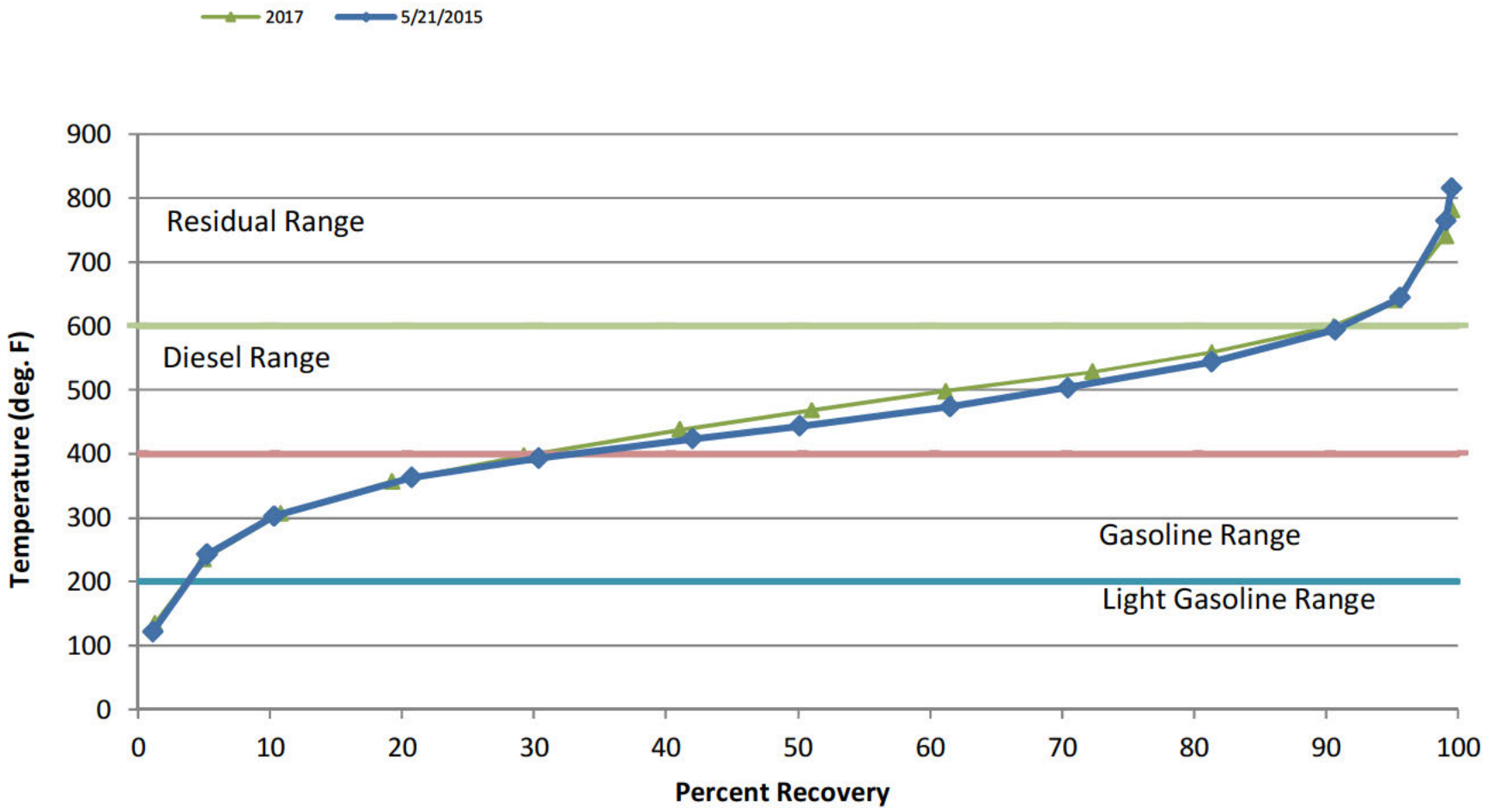
FORMER DEFENSE SUPPLY CENTER PHILADELPHIA

REMEDIAL INVESTIGATION REPORT

DSCP-MW-65 RECENT AND HISTORICAL DATA: BOILING POINT CHARACTERISTICS

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GC-3: DSCP-RW-2 Recent and Historical Data



