AECOM Environment

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Farmington, CT

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July 2016

A&R BUILDING AREA AOC
UTC/CARRIER SITE
THOMPSON ROAD, SYRACUSE, NY
Sampling and Analysis Report

Corrective Action Order - Index CO 7-20051118-4

NYSDEC Site Registry #734043

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1.0 Introduction

1.1 Site Description

The United Technologies Corporation (UTC)/Carrier facility is located on Thompson Road in Syracuse, Onondaga County, New York (hereinafter referred to as the Site), as shown on **Figure 1**. The former Administration and Research (A&R) building Area of Concern (AOC), is located south of Sanders Creek in the northeastern portion of the Site. The AOC, totaling approximately 17 acres, is shown on **Figure 2**.

The A&R building was demolished sometime after 1995 and the area now consists of green space where the former administration building, research building, and adjacent parking areas were located. The AOC includes the associated storm sewer and a former pond area. The pond area is a former wide spot on the south side of Sanders Creek that was filled in in the 1980s. The AOC is bordered by Sanders Creek to the north, Kinne Street to the east, First Street to the south, and Telergy Parkway to the west.

1.2 Purpose of Investigation

Per the requirements of UTC's Corrective Action Order (CAO), a sampling and analysis program was developed to perform preliminary assessment of potential AOCs that includes historical research and field investigations capable of yielding representative samples sufficient to identify the presence/absence of contaminants in AOCs. The A&R AOC was identified in 2014 as part of the facility's routine State Pollutant Discharge Elimination System (SPDES) permit sampling. A water sample collected from the storm sewer system contained polychlorinated biphenyls (PCBs). The storm sewer collects groundwater from the A&R building area. The area was identified as potential AOC because it was unclear if groundwater beneath the A&R building is impacted and being collected by the storm sewer system, or if the detection of PCBs in the sewer was residuals from historical releases to the sewer system.

In addition to the A&R building area, the A&R AOC includes the former pond area on the south side of Sanders Creek located directly north of the A&R building. The pond area was backfilled in the 1980s. In 2014, a soil sample collected from the eastern end of the pond area also contained PCBs, albeit at concentrations well below state regulatory cleanup levels. The pond area was included in the A&R AOC because the source of the pond backfill was unknown.

A Sampling and Analysis Plan (SAP), dated July 2015, was prepared to perform an assessment of the A&R building AOC. The SAP identified site investigation activities to be performed to assess soil and groundwater in the A&R building area including the fill material from the pond area near Sanders Creek. The SAP was approved by the New York State Department of Environmental Conservation (NYSDEC) on March 18, 2016. NYSDEC's approval was contingent on the installation and sampling of two additional wells along the creek bank.

The assessment activities included in the SAP were:

- Collection of soil samples from eight soil borings to depths of 1 to 3 feet (ft) in the former pond area for laboratory analysis of volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs) and semi-volatile organic compounds (SVOCs);

- Collection of soil samples during the advancement of six soil borings in the former A&R building area;
- Completion of the six soil borings in the former A&R building area as monitoring wells;
- Collection of representative groundwater samples from the six new wells; and
- Analysis of soil and groundwater samples from the six borings/wells for VOCs and PCBs.

The assessment activities were completed in April 2016. This Sampling and Analysis Report presents the results of the investigation.

Note that research performed by UTC subsequent to NYSDEC approval of the SAP revealed information indicating that sediment in the pond area was impacted by oily wastes released from an upgradient, offsite source. The documentation also stated that the backfill used in the pond area was clean imported fill. Based on this information, UTC and NYSDEC agreed that the sampling plan in the pond area would be revised to focus on evaluating sediment beneath the fill. UTC also collected and analyzed two samples of the fill material to confirm that it was from a clean source.

2.0 Site History

The former A&R building included engineering offices, engineering laboratories and shops, and administrative offices. The A&R building was built in 1958 with two expansions (TR16 and 17) resulting in a building footprint area of approximately 150,000 square feet that was comprised of approximately 50% office space. The building was demolished sometime after 1995. **Figure 2** shows the layout of the former buildings as well as the existing underground sewer system associated with the A&R building area.

The AOC includes a former wide spot on the south side of Sanders Creek (herein referred to as the pond area) located directly north of the A&R building (see **Figure 2**). The pond area was apparently constructed circa 1958 for unknown reasons, possibly aesthetics, and was backfilled in the early 1980s.

There were no known historic spills or releases in the A&R building area; however, PCBs were detected in a 2014 stormwater sample collected as part of routine SPDES permit sampling at manhole 182 (MH-182, **Figure 2**). Manhole 182 is located in the northwestern corner of the area and is downstream of storm sewers that served the A&R building area. The analytical results were previously submitted to the NYSDEC as part of the SPDES permit reporting.

In 2014, as a measure to prevent surface water from contacting/mixing with potential subsurface groundwater and soil impacts, UTC plugged the storm sewer manholes and catch basins and placed a 2-ft soil cover over the entire area. The soil cover was constructed with a slight grade to the north to promote surface water runoff toward Sanders Creek. The outfall from manhole 182 was also plugged.

The storm sewer continues to collect water, believed to be infiltrating groundwater, which is now pumped to the wastewater treatment plant for treatment prior to discharging to Sanders Creek.

In 2014, a surface water leak was identified that appeared to be emanating from an old well located off the eastern side of the pond area (see **Figure 2**). The well was likely installed years ago and used as a source of make-up water for a decorative fountain that was formerly located in the pond. The surface water leak associated with this well was likely due to an artesian condition in the aquifer that supplied the well. When the well was abandoned in 2014, a pipe was discovered leading to the former pond area. As part of Carrier's well abandonment activities, Carrier plugged the end of the pipe at the former pond area. In addition, a soil sample was collected from the soil disturbed when the end of the pipe was uncovered. The soil sample contained PCBs at a concentration of 73 micrograms per kilogram (ug/kg), which is below the most stringent (unrestricted use) NYSDEC criteria of 100 ug/kg for PCBs.

2.1 Records Search

Subsequent to the NYSDEC approval of the SAP, plant records on the history of the pond dating back to 1965 were found. The records provided information on historic evidence of contamination of pond sediments as well as construction details for the pond closure in the mid 1980's.

Available documentation from 1965, several years after the pond was constructed, identified oil, sheen, and staining at the surface of the water and along the edge of the pond. This condition was reportedly more significant at times of low water elevation or after a high flow event. The source of

the contamination was determined to be from an upgradient, offsite source. Since Carrier could not control the flow from Sanders Creek, an engineering control was recommended to minimize inflow of oily water. A diversion chamber with a weir would allow the pond to receive water during peak flow and bypass flow around the pond during low flow periods. It appears that a nearby irrigation well (artesian well mentioned above in Section 2.0) would serve as a recharge source during bypass periods. Dredging the pond sediment was also recommended. It is unclear whether these recommendations were carried out; however, a weir in the pond outlet was mentioned in later construction documents.

Additional documentation from 1979 indicates that sedimentation within the pond was a maintenance concern. An engineering evaluation was completed, which assessed whether the pond should be periodically dredged and/or closed. Borings installed within the pond indicated that water was approximately 0.25 to 2 ft deep. Underlying sediment, described as soft with black color and petroleum odor, were 1 to 3 ft thick. Soil beneath the sediment was characterized as interbedded silt and clay with fine sand and some gravel.

Construction plans from 1983 indicate that the pond was filled and regraded using existing and imported fill. The work included excavation of the new channel and construction of a confining embankment. The plans indicate that geotextile filter fabric would be placed over sediment and then the embankment would receive a minimum of 12 inches of stone. A minimum of 3 inches of “Type E granular fill” would be placed over the geotextile fabric outside of the embankment. Type E fill from the 1980s is consistent with current NYSDOT specification of “select granular fill” or “select structural fill”. This fill consists of “rock, stone, slag, cobbles, or gravel, substantially free of shale or other soft, poor durability particles.” Sieve size requirements include 100% for 4-inch, 0-70% for No. 40 and 0-15% for No. 200.

A minimum of 4 inches of topsoil was placed over the stone in the embankment and the select granular fill elsewhere. The outlet structure weir was also modified.

3.0 Field Activities

A sampling and analysis program was executed to confirm the presence or absence of contamination in soil and groundwater within the A&R AOC. The investigation was performed during the period of April 4 to 18, 2016. The field activities included monitoring well installation and soil and groundwater sampling around the former A&R building as well as advancement of soil borings and collection and analysis of soil and groundwater samples in the pond area. Activities also included borehole pre-clearance, community air monitoring, decontamination, location/elevation surveying, and management of investigation-derived wastes (IDW).

Sampling and analysis was performed in accordance with the SAP and site-specific Quality Assurance Project Plan (QAPP). In general, sampling methods and disposable materials limited the need for decontamination of sampling equipment. Prior to commencement of intrusive sampling activities, DigSafely NY was notified for utility clearance. The facility also assessed the presence of buried utilities and each drilling location was pre-cleared by a utility locating subcontractor. Monitoring well borings were manually precleared to an approximate depth of 5 ft using hand augers. Drill cuttings, development water, decontamination water, and sampling tubing were drummed, labeled, and stored on-site pending analyses for offsite disposal. Monitoring well purge water was sent to the facility's waste water treatment plant for treatment.

The field investigation included the collection and analysis of soil and groundwater samples. Analytical parameters included VOCs, SVOCs, and PCBs for pond area soil samples and VOCs and PCBs for well boring and groundwater samples. **Table 1** presents the number of samples collected per media (i.e., soil and groundwater) as well as quality assurance/quality control (QA/QC) samples. **Table 2** provides a summary of the analytical methods, as well as bottle, preservation, and holding time requirements.

3.1 Drilling and Soil Sampling

Six soil borings were advanced around the perimeter of the former A&R building and converted into permanent monitoring wells (AR-MW-01 through AR-MW-06). Wells AR-MW-01, AR-MW-02, and AR-MW-03 were sited on the assumed downgradient (north) side of the former A&R building, and wells AR-MW-04, AR-MW-05, and AR-MW-06 were sited on the assumed upgradient (south) side of the building. In addition, two temporary wells (AR-SB-02 and AR-SB-04) were installed in the pond area at the request of the NYSDEC. The well locations are presented on **Figure 3**.

The permanent well borings were advanced into overburden soils during the period of April 4 through 7, 2016 using a truck-mounted Geoprobe combination direct-push/hollow stem auger rig (model 6712DT). Soil samples were continuously sampled using a 2-inch diameter by 4-ft long, acetate-lined sampler. Borings were advanced to a depth of 16 ft below ground surface (bgs).

The pond area soil borings were originally to be advanced to depths of 3 ft using a hand auger. However, the sampling technicians were unable to attain the 3 ft depth due to presence of an unexpectedly coarse gravel layer that contained gravel and cobbles up to 8 inches in size. Therefore, the former pond area borings were advanced using the same drilling method discussed above, but only to a depth of 6 ft, except boring AR-SB-05, which was advanced to a depth of 8 ft.

Upon recovery, the soil samples were inspected for evidence of contamination (e.g., staining and odors) and screened with a photoionization detector (PID) for VOCs. Borings were observed by an AECOM geologist and boring logs were created for each well location (see **Appendix A**).

The soil in the pond area generally consisted of 4 inches of topsoil over 1 to 2 ft of silt and gravel fill over a natural gray to black silt. Groundwater was encountered at depths ranging from approximately 1 to 2 ft bgs. No elevated PID readings were detected. However, petroleum odors were noted in five of the eight borings.

In the A&R building area, drilling observations indicate that this area is underlain by 4 to 9 ft of fill composed of clayey silt with varying amounts of gravel, some to trace cobbles, and debris consisting of brick, metal, and concrete. The fill is underlain by as much as 11 ft of silty clay with some sand and slit lenses that become more common with depth. The silty clay is underlain by a gray clay deposit. With the exception of the boring for well AR-MW-06, no elevated PID readings or evidence of contamination was found. In AR-MW-06, a slight petroleum odor was observed at a depth of 4 to 6 ft bgs.

A minimum of one soil sample above the water table was retained from each boring for laboratory analysis. The sample was selected from the interval of greatest apparent contamination. If no apparent contamination was present, the sample was retained from the interval just above the water table. Samples for VOCs were collected using TerraCore samplers. For the remaining analytical parameters, soil was homogenized, and then transferred into the appropriate sample containers.

3.2 Monitoring Well Installation, Development, and Sampling

The monitoring wells were installed during the period of April 4 through 7, 2016. The permanent monitoring wells were constructed with 10-ft long, 2-inch I.D. 10-slot, flush-coupled polyvinyl chloride (PVC) screen with a solid riser extending to the surface. To facilitate well installation, the boreholes were enlarged with 4-1/4-inch hollow stem augers. The wells were installed through the augers as the augers were slowly removed.

Groundwater was observed at 5.5 to 7 ft bgs; therefore, wells were screened from 4 to 14 ft bgs. A sand filter was placed in the boring around the annulus space of the well screen such that the sand extends 6 inches above the top of the screen. Bentonite chips were placed above the sand filter to provide a seal from the overlying overburden conditions. The monitoring wells were completed with a flush-mount road box set in concrete. Monitoring well construction logs are provided in **Appendix A** and well construction details are summarized in **Table 3**.

The temporary wells were constructed on April 7, 2016 using 5-ft long, 1-inch diameter 10-slot PVC well screen and solid riser. The wells were installed thought the Macrocore casing. Groundwater in the pond area was encountered at shallow depths ranging from 1 to 2 ft bgs. In order to provide an effective surface seal, the tops of the well screens were set to 1 ft bgs. A NJ #0 sand filter was placed in the annual space around the well and extended to approximately 0.5 foot above the screen and riser coupling. The remaining annual space was backfilled with bentonite chips. The well risers extended approximately 2 ft above grade.