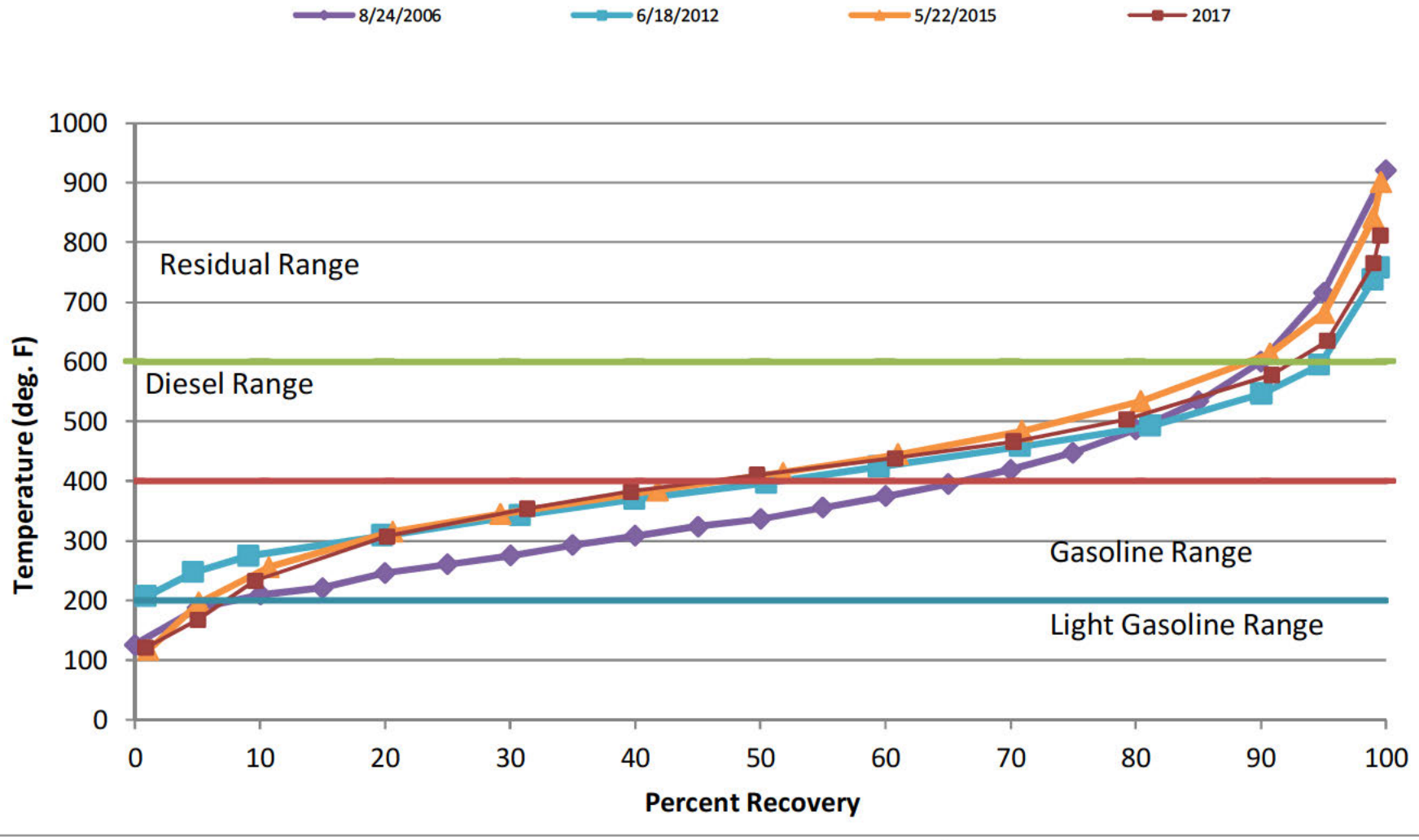
FORMER DEFENSE SUPPLY CENTER PHILADELPHIA

REMEDIAL INVESTIGATION REPORT

DSCP-RW-2 RECENT AND HISTORICAL DATA: BOILING POINT CHARACTERISTICS

ARCADIS Design & Consultancy for natural and built assets

GC-4: DSCP-RW-9 Recent and Historical Data



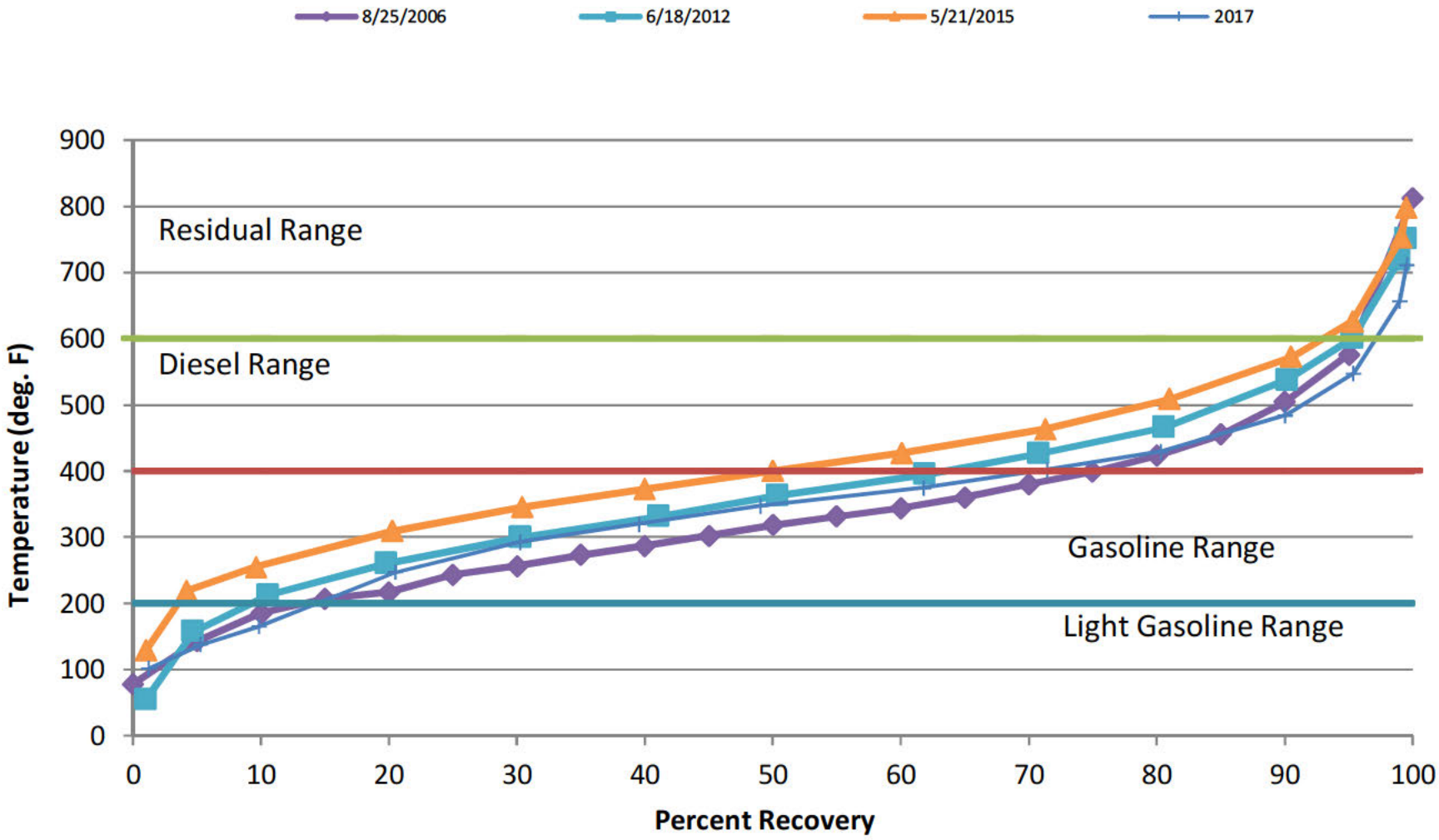
FORMER DEFENSE SUPPLY CENTER PHILADELPHIA

REMEDIAL INVESTIGATION REPORT

DSCP-RW-9 RECENT AND HISTORICAL DATA: BOILING POINT CHARACTERISTICS

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GC-5: PH-RW-A Recent and Historical Data