The permanent monitoring wells were developed on April 11 and 12, 2016 by pumping to remove the fines and develop the filter pack. Because they were intended only for the collection of grab groundwater samples, the temporary wells were not developed. Water quality measurements of pH, conductivity, temperature, and turbidity were periodically recorded during the development process. Copies of well development logs are provided in **Appendix B.**

On April 18, 2016, groundwater samples were collected from the new permanent and temporary wells using the low-flow purge technique and a peristaltic pump. Water quality measurements of pH, conductivity, dissolved-oxygen, oxidation-reduction potential, temperature, and turbidity were frequently recorded during the purging process. Groundwater quality measurements were documented on AECOM purge logs which are provided in **Appendix C**.

3.3 Surveying

The soil boring and monitoring well locations were surveyed for location and elevation by a licensed AECOM land surveyor. Locations and elevations were measured to 0.01 ft. Location measurements were referenced to New York State Plane Central Zone North American Datum of 1983 (NAD 83) and elevations were referenced to North American Vertical Datum of 1988 (NAVD 88). Survey information is provided in **Table 3**.

3.4 Analytical Program

The soil and groundwater samples were placed in pre-cleaned, laboratory-supplied glass jars, labeled, packed in a cooler with ice, and transported via courier to Accutest Laboratories under standard chain of custody procedures. The samples were submitted for analytical testing for the parameters listed in **Table 1** under standard turnaround time. Category B deliverable packages were requested for all sample delivery groups.

4.0 Investigation Results

4.1 Field Screening Results

4.1.1 Soil Observations

Drilling observations show that the former pond area is underlain by topsoil and as much as 2 ft of silty gravel fill with some cobbles up to 8 inches in size. The fill overlies gray to black silt (sediment). No elevated PID readings were observed, but petroleum odors were noted in the silt, which was encountered in several borings. Groundwater occurs at depths ranging from 1 to 2 ft bgs. Two of the borings in the Pond Area were completed as temporary monitoring wells.

The A&R building area is underlain by as much as 9 ft of fill consisting of clayey silt with varying amounts of gravel and some to trace amounts of cobbles, brick, metal, and concrete. No evidence of contamination was observed, with the exception of slight petroleum odor in the 4 to 6-ft depth interval in the boring for AR-MW-06. Groundwater was encountered at depths ranging from 5.5 to 7 ft bgs. The six borings were completed as monitoring wells.

4.1.2 Groundwater Observations

The depth to groundwater in the permanent wells ranged from approximately 3.28 to 9.15 ft bgs. The depth to groundwater in the temporary wells was 2.02 ft bgs in AR-SB-02 and 1.87 ft bgs in AR-SB-04.

Prior to sampling, a synoptic round of groundwater levels was recorded on April 18, 2016 using a water interface probe (see **Figure 4 and Table 4**). Another synoptic round of groundwater levels was recorded on July 6, 2016. The data from both monitoring rounds indicate somewhat anomalous flow conditions that are not consistent with the general northerly flow observed at the site. UTC will continue to monitor groundwater flow conditions in this area as proposed wells are installed across the site.

4.2 Laboratory Analytical Results

The analytical results were validated by an AECOM chemist following USEPA Region II data validation procedures. The validated data is provided in a data usability summary report (DUSR). A copy of the DUSR narrative is provided in **Appendix D. A copy of the DUSR appendices is available on request.**

Field and laboratory QC samples were collected and analyzed to document the accuracy and precision of the samples, in general accordance with the QAPP. The QA/QC samples included trip blanks, field duplicates, matrix spikes, and matrix spike duplicates.

The DUSR presents deviations from the relevant QC requirements and the associated qualifications to the sample data warranted by these deviations. QC issues discussed in detail in the DUSR include surrogate sample recoveries, matrix spike recoveries, duplicate sample analyses, instrument calibration and performance and method and field blank sample analyses. The report also presents copies of the laboratory reporting forms with hand written qualifications made by the data reviewer. The data presented in the summary tables included in this report reflect these qualifications.

4.2.1 Applicable Standards, Criteria, and Guidance

Analytical results for soil are compared to three sets of Soil Cleanup Objectives (SCOs) presented in 6 NYCRR Part 375-6.8b SCOs: protection of ecological resources, residential use, and industrial use. The application of the criteria is dependent upon the location of the samples. The ecological SCOs are applied to pond area samples. Because portions of the pond area extend offsite onto NYSDOT property, residential use SCOs are also applied. Finally, industrial use SCOs are applied to soils collected from the well borings in the former A&R building area.

The groundwater evaluation is based on comparison of the sample results with the NYS Ambient Water Quality Standards (AWQS) and Guidance Values in Technical & Operational Guidance Series (TOGS) Version 1.1.1., June 1998, with June 2004 Addendum.

4.2.2 Soil Results

4.2.2.1 Pond Area Soil Results

Ten soil samples were collected from the eight shallow soil borings in the pond area. The initial intent of the sampling program was to characterize the fill material. However, following the discovery of documentation identifying contaminant conditions on the former pond sediments and that clean fill was used during pond closure, the sampling approach was changed such that eight samples collected from the sediment and two samples (plus one duplicate sample) were collected from the fill material. The samples were analyzed for VOCs, SVOCs, and PCBs.

The fill samples were collected from the 0.5- to 1.5-ft interval in borings AR-SB-02 and AR-SB-08. The analytical results, presented in **Table 5** and **Figure 5**, are compared to the protection of ecological resources and residential use SCOs. The results indicate that there were no compounds detected at concentrations above the ecological SCOs. However, the samples did contain several SVOCs at concentrations slightly above the residential use SCOs.

Eight samples were collected from the sediment below the fill material. The sample intervals ranged from 2.5 to 5 ft bgs. The analytical results, presented in **Table 5** and **Figure 5**, are compared to both protection of ecological resource and residential use SCOs. No VOCs were detected at concentrations above the protection of ecological resource or residential use SCOs.

No SVOCs were detected at concentrations exceeding the protection of ecological resource SCOs. SVOCs were detected at concentrations above the residential SCOs in two samples: AR-SB-05 and AR-SB-06.

- Only one SVOC, chrysene, was detected at a concentration above the SCO in AR-SB-05. In the sample, chrysene was detected at 1,080 ug/kg, compared to the SCO of 1,000 ug/kg.
- In AR-SB-06, benzo(a)pyrene, benzo(b)fluoranthene and indeno(1,2,3-cd)pyrene were detected at concentrations above the residential SCOs. Benzo(a)pyrene was detected at a concentration of 1,790 ug/kg and benzo(b)fluoranthene was detected at 2,060 ug/kg. The SCO for both compounds is 1,000 ug/kg. Indeno(1,2-cd)pyrene was detected at 2,870 ug/kg, compared to the SCO of 500 ug/kg.

PCBs were detected at concentrations slightly above the protection of ecological resource and residential SCOs of 1,000 ug/kg in four samples – AR-SB-04, AR-SB-05, AR-SB-06 and SB-AR-08. The total PCB concentrations in the samples ranged from 1,479 to 2,721 ug/kg.

4.2.2.2 *A&R Building Area Soil Results*

Six soil samples (plus one duplicate sample) were collected from the six A&R building area well borings – one from each boring. The samples were analyzed for VOCs and PCBs. The analytical results, presented in **Table 6**, are compared to industrial use SCOs. The results indicate that none of the samples exceeded the industrial use SCOs.

4.2.3 Groundwater Results

4.2.3.1 *Pond Area Groundwater Results*

Groundwater samples were collected from the two temporary wells installed in the pond area (AR-SB-02 and AR-SB-04). The samples were analyzed for VOCs, SVOCs, and total and dissolved PCBs. None of the compounds were detected at concentrations above the groundwater criteria.

4.2.3.2 *A&R Building Area Groundwater Results*

Groundwater samples were collected from the six permanent wells in the A&R building area. The samples were analyzed for VOCs and total and dissolved PCBs. The analytical results are presented in **Table 7** and **Figure 6**. Only one well, AR-MW-06, contained compounds at concentrations above the groundwater criteria. In AR-MW-06, four VOCs exceeded the groundwater criteria. Well AR-MW-06 is located on the southeast side of the former A&R building.

5.0 Summary and Conclusions

The following conclusions are drawn based on data collected during the preliminary assessment of the former A&R building area AOC.

5.1 Former Pond Area

Eight shallow soil borings were advanced to better characterize the former pond area. Two of the borings were completed as temporary monitoring wells. Observations made during drilling confirmed the presence of coarse gravel fill placed above impacted pond sediments. The thickness of the fill ranged from 1 to 2 ft. The fill is covered with 4 inches of topsoil.

The sediment underlying the fill consists of gray to black silt. Although no elevated PID readings were recorded, petroleum odors were noted in five of the borings and a sheen was observed in one boring. These observations are consistent with the oil, sheen, and staining observed at the surface of the water and along the edge of the pond in 1965 up through closure in the mid 1980‘s. The petroleum odors were observed in four of the five shallow soil borings adjacent to Sanders Creek and one boring near the southern end of the pond area.

Analytical results for the shallow soil samples, representative of the gravel fill in borings AR-SB-02 and AR-SB-08, did not contain any of the analyzed compounds (i.e., VOCs, SVOCs, or PCBs) at concentrations exceeding the protection of ecological resources SCOs. However, several SVOCs were detected in the samples at concentrations slightly exceeding the residential use SCOs. Historical documentation states that clean fill was used to backfill the pond area more than 30 years ago. SVOCs may be attributable to partial combustion of carbon-based fuels and as a result, are common contaminants. Specifically, the compounds detected above criteria are polycyclic aromatic hydrocarbons (PAHs) which are commonly associated with asphaltic products and runoff from roadways and parking lots. Such compounds are widespread in urban areas.

The samples from the underlying silt were analyzed for VOCs, SVOCs, and PCBs and the results were compared to protection of ecological resource and residential use SCOs. No VOCs exceeded the ecological or residential SCOs. No SVOCs exceeded the ecological SCOs, but some SVOCs slightly exceeded residential SCOs, but only in two samples.

PCBs slightly exceeded the ecological and residential use SCO in four of the eight borings.

The former pond area has historic sediment that was contaminated from offsite sources and some of the fill may have been impacted by SVOCs emissions and/or runoff from adjacent roadways and parking lots. The impacted materials are contained under a soil cap and isolated from Sanders Creek by a stone berm that protects against erosion. The stone berm remains intact and this containment has been effective for over 30 years.

No VOCs or PCBs were detected at concentrations exceeding the groundwater criteria in the samples from the two temporary wells. While PCBs were detected in the soils from one of the temporary well borings, they were not detected in the groundwater samples. This is consistent with PCBs having low aqueous solubilities and, therefore, typically do not migrate in the dissolve phase.

5.2 A&R Building Area

Six borings were advanced to depths of 16 ft each in the former A&R building area. The borings were completed as monitoring wells. Observations made during drilling indicate that the area is underlain by as much as 9 ft of fill composed of silty clay with varying amounts of gravel, cobbles, brick, metal, and concrete. The fill is underlain by natural deposits of silty clay with silty and sand lenses. No evidence of contamination was observed during drilling.

The A&R building area showed no exceedences of soil criteria and only limited VOC impacts to groundwater at one of the six wells. PCBs were essentially non-detect in soils and groundwater.

6.0 Recommendations

6.1 Pond Area

The investigation in the pond area identified minor SVOC and PCBs impacts in subsurface soil. The existing embankment is preventing erosion and effectively containing the impacted soil. Based on this assessment, no further action is warranted.

6.2 A&R Building Area

The groundwater results for the A&R building area identified VOC impacts in one of the six wells. While the impacts appear minor and localized, this area should be addressed as part of the planned site-wide groundwater assessment.

Tables

Table 1
Laboratory Analyses
UTC/Carrier A&R Building AOC

MATRIX/ANALYSIS	Analytical Method	Field Sample Quantity	Matrix Spike (MS) or LCS	MS Duplicate or Matrix Duplicate	Field Duplicate	Equipment/ Field Blank	Trip Blank	Total Analyses
Soil Boring Samples								
Volatile Organics	SW-846 8260C	10	1	1	1	1	0	14
Semivolatile Organics	SW-846 8270D	10	1	1	1	1	0	14
PCBs	SW-846 8082A	10	1	1	1	1	0	14
Well Boring Soil Samples								
Volatile Organics	SW-846 8260C	6	1	1	1	1	0	10
PCBs	SW-846 8082A	6	1	1	1	1	0	10
Groundwater Samples								
Volatile Organics	SW-846 8260C	8	1	1	1	1	1	13
PCBs	SW-846 8082A	8	1	1	1	1	0	12

Notes:

PCBs = Polychlorinated Biphenyls

LCS = Laboratory Control Sample

Table 2
Sample Bottle, Volume, Preservation, and Holding Time Summary
UTC/Carrier A&R Building AOC

MATRIX/ANALYSIS	Sample Prep Method (1)	Analytical Method (1)	Sample Bottles		Preservation	Holding Time	
			Mat'l	Size		Extraction	Analysis
Soil Samples							
Volatile Organics	SW-846 5035A	SW-846 8260C	TerraCore	5 or 25 g	None	NA	48 hours
Semivolatile Organics	SW-846 3540C/3541/3545A	SW-846 8270D	G	8 oz (6)	None	14 days	40 days from extraction
Polychlorinated Biphenyls	SW-846 3540C/3541/3545A	SW-846 8082A	G	"	None	14 days	40 days from extraction
Groundwater Samples							
Volatile Organics	SW-846 5030B	SW-846 8260C	G	40 mL VOA vial w/ septa	HCl to pH<2	NA	14 days
Polychlorinated Biphenyls	SW-846 3510C/3520C	SW-846 8082A	G	1-L amber	None	7 days	40 days from extraction

Notes:

(1) SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. USEPA SW-846. Complete through Update IV, March 2009.

TABLE 3
Soil Boring and Monitoring Well Details
A&R Building Area

Monitoring Well	Date Installed	Coordinates N	Coordinates E	Surface Elevation (ft)	Total Depth (ft bgs)	Hole Diameter (inches)	Well Diameter (inches)	Top of Casing Elevation (ft)	Screen Interval (ft bgs)	Screen Interval (Elevations)	Protective Casing	Depth to Water* (ft bgs)
AR-MW-01	4/4/16	1124770.59	954418.68	404.06	16.0	8	2	403.76	5.0 - 15.0	399.1 - 389.1	Flushmount	3.84
AR-MW-02	4/5/16	1124764.40	954292.16	403.76	16.0	8	2	403.40	4.0 - 14.0	399.8 - 389.8	Flushmount	3.38
AR-MW-03	4/5/16	1124754.76	954149.74	403.68	16.0	8	2	403.41	4.0 - 14.0	399.7 - 389.7	Flushmount	3.28
AR-MW-04	4/6/16	1124515.46	954180.87	404.94	16.0	8	2	404.50	4.0 - 14.0	400.9 - 390.9	Flushmount	8.33
AR-MW-05	4/6/16	1124466.37	954310.19	405.22	16.0	8	2	404.87	4.0 - 14.0	401.2 - 391.2	Flushmount	5.45
AR-MW-06	4/7/16	1124531.93	954445.06	404.96	16.0	8	2	404.63	4.0 - 14.0	401.0 - 391.0	Flushmount	9.15
AR-SB-01	4/7/16	1124960.20	954074.55	393.40	6.0	NA	NA	NA	NA	NA	NA	NA
AR-SB-02	4/7/16	1124990.14	954142.62	393.74	6.0	2	1	396.19	1.0 - 5.0	392.7 - 388.7	Stickup	4.47
AR-SB-03	4/7/16	1125021.01	954220.42	393.78	6.0	NA	NA	NA	NA	NA	NA	NA
AR-SB-04	4/7/16	1125037.71	954296.60	394.05	6.0	2	1	395.86	1.0 - 5.0	393.1 - 389.1	Stickup	3.68
AR-SB-05	4/7/16	1125052.57	954388.90	394.28	8.0	NA	NA	NA	NA	NA	NA	NA
AR-SB-06	4/7/16	1124954.21	954154.59	393.85	4.0	NA	NA	NA	NA	NA	NA	NA
AR-SB-07	4/7/16	1124960.18	954249.12	393.92	6.0	NA	NA	NA	NA	NA	NA	NA
AR-SB-08	4/7/16	1124981.64	954325.09	393.76	6.0	NA	NA	NA	NA	NA	NA	NA

Notes
1. Horizontal grid based on New York State Plane Central Zone (NAD 83).
2. Vertical datum NAVD 88.
NA = Not Applicable
* - Depth to water measured on April 18, 2016

Table 4

Groundwater Level Measurements

UTC/Carrier A&R Building AOC

Location ID	Northing	Easting	Ground Elevation (ft)	Casing Elevation (ft)	Meas.point (Riser)Elev.(ft)	Date	Depth to Water (ft)	Water Elev. (ft)
AR-MW-01	1124770.587	954418.6790	404.060	404.060	403.760	4/11/2016	4.25	399.51
						4/18/2016	3.84	399.92
						7/6/2016	7.60	396.16
AR-MW-02	1124764.403	954292.1619	403.760	403.760	403.400	4/11/2016	3.15	400.25
						4/18/2016	3.38	400.02
						7/6/2016	6.86	396.54
AR-MW-03	1124754.760	954149.7443	403.680	403.680	403.410	4/12/2016	3.60	399.81
						4/18/2016	3.28	400.13
						7/6/2016	6.83	396.58
AR-MW-04	1124515.463	954180.8719	404.940	404.940	404.500	4/12/2016	6.65	397.85
						4/18/2016	8.33	396.17
						7/6/2016	9.88	394.62
AR-MW-05	1124466.368	954310.1939	405.220	405.220	404.870	4/12/2016	7.40	397.47
						4/18/2016	8.45	396.42
						7/6/2016	9.81	395.06
AR-MW-06	1124531.931	954445.0592	404.960	404.960	404.630	4/12/2016	8.75	395.88
						4/18/2016	9.15	395.48
						7/6/2016	10.09	394.54
AR-SB-02	1124990.137	954142.6139	393.735	393.735	396.187	4/18/2016	4.47	391.72
AR-SB-04	1125037.708	954296.6028	394.046	394.046	395.860	4/18/2016	3.68	392.18

TABLE 5
SOIL ANALYTICAL RESULTS
FORMER POND AREA
ECOLOGICAL AND RESIDENTIAL USE CRITERIA

Location ID				AR-SB-01	AR-SB-02	AR-SB-02	AR-SB-03	AR-SB-04
Sample ID				AR-SB-01(3.5-4)	AR-SB-02(4-4.5)	AR-SB-02(0.5-1.5)	AR-SB-03(3.8-4.3)	AR-SB-04(2.5-4)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.0	4.0-4.5	0.5-1.5	3.8-4.3	2.5-4.0
Date Sampled				04/07/16	04/07/16	04/11/16	04/07/16	04/07/16
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
Acetone	UG/KG	2200	100000	543	267	228 J	361	15 U
Benzene	UG/KG	70000	2900	0.77 U	0.41 J	0.86	0.64 U	0.75 U
Carbon disulfide	UG/KG	-	-	55.6 J	30.4 J	14.6 J	45.9 J	42.2 J
Chlorobenzene	UG/KG	40000	100000	3.1 U	2.1 U	3.1 U	2.6 U	3 U
Methyl ethyl ketone (2-Butanone)	UG/KG	100000	-	54.9	31.5	16 UJ	33.6	51.3
Methylene chloride	UG/KG	12000	51000	3.1 U	2.1 U	3.1 U	2.6 U	3 U
Toluene	UG/KG	36000	100000	7.7 U	0.56 J	7.8 U	6.4 U	7.5 U
Xylene (total)	UG/KG	260	100000	3.1 U	2.1 U	3.1 U	2.6 U	3 U
Semivolatile Organic Compounds								
Acenaphthene	UG/KG	20000	100000	31.4 J	120 U	36.6 J	140 U	63.5 J
Acenaphthylene	UG/KG	NS	100000	150 U	120 U	47.2 J	140 U	89.8 J
Anthracene	UG/KG	NS	100000	150 U	120 U	134	140 U	247
Benzo(a)anthracene	UG/KG	NS	1000	107 J	120 U	966	66.9 J	588
Benzo(a)pyrene	UG/KG	2600	1000	112 J	120 U	1,340	68.8 J	554
Benzo(b)fluoranthene	UG/KG	NS	1000	141 J	120 U	1,740	74.4 J	607
Benzo(g,h,i)perylene	UG/KG	NS	100000	90.3 J	120 U	1,210	50.7 J	360
Benzo(k)fluoranthene	UG/KG	NS	1000	118 J	120 U	1,020	66.2 J	476
bis(2-Ethylhexyl)phthalate	UG/KG	-	-	286 J	310 U	85.0 J	91.3 J	867
Carbazole	UG/KG	-	-	150 U	120 U	122 J	140 U	150 U
Chrysene	UG/KG	NS	1000	164	120 U	1,470	79.1 J	726

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Ecological Resources.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Residential.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

J - The reported concentration is an estimated value.
U - Not detected above the reported quantitation limit.
NS - Not Specified

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 5
SOIL ANALYTICAL RESULTS
FORMER POND AREA
ECOLOGICAL AND RESIDENTIAL USE CRITERIA

Location ID				AR-SB-01	AR-SB-02	AR-SB-02	AR-SB-03	AR-SB-04
Sample ID				AR-SB-01(3.5-4)	AR-SB-02(4-4.5)	AR-SB-02(0.5-1.5)	AR-SB-03(3.8-4.3)	AR-SB-04(2.5-4)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				3.5-4.0	4.0-4.5	0.5-1.5	3.8-4.3	2.5-4.0
Date Sampled				04/07/16	04/07/16	04/11/16	04/07/16	04/07/16
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Dibenz(a,h)anthracene	UG/KG	NS	330	31.4 J	120 U	355	140 U	126 J
Dibenzofuran	UG/KG	NS	14000	150 U	120 U	22.4 J	140 U	49.5 J
Fluoranthene	UG/KG	NS	100000	321	120 U	2,350	219	1,600
Fluorene	UG/KG	30000	100000	24.1 J	120 U	39.5 J	140 U	136 J
Indeno(1,2,3-cd)pyrene	UG/KG	NS	500	78.9 J	120 U	1,030	46.0 J	341
Naphthalene	UG/KG	NS	100000	150 U	120 U	25.1 J	140 U	150 U
Phenanthrene	UG/KG	NS	100000	118 J	120 U	738	39.9 J	664
Pyrene	UG/KG	NS	100000	275	120 U	1,910	189	1,120
Polychlorinated Biphenyls								
Aroclor 1248	UG/KG	-	-	154 J	40 U	41 U	73.2 J	749 J
Aroclor 1254	UG/KG	-	-	281	40 U	50.5 J	133	1,340
Aroclor 1260	UG/KG	-	-	73.2 J	40 U	84.3	52.9 J	632 J
Total Polychlorinated Biphenyls	UG/KG	1000	1000	508.2 J	40 U	134.8 J	259.1 J	2,721 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Ecological Resources.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Residential.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

J - The reported concentration is an estimated value.
U - Not detected above the reported quantitation limit.
NS - Not Specified

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 5
SOIL ANALYTICAL RESULTS
FORMER POND AREA
ECOLOGICAL AND RESIDENTIAL USE CRITERIA

Location ID				AR-SB-05	AR-SB-06	AR-SB-07	AR-SB-08	AR-SB-08
Sample ID				AR-SB-05(4.2-5)	AR-SB-06-3-4	AR-SB-07(3-4)	AR-SB-08(2.5-4)	AR-SB-08(0.5-1.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.2-5.0	3.0-4.0	3.0-4.0	2.5-4.0	0.5-1.5
Date Sampled				04/07/16	04/04/16	04/07/16	04/07/16	04/11/16
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Volatile Organic Compounds								
Acetone	UG/KG	2200	100000	1,220 J	1,900 UR	614	1,710 J	389 J
Benzene	UG/KG	70000	2900	0.96 J	2.3 J	0.86 U	0.93 U	1.1
Carbon disulfide	UG/KG	-	-	67.7 J	298 J	32.9 J	47.5 j	25.6
Chlorobenzene	UG/KG	40000	100000	3.3 UJ	5.8 U	3.5 U	3.7 U	0.59 J
Methyl ethyl ketone (2-Butanone)	UG/KG	100000	-	143 J	315 J	63.2	223	24 U
Methylene chloride	UG/KG	12000	51000	3.3 U	1.7 J	3.5 U	0.82 J	2.4 U
Toluene	UG/KG	36000	100000	1.8 J	3.9 J	8.6 U	0.92 J	1.2 J
Xylene (total)	UG/KG	260	100000	3.3 UJ	1.3 J	3.5 U	0.91 J	1.9 J
Semivolatile Organic Compounds								
Acenaphthene	UG/KG	20000	100000	155 J	1,400 U	150 U	33.1 J	27.5 J
Acenaphthylene	UG/KG	NS	100000	280 U	1,400 U	150 U	150 U	53.9 J
Anthracene	UG/KG	NS	100000	280 U	205 J	29.3 J	80.3 J	109 J
Benzo(a)anthracene	UG/KG	NS	1000	677	600 J	99.1 J	249	784
Benzo(a)pyrene	UG/KG	2600	1000	638	1,790	119 J	247	1,130
Benzo(b)fluoranthene	UG/KG	NS	1000	874	2,060	134 J	337	1,300
Benzo(g,h,i)perylene	UG/KG	NS	100000	505	629 J	92.1 J	190	1,020
Benzo(k)fluoranthene	UG/KG	NS	1000	562	748 J	105 J	229	1,010
bis(2-Ethylhexyl)phthalate	UG/KG	-	-	710 U	3,470 J	304 J	295 J	62.4 J
Carbazole	UG/KG	-	-	280 U	1,400 U	150 U	150 U	93.5 J
Chrysene	UG/KG	NS	1000	1,080	974 J	153	397	1,190

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Ecological Resources.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Residential.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

J - The reported concentration is an estimated value.
U - Not detected above the reported quantitation limit.
NS - Not Specified

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 5
SOIL ANALYTICAL RESULTS
FORMER POND AREA
ECOLOGICAL AND RESIDENTIAL USE CRITERIA

Location ID				AR-SB-05	AR-SB-06	AR-SB-07	AR-SB-08	AR-SB-08
Sample ID				AR-SB-05(4.2-5)	AR-SB-06-3-4	AR-SB-07(3-4)	AR-SB-08(2.5-4)	AR-SB-08(0.5-1.5)
Matrix				Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)				4.2-5.0	3.0-4.0	3.0-4.0	2.5-4.0	0.5-1.5
Date Sampled				04/07/16	04/04/16	04/07/16	04/07/16	04/11/16
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**					
Semivolatile Organic Compounds								
Dibenz(a,h)anthracene	UG/KG	NS	330	157 J	1,400 U	150 U	57.3 J	298
Dibenzofuran	UG/KG	NS	14000	280 U	1,400 U	150 U	150 U	130 U
Fluoranthene	UG/KG	NS	100000	280 U	1,960	280	780	1,830
Fluorene	UG/KG	30000	100000	280 U	1,400 U	150 U	150 U	29.7 J
Indeno(1,2,3-cd)pyrene	UG/KG	NS	500	425	2,870	77.8 J	158	880
Naphthalene	UG/KG	NS	100000	280 U	1,400 U	150 U	150 U	28.1 J
Phenanthrene	UG/KG	NS	100000	280 U	406 J	54.3 J	134 J	522
Pyrene	UG/KG	NS	100000	1,730	1,680	243	646	1,470
Polychlorinated Biphenyls								
Aroclor 1248	UG/KG	-	-	388 J	577 J	128 J	464 J	43 U
Aroclor 1254	UG/KG	-	-	747	1,080	140 J	861 J	60.5 J
Aroclor 1260	UG/KG	-	-	380 J	560 J	42.2 J	154 J	92.3
Total Polychlorinated Biphenyls	UG/KG	1000	1000	1,515 J	2,217 J	310.2 J	1,479 J	152.8 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Ecological Resources.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Residential.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