FORMER DEFENSE SUPPLY CENTER PHILADELPHIA

REMEDIAL INVESTIGATION REPORT

PH-RW-A RECENT AND HISTORICAL DATA: BOILING POINT CHARACTERISTICS

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Appendix L:
LNAPL Fingerprinting Data
2012 to 2017

RW-A LNAPL 061812		RW-A LNAPL 061812		RW-B LNAPL 061812		RW-9 LNAPL 061812		RW-5 LNAPL 061812	
% Rec.	Temp.	% Rec.	Temp.	% Rec.	Temp.	% Rec.	Temp.	% Rec.	Temp.
1.0	54.1	1.0	54.1	1.3	194	0.9	206.1	1.0	163.1
4.7	157.1	4.7	157.1	5.1	262.9	4.7	247	5.1	239.9
10.6	212.5	10.6	212.5	9.8	306	9.1	274.2	9.7	270.6
19.8	260.1	19.8	260.1	19.2	357.6	19.8	308.2	21.4	316.7
30.3	299.7	30.3	299.7	29.2	409.3	30.8	342.3	31.9	355.1
41.1	331.4	41.1	331.4	40.0	460.9	40.0	369.5	41.2	385.8
50.4	363.1	50.4	363.1	51.5	512.6	50.5	396.7	51.4	416.5
61.9	394.8	61.9	394.8	61.6	555.7	59.5	424	61.1	447.3
70.8	426.4	70.8	426.4	70.0	590.1	70.8	458	71.1	485.7
80.6	466.1	80.6	466.1	80.5	633.2	81.2	492	80.5	531.7
90.2	537.4	90.2	537.4	90.1	684.8	90.1	546.5	90.9	608.5
95.3	600.8	95.3	600.8	95.5	736.5	94.7	594.1	95.4	662.3
99.0	719.6	99.0	719.6	99	822.6	99	737.1	99	746.8
99.5	751.3	99.5	751.3	99.5	857	99.5	757.5	99.5	777.5

PH-RW-A(05212015)		DSCP-RW-9(05222015)		PH-RW-C(05212015)		PH-RW-CA(05212015)		DSCP-MW-33(05212015)		DSCP-MW-32(05212015)	
% Rec.	Temp.	% Rec.	Temp.	% Rec.	Temp.	% Rec.	Temp.	% Rec.	Temp.	% Rec.	Temp.
1.0	128.5	1.1	117.0	1.0	111.0	1.0	272.7	1.0	108.1	1.2	83.9
4.2	219.0	5.1	196.4	5.5	186.6	5.4	329.8	5.5	199.1	4.4	190.8
9.6	255.2	10.7	255.9	10.9	239.5	10.1	354.2	10.5	253.6	10.2	268.5
20.3	309.5	20.6	315.5	19.7	277.3	19.3	386.8	19.7	308.2	20.6	355.9
30.4	345.7	29.2	345.2	29.8	307.5	29.1	411.3	31.0	353.6	30.2	404.4
40.0	372.9	41.8	384.9	39.3	337.8	41.8	435.8	39.1	380.9	41.2	443.3
50.0	400.0	51.8	414.7	49.8	360.5	52.2	460.2	50.9	417.3	50.3	472.4
60.1	427.2	61.0	444.5	59.1	383.1	61.5	484.7	59.4	444.6	59.2	501.5
71.3	463.4	70.9	484.2	70.4	413.4	72.1	517.3	69.3	480.9	71.2	540.4
81.0	508.6	80.4	533.8	81.5	451.2	80.1	549.9	80.9	535.5	81.1	579.2
90.5	572.0	90.7	613.2	90.3	504.1	90.4	607.0	90.4	599.2	91.2	637.5
95.3	626.3	95.1	682.7	95.2	557.0	95.4	664.1	95.1	653.7	95.9	686.1
99.1	753.0	99.0	841.5	99.1	655.3	99.1	827.2	99.1	781.0	99	763.8
99.5	798.2	99.6	901.0	99.5	700.6	99.5	884.3	99.6	835.6	99.6	802.6