J - The reported concentration is an estimated value.
U - Not detected above the reported quantitation limit.
NS - Not Specified

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 5
SOIL ANALYTICAL RESULTS
FORMER POND AREA
ECOLOGICAL AND RESIDENTIAL USE CRITERIA

Location ID				AR-SB-08
Sample ID				AR-SB-08(0.5-1.5)DUP
Matrix				Soil
Depth Interval (ft)				0.5-1.5
Date Sampled				04/11/16
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	Field Duplicate (1-1)
Volatile Organic Compounds				
Acetone	UG/KG	2200	100000	731 J
Benzene	UG/KG	70000	2900	2.3
Carbon disulfide	UG/KG	-	-	61.2 J
Chlorobenzene	UG/KG	40000	100000	2.8 U
Methyl ethyl ketone (2-Butanone)	UG/KG	100000	-	14 U
Methylene chloride	UG/KG	12000	51000	1.3 J
Toluene	UG/KG	36000	100000	2.2 J
Xylene (total)	UG/KG	260	100000	0.69 J
Semivolatile Organic Compounds				
Acenaphthene	UG/KG	20000	100000	33.8 J
Acenaphthylene	UG/KG	NS	100000	24.0 J
Anthracene	UG/KG	NS	100000	117 J
Benzo(a)anthracene	UG/KG	NS	1000	895
Benzo(a)pyrene	UG/KG	2600	1000	1,260
Benzo(b)fluoranthene	UG/KG	NS	1000	1,730
Benzo(g,h,i)perylene	UG/KG	NS	100000	1,120
Benzo(k)fluoranthene	UG/KG	NS	1000	898
bis(2-Ethylhexyl)phthalate	UG/KG	-	-	66.2 J
Carbazole	UG/KG	-	-	120 J
Chrysene	UG/KG	NS	1000	1,360

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Ecological Resources.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Residential.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

J - The reported concentration is an estimated value.
U - Not detected above the reported quantitation limit.
NS - Not Specified

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 5
SOIL ANALYTICAL RESULTS
FORMER POND AREA
ECOLOGICAL AND RESIDENTIAL USE CRITERIA

Location ID				AR-SB-08
Sample ID				AR-SB-08(0.5-1.5)DUP
Matrix				Soil
Depth Interval (ft)				0.5-1.5
Date Sampled				04/11/16
Parameter	**Units**	**Criteria (1)**	**Criteria (2)**	Field Duplicate (1-1)
Semivolatile Organic Compounds				
Dibenz(a,h)anthracene	UG/KG	NS	330	330
Dibenzofuran	UG/KG	NS	14000	22.5 J
Fluoranthene	UG/KG	NS	100000	2,180
Fluorene	UG/KG	30000	100000	36.1 J
Indeno(1,2,3-cd)pyrene	UG/KG	NS	500	965
Naphthalene	UG/KG	NS	100000	24.3 J
Phenanthrene	UG/KG	NS	100000	664
Pyrene	UG/KG	NS	100000	1,810
Polychlorinated Biphenyls				
Aroclor 1248	UG/KG	-	-	44 U
Aroclor 1254	UG/KG	-	-	54.2 J
Aroclor 1260	UG/KG	-	-	70.4
Total Polychlorinated Biphenyls	UG/KG	1000	1000	124.6 J

Criteria (1)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Ecological Resources.

Criteria (2)- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Residential.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria (1)

Concentration Exceeds Criteria (2)

J - The reported concentration is an estimated value.
U - Not detected above the reported quantitation limit.
NS - Not Specified

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 6
SOIL ANALYTICAL RESULTS
A&R BUILDING AREA
INDUSTRIAL USE CRITERIA

Location ID			AR-MW-01	AR-MW-02	AR-MW-02	AR-MW-03	AR-MW-04
Sample ID			AR-MW-01-6-7	AR-MW-02-4.5-5.5	FD-040416	AR-MW-03-5-6	AR-MW-04-5-6
Matrix			Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)			6.0-7.0	4.5-5.5	4.5-5.5	5.0-6.0	5.0-6.0
Date Sampled			04/04/16	04/04/16	04/04/16	04/05/16	04/06/16
Parameter	**Units**	**Criteria***			Field Duplicate (1-1)		
Volatile Organic Compounds							
Acetone	UG/KG	1.00E+06	10 UJ	23.6 J	26.4 J	176 J	180 J
Benzene	UG/KG	89000	0.52 U	0.47 U	0.45 U	0.59	1.2
Carbon disulfide	UG/KG	-	5.2 U	4.7 U	4.5 U	5 U	5.6 UJ
Methylene chloride	UG/KG	1.00E+06	2.1 U	0.50 J	1.8 U	0.82 J	1.3 J
Toluene	UG/KG	1.00E+06	5.2 U	4.7 U	4.5 U	0.49 J	0.67 J
Polychlorinated Biphenyls							
Aroclor 1260	UG/KG	-	40 U	24.3 J	35 U	40 U	34 U
Total Polychlorinated Biphenyls	UG/KG	25000	40 U	24.3 J	35 U	40 U	34 U

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Industrial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Not detected above the reported quantitation limit.

J - The reported concentration is an estimated value.

UJ - Not detected. The reported quantitation limit is an estimated value.

Only Detected Results Reported.

Detection Limits shown are PQL

#Error

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[SITE KEY] = 3 AND ([MATRIX] = 'SE' OR [MATRIX] = 'SO') AND [LOCID] like '*mw*' AND [PRCCODE] <> 'SVO

TABLE 6
SOIL ANALYTICAL RESULTS
A&R BUILDING AREA
INDUSTRIAL USE CRITERIA

Location ID			AR-MW-05	AR-MW-06
Sample ID			AR-MW-05-5-7	AR-MW-06(5-6)
Matrix			Soil	Soil
Depth Interval (ft)			5.0-7.0	5.0-6.0
Date Sampled			04/06/16	04/07/16
Parameter	**Units**	**Criteria***		
Volatile Organic Compounds				
Acetone	UG/KG	1.00E+06	60.4 J	77.4 J
Benzene	UG/KG	89000	0.55 U	0.47 J
Carbon disulfide	UG/KG	-	2.5 J	0.96 J
Methylene chloride	UG/KG	1.00E+06	0.79 J	0.47 J
Toluene	UG/KG	1.00E+06	5.5 U	0.45 J
Polychlorinated Biphenyls				
Aroclor 1260	UG/KG	-	43 U	39 U
Total Polychlorinated Biphenyls	UG/KG	25000	43 U	39 U

*Criteria- 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Industrial.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Not detected above the reported quantitation limit.

J - The reported concentration is an estimated value.

UJ - Not detected. The reported quantitation limit is an estimated value.

Only Detected Results Reported.

Detection Limits shown are PQL

TABLE 7
GROUNDWATER ANALYTICAL RESULTS
A&R BUILDING AREA

Location ID			AR-MW-01	AR-MW-02	AR-MW-03	AR-MW-04	AR-MW-05
Sample ID			AR-MW01	AR-MW02	AR-MW03	AR-MW04	AR-MW05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/18/16	04/18/16	04/18/16	04/18/16	04/18/16
Parameter	**Units**	**Criteria***					
Volatile Organic Compounds							
1,1,1-Trichloroethane	UG/L	5	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
1,1,2-Trichloroethane	UG/L	1	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	UG/L	5	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	UG/L	5	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	UG/L	0.6	1 UJ	1 UJ	1 UJ	1 UJ	1 U
1,2-Dichloroethene (cis)	UG/L	5	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (trans)	UG/L	5	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	UG/L	1	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropene (cis)	UG/L	0.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropene (trans)	UG/L	0.4	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U
2-Hexanone	UG/L	50	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	UG/L	-	5 U	5 U	5 U	5 U	5 U
Acetone	UG/L	50	R	R	R	R	R
Benzene	UG/L	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	UG/L	50	1 U	1 U	1 U	1 U	1 U
Bromoform	UG/L	50	1 U	1 U	1 U	1 U	1 U
Bromomethane	UG/L	5	2 UJ	2 UJ	2 UJ	2 UJ	2 U
Carbon disulfide	UG/L	60	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	UG/L	5	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	UG/L	5	1 U	1 U	1 U	1 U	1 U
Chloroethane	UG/L	5	2 U	2 U	2 U	2 U	2 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, including January 1999 Errata Sheet, April 2000 and June 2004 Addenda. Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Not detected above the reported quantitation limit.

J - The reported concentration is an estimated value.

UJ - Not detected. The reported quantitation limit is an estimated value.

R - The data is rejected.

Detection Limits shown are PQL

#Error

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[SITE KEY] = 3 AND [MATRIX] = 'wg

TABLE 7
GROUNDWATER ANALYTICAL RESULTS
A&R BUILDING AREA

Location ID			AR-MW-01	AR-MW-02	AR-MW-03	AR-MW-04	AR-MW-05
Sample ID			AR-MW01	AR-MW02	AR-MW03	AR-MW04	AR-MW05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/18/16	04/18/16	04/18/16	04/18/16	04/18/16
Parameter	**Units**	**Criteria***					
Volatile Organic Compounds							
Chloroform	UG/L	7	1 U	1 U	1 U	1 U	1 U
Chloromethane	UG/L	5	2 U	2 U	2 U	2 U	2 UJ
Dibromochloromethane	UG/L	50	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	UG/L	5	1 U	1 U	1 U	1 U	1 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	R	R	R	R
Methylene chloride	UG/L	5	2 U	2 U	2 U	2 U	2 U
Styrene	UG/L	5	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	UG/L	5	1 U	1 U	1 U	1 U	1 U
Toluene	UG/L	5	1 U	1 U	1 U	1 U	1 U
Trichloroethene	UG/L	5	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	UG/L	2	1 U	1 U	1 U	1 U	1 U
Xylene (total)	UG/L	5	1 U	1 U	1 U	1 U	1 U
Polychlorinated Biphenyls							
Aroclor 1016	UG/L	0.09	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U
Aroclor 1221	UG/L	0.09	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Aroclor 1232	UG/L	0.09	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U
Aroclor 1242	UG/L	0.09	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Aroclor 1248	UG/L	0.09	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U
Aroclor 1254	UG/L	0.09	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Aroclor 1260	UG/L	0.09	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U
Dissolved Polychlorinated Biphenyls							
Aroclor 1016	UG/L	-	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, including January 1999 Errata Sheet, April 2000 and June 2004 Addenda. Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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J - The reported concentration is an estimated value.

UJ - Not detected. The reported quantitation limit is an estimated value.

R - The data is rejected.

Detection Limits shown are PQL

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[SITE KEY] = 3 AND [MATRIX] = 'wg

TABLE 7
GROUNDWATER ANALYTICAL RESULTS
A&R BUILDING AREA

Location ID			AR-MW-01	AR-MW-02	AR-MW-03	AR-MW-04	AR-MW-05
Sample ID			AR-MW01	AR-MW02	AR-MW03	AR-MW04	AR-MW05
Matrix			Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-	-	-
Date Sampled			04/18/16	04/18/16	04/18/16	04/18/16	04/18/16
Parameter	**Units**	**Criteria***					
Dissolved Polychlorinated Biphenyls							
Aroclor 1221	UG/L	-	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Aroclor 1232	UG/L	-	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U
Aroclor 1242	UG/L	-	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Aroclor 1248	UG/L	-	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Aroclor 1254	UG/L	-	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Aroclor 1260	UG/L	-	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, including January 1999 Errata Sheet, April 2000 and June 2004 Addenda. Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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J - The reported concentration is an estimated value.

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Detection Limits shown are PQL

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TABLE 7
GROUNDWATER ANALYTICAL RESULTS
A&R BUILDING AREA

Location ID			AR-MW-06	AR-SB-02	AR-SB-04
Sample ID			AR-MW06	AR-SB02	AR-SB04
Matrix			Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-
Date Sampled			04/18/16	04/18/16	04/18/16
Parameter	**Units**	**Criteria***			
Volatile Organic Compounds					
1,1,1-Trichloroethane	UG/L	5	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	5	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	1	1 U	1 U	1 U
1,1-Dichloroethane	UG/L	5	0.98 J	1 U	1 U
1,1-Dichloroethene	UG/L	5	1.6	1 U	1 U
1,2-Dichloroethane	UG/L	0.6	1 UJ	1 UJ	1 UJ
1,2-Dichloroethene (cis)	UG/L	5	393	1 U	0.52 J
1,2-Dichloroethene (trans)	UG/L	5	1 U	1 U	1 U
1,2-Dichloropropane	UG/L	1	2 U	2 U	2 U
1,3-Dichloropropene (cis)	UG/L	0.4	0.5 U	0.5 U	0.5 U
1,3-Dichloropropene (trans)	UG/L	0.4	0.5 UJ	0.5 UJ	0.5 UJ
2-Hexanone	UG/L	50	10 U	10 U	10 U
4-Methyl-2-pentanone	UG/L	-	5 U	5 U	5 U
Acetone	UG/L	50	R	R	R
Benzene	UG/L	1	0.5 U	0.5 U	0.5 U
Bromodichloromethane	UG/L	50	1 U	1 U	1 U
Bromoform	UG/L	50	1 U	1 U	1 U
Bromomethane	UG/L	5	2 UJ	2 UJ	2 UJ
Carbon disulfide	UG/L	60	5 U	5 U	5 U
Carbon tetrachloride	UG/L	5	1 U	1 U	1 U
Chlorobenzene	UG/L	5	1 U	1 U	1 U
Chloroethane	UG/L	5	2 U	2 U	2 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, including January 1999 Errata Sheet, April 2000 and June 2004 Addenda. Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

U - Not detected above the reported quantitation limit.

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UJ - Not detected. The reported quantitation limit is an estimated value.

R - The data is rejected.

Detection Limits shown are PQL

TABLE 7
GROUNDWATER ANALYTICAL RESULTS
A&R BUILDING AREA

Location ID			AR-MW-06	AR-SB-02	AR-SB-04
Sample ID			AR-MW06	AR-SB02	AR-SB04
Matrix			Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-
Date Sampled			04/18/16	04/18/16	04/18/16
Parameter	**Units**	**Criteria***			
Volatile Organic Compounds					
Chloroform	UG/L	7	1 U	1 U	1 U
Chloromethane	UG/L	5	2 U	2 U	2 U
Dibromochloromethane	UG/L	50	1 U	1 U	1 U
Ethylbenzene	UG/L	5	1 U	1 U	1 U
Methyl ethyl ketone (2-Butanone)	UG/L	50	R	R	R
Methylene chloride	UG/L	5	2 U	2 U	2 U
Styrene	UG/L	5	5 U	5 U	5 U
Tetrachloroethene	UG/L	5	0.61 J	1 U	1 U
Toluene	UG/L	5	6.4	1 U	1 U
Trichloroethene	UG/L	5	91.0	1 U	1 U
Vinyl chloride	UG/L	2	16.0	1 U	1 U
Xylene (total)	UG/L	5	1 U	1 U	1 U
Polychlorinated Biphenyls					
Aroclor 1016	UG/L	0.09	0.16 U	0.16 U	0.16 U
Aroclor 1221	UG/L	0.09	0.16 U	0.16 U	0.16 U
Aroclor 1232	UG/L	0.09	0.16 U	0.16 U	0.16 U
Aroclor 1242	UG/L	0.09	0.16 U	0.16 U	0.16 U
Aroclor 1248	UG/L	0.09	0.16 U	0.16 U	0.16 U
Aroclor 1254	UG/L	0.09	0.16 U	0.16 U	0.063 J
Aroclor 1260	UG/L	0.09	0.16 U	0.16 U	0.16 U
Dissolved Polychlorinated Biphenyls					
Aroclor 1016	UG/L	-	0.16 U	0.16 U	0.16 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, including January 1999 Errata Sheet, April 2000 and June 2004 Addenda. Class GA.

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Concentration Exceeds Criteria

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TABLE 7
GROUNDWATER ANALYTICAL RESULTS
A&R BUILDING AREA

Location ID			AR-MW-06	AR-SB-02	AR-SB-04
Sample ID			AR-MW06	AR-SB02	AR-SB04
Matrix			Groundwater	Groundwater	Groundwater
Depth Interval (ft)			-	-	-
Date Sampled			04/18/16	04/18/16	04/18/16
Parameter	**Units**	**Criteria***			
Dissolved Polychlorinated Biphenyls					
Aroclor 1221	UG/L	-	0.16 U	0.16 U	0.16 U
Aroclor 1232	UG/L	-	0.16 U	0.16 U	0.16 U
Aroclor 1242	UG/L	-	0.16 U	0.16 U	0.16 U
Aroclor 1248	UG/L	-	0.16 U	0.16 U	0.16 U
Aroclor 1254	UG/L	-	0.16 U	0.16 U	0.063 J
Aroclor 1260	UG/L	-	0.16 U	0.16 U	0.16 U

*Criteria- NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, including January 1999 Errata Sheet, April 2000 and June 2004 Addenda. Class GA.

Flags assigned during chemistry validation are shown.

Concentration Exceeds Criteria

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Detection Limits shown are PQL

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[SITE KEY] = 3 AND [MATRIX] = 'wg

Figures

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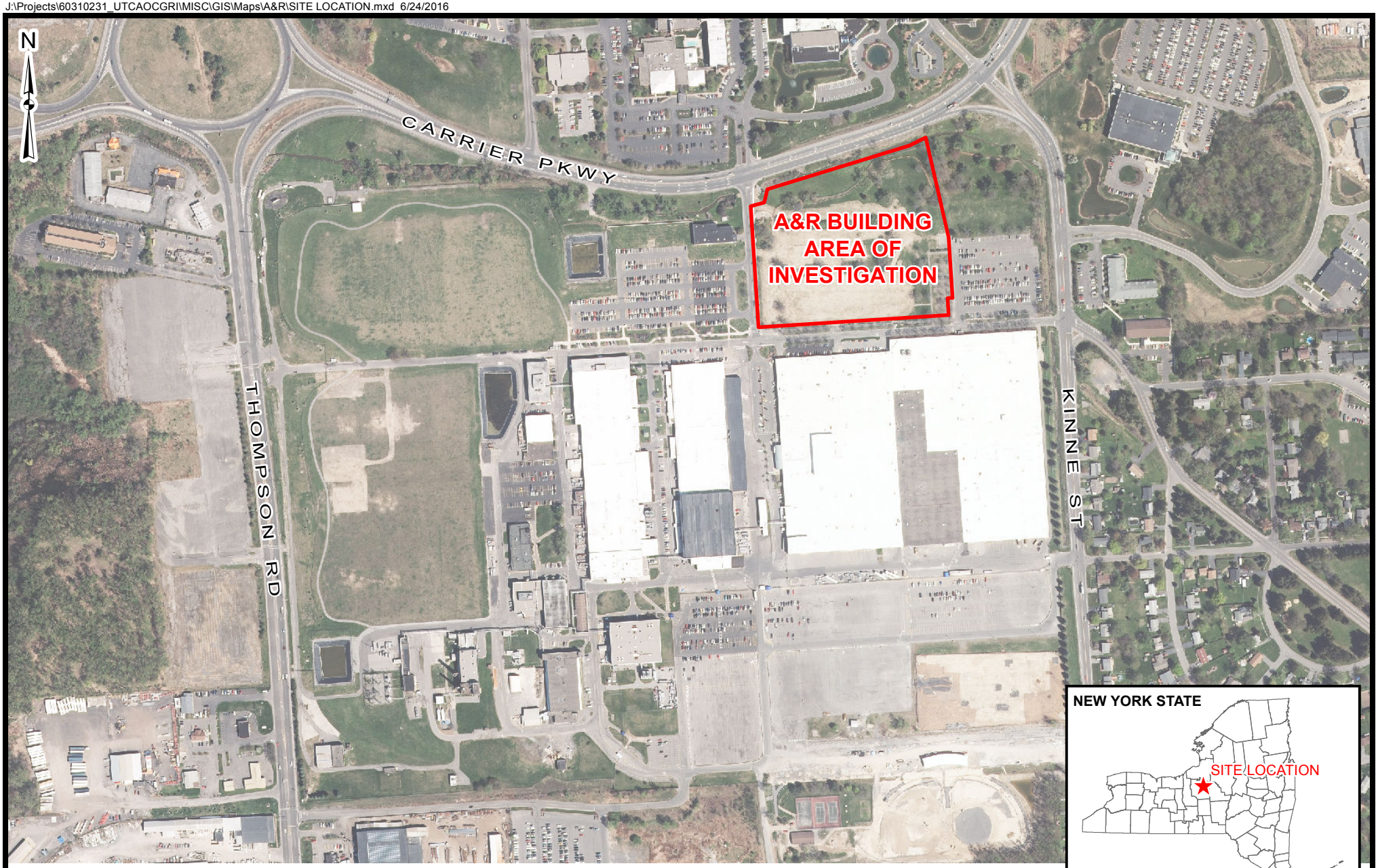


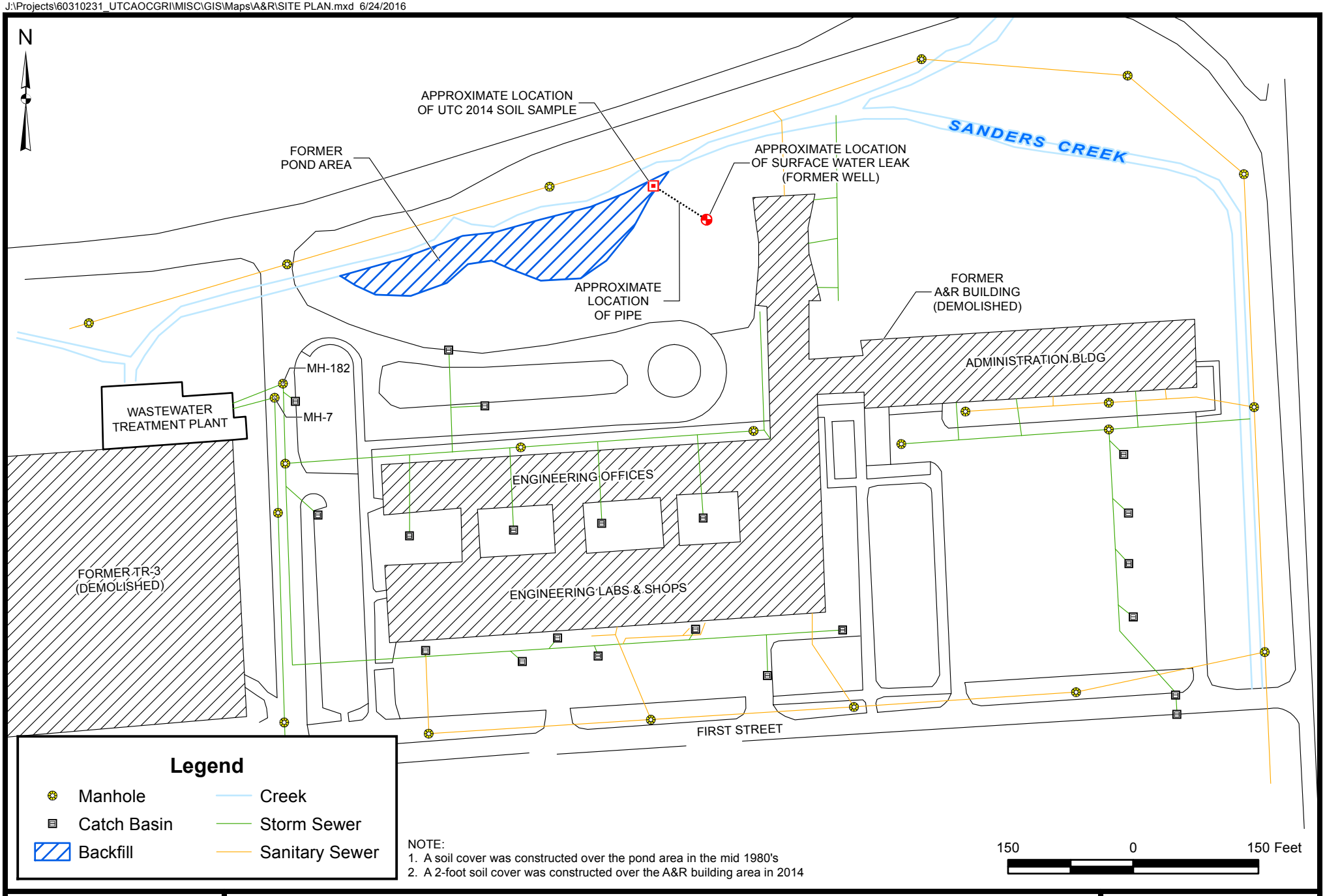
SOURCE: NYS Digital Ortho-imagery Program (NYSDOP), Onondaga County, 2015

AECOM

A&R BUILDING AREA
UTC/CARRIER SITE
SITE LOCATION

FIGURE 1

J:\Projects\60310231_UTCAOCGRI\MISC\GIS\Maps\A&R\SITE PLAN.mxd 6/24/2016

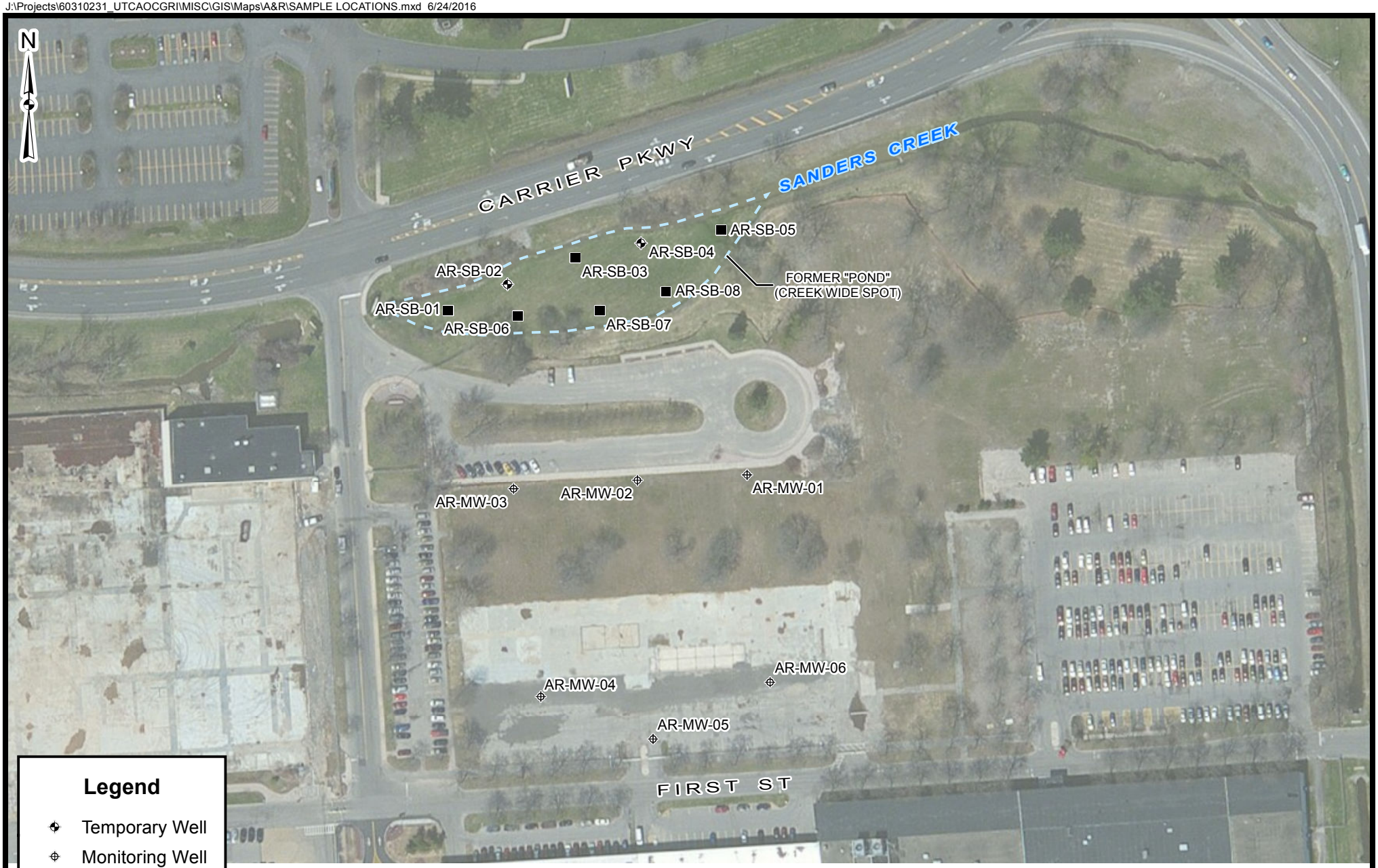


AECOM

A&R BUILDING AREA
UTC/CARRIER SITE
SITE PLAN

FIGURE 2

J:\Projects\60310231_UTCAOCGRI\MISC\GIS\Maps\A&R\SAMPLE LOCATIONS.mxd 6/24/2016



SOURCE: ESRI World Imagery, 2013

NOTE: Base orthophoto shows area prior to placement of soil cover in 2014.