DSCP-RW-6(05212015)		DSCP-RW-3(05212015)		DSCP-MW-65(05212015)		DSCP-RW-2(05212015)		DSCP-RW-1A(05212015)	
% Rec.	Temp.	% Rec.	Temp.	% Rec.	Temp.	% Rec.	Temp.	% Rec.	Temp.
1.1	154.0	1.1	130.1	1.2	93.2	1.1	121.6	1.1	124.1
5.5	300.6	5.1	195.9	5.6	169.7	5.2	242.2	5.1	232.6
10.6	361.0	10.6	245.2	10.1	230.8	10.3	302.6	10.8	281.9
21.0	421.4	20.4	294.5	19.6	276.7	20.7	362.9	20.6	341.1
31.4	455.9	30.5	327.4	29.5	307.3	30.3	393.0	30.5	380.5
41.0	481.7	40.1	352.1	39.2	337.9	42.0	423.2	41.6	420
51.7	507.6	50.3	376.7	49.1	360.8	50.1	443.3	50.3	449.5
62.4	533.5	60.5	401.4	61.8	391.4	61.5	473.4	59.7	479.1
71.6	559.4	71.8	434.3	70.2	414.3	70.4	503.6	71.7	518.6
80.1	585.2	81.0	475.4	80.6	452.5	81.3	543.8	81.2	558
90.1	628.4	90.7	549.3	90.0	513.7	90.7	594.0	90.1	607.3
95.0	662.9	95.3	606.9	95.1	574.9	95.6	644.3	95.1	666.5
99.1	740.5	99.0	738.4	99.1	689.6	99.1	764.9	99.1	844
99.5	783.6	99.5	787.7	99.6	735.4	99.5	815.1	99.5	913

PH-RW-A2(2017)		DSCP-RW-9(2017)		DSCP-RW-2(2017)		DSCP-MW-33(2017)		DSCP-MW-65(2017)		PH-RW-A(2017)	
% Rec.	Temp.	% Rec.	Temp.	% Rec.	Temp.	% Rec.	Temp.	% Rec.	Temp.	% Rec.	Temp.
1.07	117.79	0.87	120.59	1.26	134.48	0.84	104.21	1.03	119.60	1.24	101.20
5.74	170.48	5.01	167.30	4.94	235.49	5.03	144.65	5.04	174.48	5.27	137.64
10.34	231.96	9.62	232.69	10.78	306.20	10.03	174.98	9.44	238.50	9.85	164.96
21.34	293.44	20.15	307.43	19.22	356.71	20.27	245.76	21.07	302.52	20.47	246.94
29.93	319.79	31.39	354.14	29.21	397.11	28.90	286.21	31.26	339.10	30.22	292.49
42.85	354.92	39.63	382.16	41.04	437.51	39.09	316.54	40.00	357.39	39.51	319.82
50.98	372.48	49.69	410.19	51.04	467.82	48.32	346.87	51.56	384.83	49.05	347.14
62.38	398.83	60.75	438.22	61.17	498.12	59.47	377.21	59.59	403.12	61.77	374.47
71.70	425.18	70.23	466.24	72.31	528.42	69.42	407.54	70.06	430.56	71.45	401.80
79.64	451.52	79.27	503.61	81.35	558.73	79.90	447.98	80.49	467.14	80.31	429.12
90.44	513.00	90.91	578.35	90.55	599.13	89.76	508.65	90.42	531.16	90.05	483.78
95.31	565.70	95.30	634.40	95.15	639.54	95.22	569.32	95.42	586.03	95.38	547.54
99.02	662.30	98.99	765.19	99.07	740.55	99.04	680.54	98.99	686.63	99.01	656.85
99.54	706.22	99.54	811.90	99.55	780.95	99.55	741.20	99.51	732.36	99.55	711.50

Appendix M

Groundwater Monitoring
Analytical Data

(upon request)