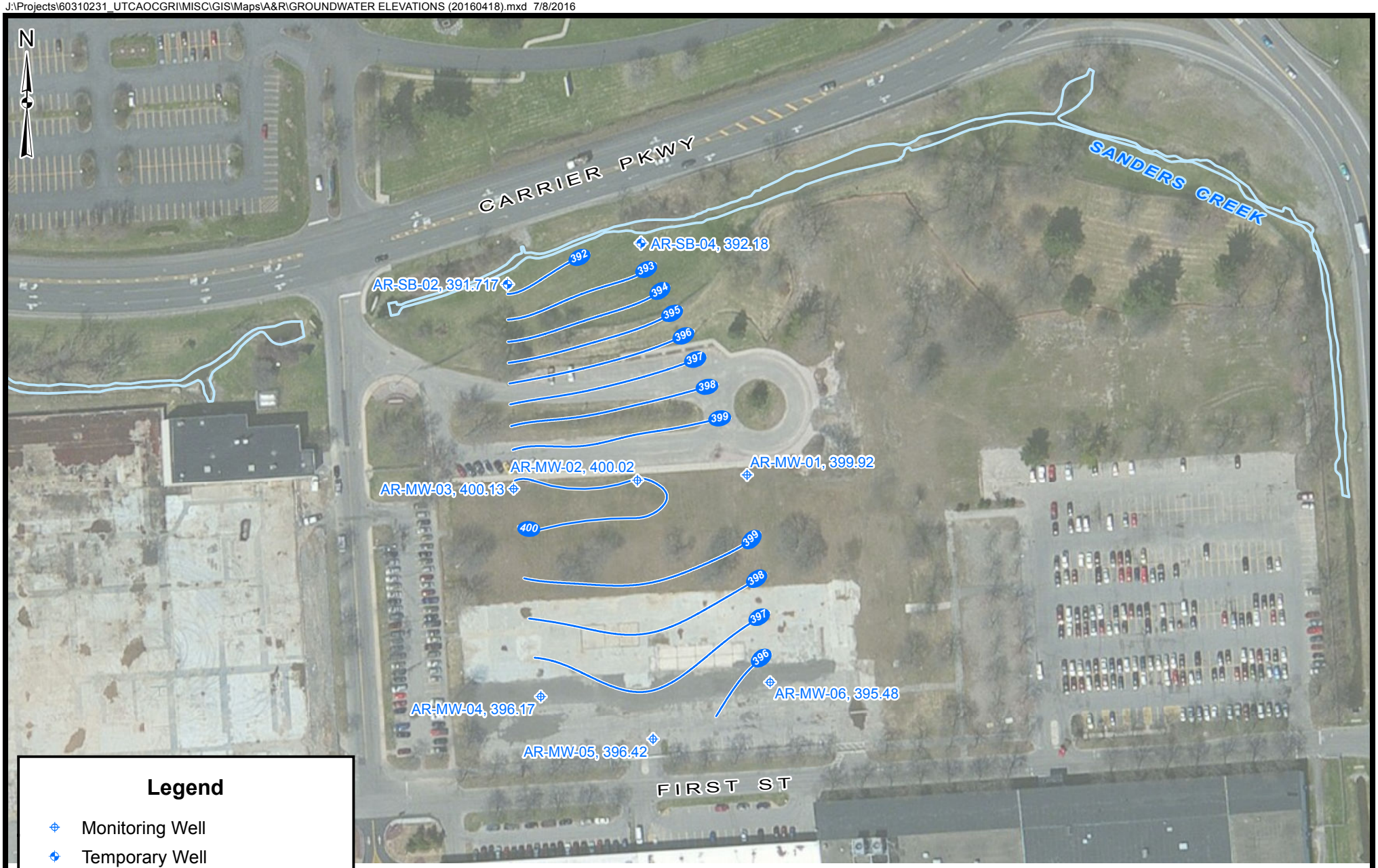
150 0 150 Feet

AECOM

A&R BUILDING AREA
UTC/CARRIER SITE
SAMPLE LOCATIONS

FIGURE 3

J:\Projects\60310231_UTCAOCGRI\MISC\GIS\Maps\A&R\GROUNDWATER ELEVATIONS (20160418).mxd 7/8/2016

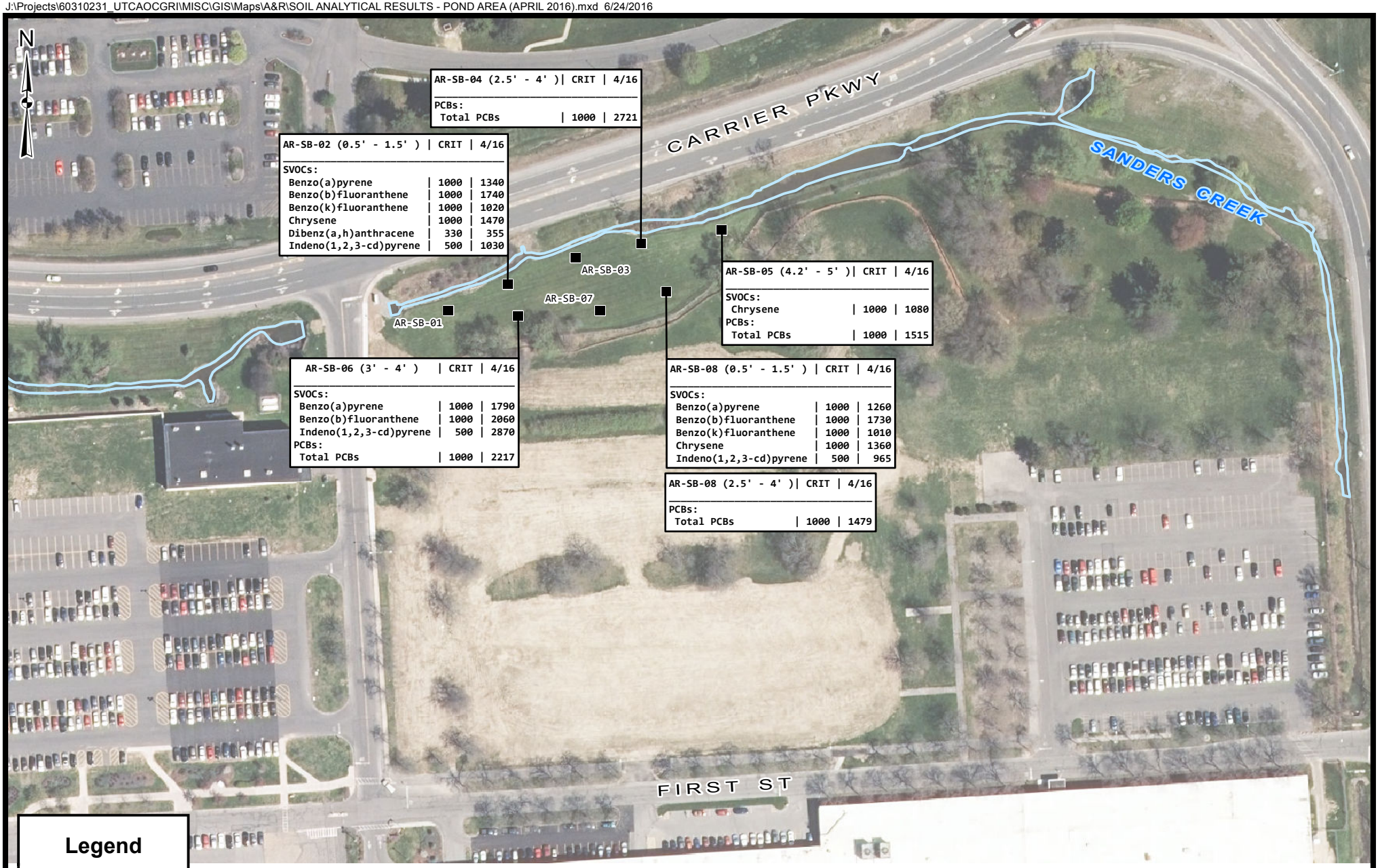


AECOM

A&R BUILDING AREA
UTC/CARRIER SITE
GROUNDWATER ELEVATIONS
(APRIL 18, 2016)

FIGURE 4

J:\Projects\60310231_UTCAOCGRI\MISC\GIS\Maps\A&R\SOIL ANALYTICAL RESULTS - POND AREA (APRIL 2016).mxd 6/24/2016



Legend

■ Soil Boring

CRITERIA: 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Residential.
NOTES: Units shown in µg/kg.
SOURCE: NYS Digital Ortho-imagery Program (NYSDOP), Onondaga County, 2015

150 0 150 Feet

AECOM

A&R BUILDING AREA
UTC/CARRIER SITE
SOIL EXCEEDANCES IN POND AREA
(APRIL 2016)

FIGURE 5

J:\Projects\60310231_UTCAOCGRI\MISC\GIS\Maps\A&R\GROUNDWATER ANALYTICAL RESULTS (APRIL 2016).mxd 6/24/2016

CRITERIA: NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998, including January 1999 Errata Sheet, April 2000 and June 2004 Addenda. Class GA.
NOTES: Units shown in µg/L.
SOURCE: NYS Digital Ortho-imagery Program (NYSDOP), Onondaga County, 2015

AECOM

A&R BUILDING AREA
UTC/CARRIER SITE
GROUNDWATER EXCEEDANCES
(APRIL 2016)

FIGURE 6

Appendix A

Boring/Well Construction Logs

AECOM

TEST BORING LOG

BORING NO. : ARMW-01

PROJECT/PROJECT LOCATION:	UTC A&R Building
CLIENT:	UTC
BORING CONTRACTOR:	Parratt-Wolff
SHEET:	1 OF 1
JOB NO. :	60428933
NORTHING:	1124770.59 **EASTING:** 954418.68
GROUND ELEVATION:	404.06
DATE STARTED:	4/4/16
DATE FINISHED:	4/4/16
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	Kevin Connare

GROUNDWATER:

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	CORE	TUBE
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-5		NA	ND	Brown Clayey SILT with cobbles (ML)		Moist
						Brown Clayey SILT (ML)	Hole Plug (0.5-4.0')	
-5		5-8		100	ND	Gray Brown Silty CLAY (CL)	2" PVC Riser (0'-5')	
						Brown Silty CLAY (CL)		
						Brown Silty Fine SAND (SM)		Wet @ 7.0'.
		8-12		100	ND	Brown Fine Sandy SILT (ML)		
						Brown Silty CLAY, trace fine gravel (CL)		
-10						Brown Fine Sandy SILT, some clay (ML)	NJ #0 US Silica (4'-16')	
		12-16		100	ND	Brown SILT, some fine sand (ML)	10-slot 2" PVC screen (5'-15')	
-15						Gray Silty CLAY (CL)		
						End of boring @ 16.0'	Natural Collapse, Did not Auger.	
-20								
-25								

COMMENTS: Boring hand cleared to 5' bgs then advanced with track mounted Geoprobe 6712 DT rig.

Collected sample from 6-7' for analysis of VOCs and PCBs

TEST BORING LOG

AECOM

BORING NO. :	ARMW-02
PROJECT/PROJECT LOCATION:	UTC A&R Building
SHEET:	1 OF 1
CLIENT:	UTC
JOB NO. :	60428933
BORING CONTRACTOR:	Parratt-Wolff
NORTHING:	1124764.40 **EASTING:** 954292.16
GROUNDWATER:	
GROUND ELEVATION:	403.76
DATE STARTED:	4/4/16
DATE FINISHED:	4/5/16
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	Kevin Connare

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	CORE	TUBE
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-4		NA	ND	Brown Clayey SILT with gravel (ML)		Moist
						Brown Clayey SILT, trace gravel (ML)	Hole Plug (0.5-3.0')	
							2" PVC Riser (0'-4')	
-5		4-8		90	ND	Brown to Gray Brown Silty CLAY, some fine sand (CL)		
						Gray brown Fine Sandy SILT (ML)		Wet @ 5.5'.
						Brown Clayey SILT, interbedded with Fine Sandy SILT (ML)		
		8-12		90	ND	Brown Silty CLAY (CL)	NJ #0 US Silica (3'-14')	
-10						Brown Clayey SILT, interbedded with Fine Sandy SILT (ML)	10-slot 2" PVC screen (4'-14')	
						Brown Silty Fine SAND (SM)		
		12-16		100	ND	Brown Gray Fine SAND (SP)		
-15						Brown Gray SILT, grades to Silty CLAY, plastic (ML/CL)	Natural Collapse-Did not Auger	
						End of boring @ 16.0'		
-20								
-25								

COMMENTS: Boring hand cleared to 4' bgs then advanced with track mounted Geoprobe 6712 DT rig.

Collected sample from 4.5-5.5' for analysis of VOCs and PCBs

BORING NO. : ARMW-02

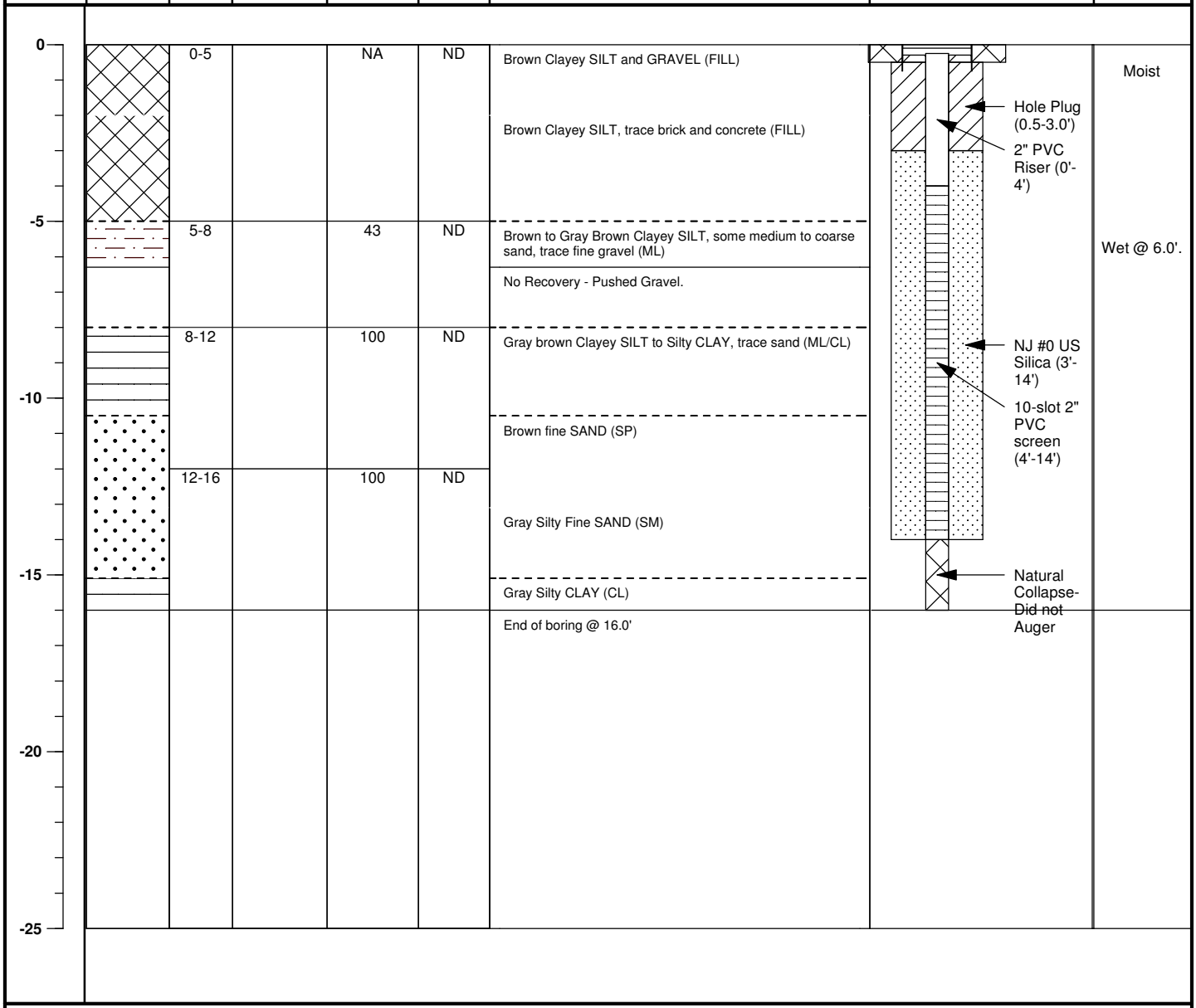
TEST BORING LOG

AECOM

BORING NO. :	ARMW-03
PROJECT/PROJECT LOCATION:	UTC A&R Building
SHEET:	1 OF 1
CLIENT:	UTC
JOB NO. :	60428933
BORING CONTRACTOR:	Parratt-Wolff
NORTHING:	1124754.76 **EASTING:** 954149.74
GROUNDWATER:	
GROUND ELEVATION:	403.68
DATE STARTED:	4/4/16
DATE FINISHED:	4/5/16
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	Kevin Connare

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE	HSA	Macrocore		
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-5		NA	ND	Brown Clayey SILT and GRAVEL (FILL)		Moist
						Brown Clayey SILT, trace brick and concrete (FILL)	Hole Plug (0.5-3.0')	
							2" PVC Riser (0'-4')	
-5		5-8		43	ND	Brown to Gray Brown Clayey SILT, some medium to coarse sand, trace fine gravel (ML)		Wet @ 6.0'.
						No Recovery - Pushed Gravel.		
		8-12		100	ND	Gray brown Clayey SILT to Silty CLAY, trace sand (ML/CL)	NJ #0 US Silica (3'-14')	
-10						Brown fine SAND (SP)	10-slot 2" PVC screen (4'-14')	
		12-16		100	ND			
						Gray Silty Fine SAND (SM)		
-15						Gray Silty CLAY (CL)	Natural Collapse-Did not Auger	
						End of boring @ 16.0'		
-20								
-25								



COMMENTS: Boring hand cleared to 5' bgs then advanced with track mounted Geoprobe 6712 DT rig.

Collected sample from 5-6' for analysis of VOCs and PCBs

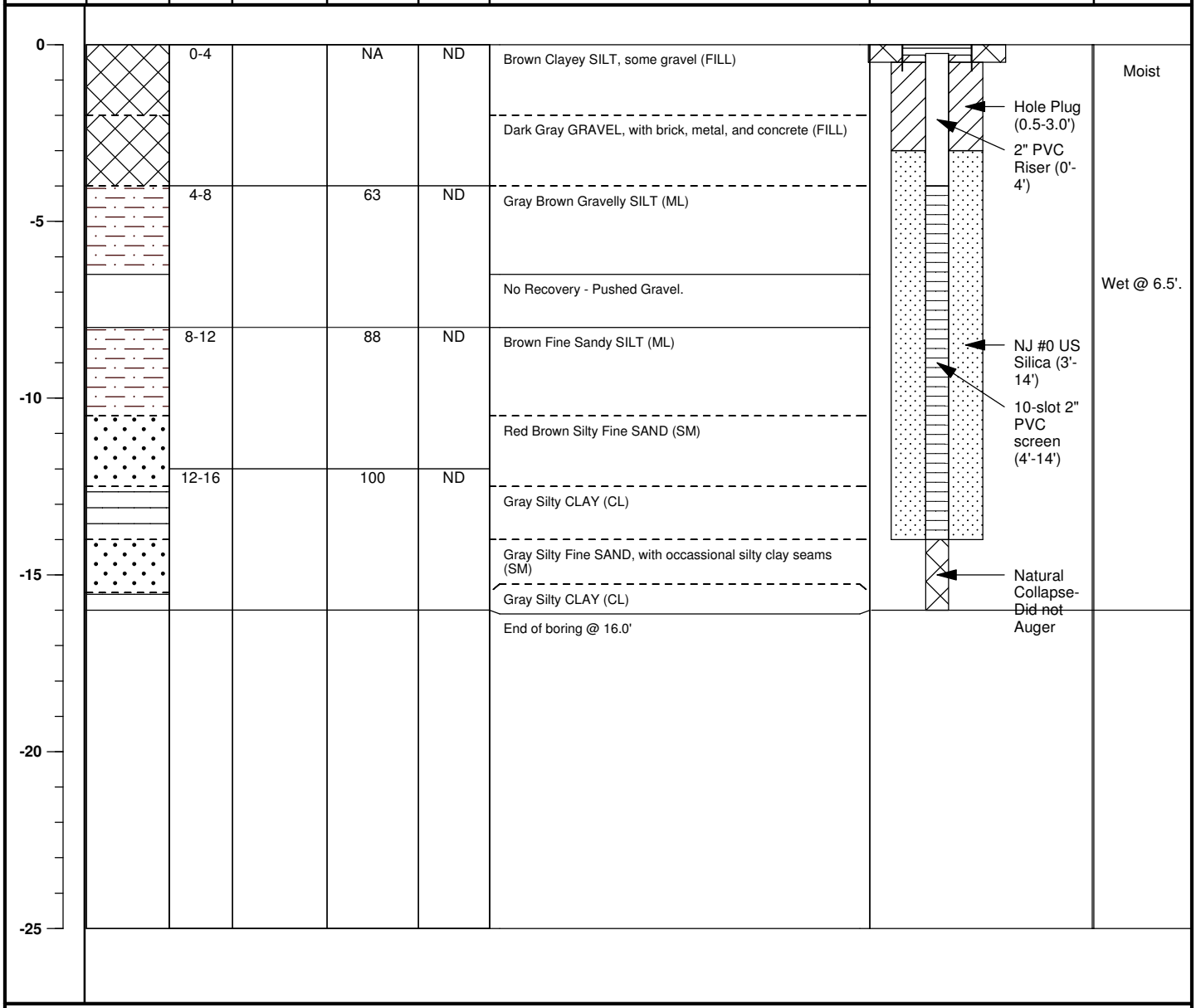
TEST BORING LOG

AECOM

BORING NO. :	ARMW-04
PROJECT/PROJECT LOCATION:	UTC A&R Building
SHEET:	1 OF 1
CLIENT:	UTC
JOB NO. :	60428933
BORING CONTRACTOR:	Parratt-Wolff
NORTHING:	1124515.46 **EASTING:** 654180.87
GROUNDWATER:	
GROUND ELEVATION:	404.94
DATE STARTED:	4/6/16
DATE FINISHED:	4/6/16
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	Kevin Connare

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE	HSA	Macrocore		
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-4		NA	ND	Brown Clayey SILT, some gravel (FILL)		Moist
						Dark Gray GRAVEL, with brick, metal, and concrete (FILL)	Hole Plug (0.5-3.0')	
							2" PVC Riser (0'-4')	
-5		4-8		63	ND	Gray Brown Gravelly SILT (ML)		
						No Recovery - Pushed Gravel.		Wet @ 6.5'.
		8-12		88	ND	Brown Fine Sandy SILT (ML)	NJ #0 US Silica (3'-14')	
-10						Red Brown Silty Fine SAND (SM)	10-slot 2" PVC screen (4'-14')	
		12-16		100	ND	Gray Silty CLAY (CL)		
						Gray Silty Fine SAND, with occassional silty clay seams (SM)		
-15						Gray Silty CLAY (CL)	Natural Collapse-Did not Auger	
						End of boring @ 16.0'		
-20								
-25								



COMMENTS: Boring hand cleared to 4' bgs then advanced with track mounted Geoprobe 6712 DT rig.

Collected sample from 5-6' for analysis of VOCs and PCBs

BORING NO. : ARMW-04

TEST BORING LOG

AECOM

BORING NO. :	ARMW-05
PROJECT/PROJECT LOCATION:	UTC A&R Building
SHEET:	1 OF 1
CLIENT:	UTC
JOB NO. :	60428933
BORING CONTRACTOR:	Parratt-Wolff
NORTHING:	1124466.37 **EASTING:** 954310.19
GROUNDWATER:	
GROUND ELEVATION:	405.22
DATE STARTED:	4/6/16
DATE FINISHED:	4/6/16
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	Kevin Connare

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	CORE	TUBE
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-4		NA	ND	Brown Clayey SILT, some gravel (FILL)	Hole Plug (0.5-3.0')	Moist
						COBBLE and GRAVEL, some silt (FILL)		
						Gray Silty GRAVEL, some cobbles (FILL)	2" PVC Riser (0'-4')	
-5		4-8		88	ND	Brown to gray brown Silty CLAY, trace fine gravel (CL)		
								Wet @ 7.0'.
		8-12		100	ND	Brown to gray brown Clayey SILT (ML)	NJ #0 US Silica (3'-14')	
-10							10-slot 2" PVC screen (4'-14')	
						Brown Fine SAND (SM)		
		12-16		100	ND	Gray Silty CLAY (CL)		
-15							Natural Collapse-Did not Auger	
						End of boring @ 16.0'		
-20								
-25								

COMMENTS: Boring hand cleared to 4' bgs then advanced with track mounted Geoprobe 6712 DT rig.

Collected sample from 5-7' for analysis of VOCs and PCBs

BORING NO. : ARMW-05

AECOM

TEST BORING LOG

BORING NO. : ARMW-06

PROJECT/PROJECT LOCATION: UTC A&R Building	**SHEET:** 1 **OF** 1
CLIENT: UTC	**JOB NO. :** 60428933
BORING CONTRACTOR: Parratt-Wolff	**NORTHING:** 1124531.93 **EASTING:** 954445.06
GROUNDWATER:	**GROUND ELEVATION:** 404.96

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE	HSA	Macrocore		
				DIA.	4 1/4"	2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DATE STARTED: 4/6/16
DATE FINISHED: 4/7/16
DRILLER: Jolaan Price
GEOLOGIST: Rob Murphy
REVIEWED BY: Kevin Connare

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-4		NA	ND	Gray Clayey SILT with Gravel, trace cobble (FILL)	Hole Plug (0.5-3.0'); 2" PVC Riser (0'-4')	Moist
-5		4-8		100	0.4	Brown Gray Clayey SILT to Silty CLAY (FILL)		Slight Petroleum Odor 4-6'
					ND			Wet @ 6.0'.
		8-12		100	ND	Gray Silty CLAY with brick fragments (FILL)	NJ #0 US Silica (3'-14'); 10-slot 2" PVC screen (4'-14')	
-10						Brown Silty Fine SAND, grades to clayey silt (SM)		
						Gray Silty CLAY to Clayey SILT (ML/CL)		
		12-16		100	ND	Gray Silty Fine SAND (SM)		
-15							Natural Collapse-Did not Auger	
						End of boring @ 16.0'		
-20								
-25								

COMMENTS: Boring hand cleared to 4' bgs then advanced with track mounted Geoprobe 6712 DT rig.
Collected sample from 5-6' for analysis of VOCs and PCBs

AECOM

TEST BORING LOG

BORING NO. : ARSB-01

PROJECT/PROJECT LOCATION: UTC A&R Building	**SHEET:** 1 **OF** 1
CLIENT: UTC	**JOB NO. :** 60428933
BORING CONTRACTOR: Parratt-Wolff	**NORTHING:** 1124960.20 **EASTING:** 954074.55
GROUNDWATER:	**GROUND ELEVATION:** 393.400

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE		Macrocore		
				DIA.		2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DATE STARTED:	4/7/16
DATE FINISHED:	4/7/16
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	Kevin Connare

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-4		60	ND	Brown Clayey Silt organic topsoil (ML)		Moist
						Brown Clayey SILT with GRAVEL (GM)		Wet @ 2.0'.
						Black organic SILT (ML)		Slight old petroleum odor (3.0-4.0')
-5		4-6		80	ND	Gray SILT, trace roots (ML)		
						Gray SILT trace fine sand (ML)		
						End of boring @ 6.0'		
-10								
-15								
-20								
-25								

COMMENTS: Boring advanced with track mounted Geoprobe 6712 DT rig.

Collected sample from 3.5-4.0' for analysis of VOCs, SVOCs and PCBs

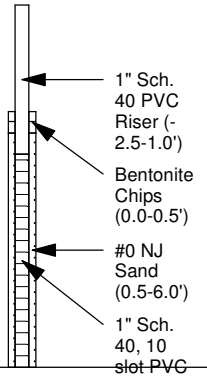
TEST BORING LOG

AECOM

BORING NO. :	ARSB-02
PROJECT/PROJECT LOCATION:	UTC A&R Building
SHEET:	1 OF 1
CLIENT:	UTC
JOB NO. :	60428933
BORING CONTRACTOR:	Parratt-Wolff
NORTHING:	1124990.14 **EASTING:** 954142.62
GROUNDWATER:	
GROUND ELEVATION:	393.735
DATE STARTED:	4/7/16
DATE FINISHED:	4/7/16
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	Kevin Connare

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE		Macrocore		
				DIA.		2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-4		55	ND	Brown Clayey SILT, topsoil (ML) Brown Clayey SILT, with GRAVEL (ML) SILT and GRAVEL (GM)	1" Sch. 40 PVC Riser (-2.5-1.0') Bentonite Chips (0.0-0.5')	Moist Wet @ 1.2'.
-5		4-6		60	ND	Black organic SILT (ML) Gray SILT (ML)	#0 NJ Sand (0.5-6.0') 1" Sch. 40, 10 slot PVC Screen (1.0-6.0')	No odor noted
-10						End of boring @ 6.0'		
-15								
-20								



COMMENTS: Boring advanced with track mounted Geoprobe 6712 DT rig.

Collected sample from 4.0-4.5' for analysis of VOCs, SVOCs and PCBs

Installed 1" diameter PVC Temporary well in borehole.

BORING NO. : ARSB-02

AECOM

TEST BORING LOG

BORING NO. : ARSB-03

PROJECT/PROJECT LOCATION: UTC A&R Building	**SHEET:** 1 **OF** 1
CLIENT: UTC	**JOB NO. :** 60428933
BORING CONTRACTOR: Parratt-Wolff	**NORTHING:** 1125021.01 **EASTING:** 954220.42
GROUNDWATER:	**GROUND ELEVATION:** 393.783

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE		Macrocore		
				DIA.		2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DATE STARTED:	4/7/16
DATE FINISHED:	4/7/16
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	Kevin Connare

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-4		50	ND	Brown Clayey Silt organic topsoil (ML) Brown Clayey SILT with GRAVEL (GM)		Moist Wet @ 1.1'.
						Black organic SILT (ML)		
-5		4-6		65	ND	Gray Clayey SILT with roots, grades to brown then to gray brown (ML)		Moderate Petroleum odor and decay odor (3.8-4.0')
						End of boring @ 6.0'		
-10								
-15								
-20								
-25								

COMMENTS: Boring advanced with track mounted Geoprobe 6712 DT rig.

Collected sample from 3.8-4.3' for analysis of VOCs, SVOCs and PCBs

BORING NO. : **ARSB-03**

AECOM

TEST BORING LOG

BORING NO. : ARSB-04

PROJECT/PROJECT LOCATION: UTC A&R Building	**SHEET:** 1 **OF** 1
CLIENT: UTC	**JOB NO. :** 60428933
BORING CONTRACTOR: Parratt-Wolff	**NORTHING:** 1125037.71 **EASTING:** 954296.60
GROUNDWATER:	**GROUND ELEVATION:** 394.046

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE		Macrocore		
				DIA.		2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DATE STARTED:	4/7/16
DATE FINISHED:	4/7/16
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	Kevin Connare

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-4		63	ND	Gray organic topsoil, silt (ML)	1" Sch. 40 PVC Riser (-1.8-1.0')	Moist Wet @ 1.0'.
						Gray brown Clayey SILT, trace gravel (ML)		
						Brown GRAVEL Fill (GW)	Bentonite Chips (0.0-0.5')	
					0.3	Black organic SILT (ML)		
-5		4-6		90	ND	Gray Clayey SILT with black clayey silt interbeds (ML)	#0 NJ Sand (0.5-6.0')	Moderate petroleum and organic decay odor 2.5-4.0'
						Light Brown Silty Fine SAND (SM)	1" Sch. 40, 10 slot PVC Screen (1.0-6.0')	
						End of boring @ 6.0'		
-10								
-15								
-20								

COMMENTS: Boring advanced with track mounted Geoprobe 6712 DT rig.

Collected sample from 2.5-4.0' for analysis of VOCs, SVOCs and PCBs

Installed 1" diameter PVC Temporary well in borehole.

AECOM

TEST BORING LOG

BORING NO. : ARSB-05

PROJECT/PROJECT LOCATION: UTC A&R Building	**SHEET:** 1 **OF** 1
CLIENT: UTC	**JOB NO. :** 60428933
BORING CONTRACTOR: Parratt-Wolff	**NORTHING:** 1125052.57 **EASTING:** 954388.90
GROUNDWATER:	**GROUND ELEVATION:** 394.284
DATE STARTED:	4/7/16
DATE FINISHED:	4/7/16
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	Kevin Connare

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE		Macrocore		
				DIA.		2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-4		50	ND	Brown Topsoil, organic silt (ML)		Moist
						Brown clayey SILT (ML)		Wet @ 1.0'.
						Gray/Brown GRAVEL (GW)		
						Brown Fine to coarse SAND and GRAVEL (SW)		
-5		4-8		88	ND 0.1 ND	Black organic SILT, with leaf litter (ML) Brown Gray Silty CLAY (CL)		Moderate petroleum odor and sheen from 4.2-5.0'
-10						End of boring @ 8.0'		
-15								
-20								
-25								

COMMENTS: Boring advanced with track mounted Geoprobe 6712 DT rig.

Collected sample from 4.2-5.0' for analysis of VOCs, SVOCs and PCBs

BORING NO. : **ARSB-05**

AECOM

TEST BORING LOG

BORING NO. : ARSB-06

PROJECT/PROJECT LOCATION: UTC A&R Building	**SHEET:** 1 **OF** 1
CLIENT: UTC	**JOB NO. :** 60428933
BORING CONTRACTOR: Parratt-Wolff	**NORTHING:** 1124954.21 **EASTING:** 954154.59
GROUNDWATER:	**GROUND ELEVATION:** 393.85
DATE STARTED:	4/4/16
DATE FINISHED:	4/4/16
DRILLER:	
GEOLOGIST:	K. Stahle
REVIEWED BY:	Kevin Connare

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE		Hand Tools		
				DIA.				
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-4			ND	Brown Topsoil and Sandy Fill material (ML)		Moist Wet @ 2.5'.
						Brown coarse GRAVEL, some fine to medium sand and silt. Grades coarser with depth (GW)		
						Very Coarse GRAVEL (GW)		
						Dark brown to black Clayey SILT (ML)		
-5						End of boring @ 4.0'		
-10								
-15								
-20								
-25								

COMMENTS: Boring advanced using hand tools, 3" hand auger, post hole digger,shovels, and pry bar.

Collected sample from 3-4' for analysis of VOCs, SVOCs and PCBs

BORING NO. : ARSB-06

AECOM

TEST BORING LOG

BORING NO. : ARSB-07

PROJECT/PROJECT LOCATION: UTC A&R Building

SHEET: 1 **OF** 1

CLIENT: UTC

JOB NO. : 60428933

BORING CONTRACTOR: Parratt-Wolff

NORTHING: 1124960.18 **EASTING:** 954249.12

GROUNDWATER:

DATE	TIME	LEVEL	TYPE	CAS.	SAMPLER	CORE	TUBE
			TYPE		Macrocore		
			DIA.		2"		
			WT.				
			FALL				
			* POCKET PENETROMETER READING				

GROUND ELEVATION: 393.924

DATE STARTED: 4/7/16

DATE FINISHED: 4/7/16

DRILLER: Jolaan Price

GEOLOGIST: Rob Murphy

REVIEWED BY: Kevin Connare

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-4		63	ND	Brown Clayey SILT and GRAVEL (ML)		Moist
						Gray/Brown fine to coarse GRAVEL, trace silt (GW)		Wet @ 2.0'.
						Black organic SILT (ML)		Strong Organic decay odor 3.0-4.0' and Petroleum odor.
-5		4-6		75	ND	Gray SILT with PEAT and wood fragments (ML)		
						Gray Silty CLAY (CL)		
						Brown Gray Fine Sandy SILT (ML)		
						End of boring @ 6.0'		
-10								
-15								
-20								
-25								

COMMENTS: Boring advanced with track mounted Geoprobe 6712 DT rig.

Collected sample from 3-4' for analysis of VOCs, SVOCs and PCBs

AECOM

TEST BORING LOG

BORING NO. : ARSB-08

PROJECT/PROJECT LOCATION: UTC A&R Building	**SHEET:** 1 **OF** 1
CLIENT: UTC	**JOB NO. :** 60428933
BORING CONTRACTOR: Parratt-Wolff	**NORTHING:** 1124981.64 **EASTING:** 954325.09
GROUNDWATER:	**GROUND ELEVATION:** 393.759

DATE	TIME	LEVEL	TYPE		CAS.	SAMPLER	CORE	TUBE
				TYPE		Macrocore		
				DIA.		2"		
				WT.				
				FALL				
				* POCKET PENETROMETER READING				

DATE STARTED:	4/7/16
DATE FINISHED:	4/7/16
DRILLER:	Jolaan Price
GEOLOGIST:	Rob Murphy
REVIEWED BY:	Kevin Connare

DEPTH FEET	STRATA	SAMPLE DEPTH	SAMPLE BLOW COUNTS	RECOVERY (%)	PID DIRECT/ HEAD-SPACE	MATERIAL DESCRIPTION	WELL CONSTRUCTION	REMARKS
0		0-4		58	ND	Gray brown Clayey SILT (ML) Gray fine to coarse GRAVEL (GP)		Moist Wet @ 1.0'.
						Black organic SILT, leaf litter (ML)		Organic decay odor 2.5-4.0'.
-5		4-6		80	ND	Brown to gray, PEAT and organic SILT (ML) Gray CLAY (CL)		
						End of boring @ 6.0'		
-10								
-15								
-20								
-25								

COMMENTS: Boring advanced with track mounted Geoprobe 6712 DT rig.

Collected sample from 2.5-4.0' for analysis of VOCs, SVOCs and PCBs

Appendix B

Well Development Logs

WELL DEVELOPMENT LOG

PROJECT TITLE: JTC - AIR WELL NO.: AR-MW-01

PROJECT NO.:

STAFF: K. Stahle

DATE(S): 4/11/16

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	15.0	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	4.25	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	10.75	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.75	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	20	8"	2.60

OR
$V=0.0408 \times (\text{CASING DIAMETER})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	1	4	16	20							
pH	6.53	8.10	8.38	8.41							
SPEC. COND. (umhos)	0.814	0.851	0.877	0.876							
APPEARANCE	BRN	BRN	BRN	BRN							
TEMPERATURE (°C)	11.03	9.61	8.99	9.01							
Turb	>999	>999	>999	>999							

COMMENTS:

WELL DEVELOPMENT LOG

PROJECT TITLE: UTC - AFR WELL NO.: AR-MW-02

PROJECT NO.:

STAFF: K. Stahle

DATE(S): 4/11/16

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	12.0	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	3.15	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	8.85	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.4	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	16	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	1	12	16								
pH	7.96	7.85	8.03								
SPEC. COND. (umhos)	0.659	1.19	1.38								
APPEARANCE	Brn	Brn	Brn								
TEMPERATURE (°C)	9.48	9.90	10.16								
TURB	>999	>999	>999								

COMMENTS:

WELL DEVELOPMENT LOG

PROJECT TITLE: UTC - AIR WELL NO.: AZ-MW-03

PROJECT NO.:

STAFF: K. Stahl

DATE(S): 4/12/16

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	13	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	3.6	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	9.4	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.5	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	36	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	1	8	20	36							
pH	7.15	7.96	7.89	7.85							
SPEC. COND. (umhos)	0.716	0.789	0.780	0.773							
APPEARANCE	Brn	Brn	Brn	Brn							
TEMPERATURE (°C)	8.79	9.16	10.71	11.44							
TURB	>999	>999	>999	>999							

COMMENTS:

WELL DEVELOPMENT LOG

PROJECT TITLE: UTC - AER WELL NO.: AR-MW-04

PROJECT NO.:

STAFF: K. Stahle

DATE(S): 4/12/16

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	14.0	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	6.65	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	7.35	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.2	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	30	8"	2.60

OR

$V = 0.0408 \times (\text{CASING DIAMETER})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	1	6	12	20	30						
pH	8.26	7.35	7.37	7.42	7.21						
SPEC. COND. (umhos)	0.738	0.673	0.754	0.609	0.616						
APPEARANCE	BRN	BRN	BRN	LT BRN	LT BRN						
TEMPERATURE (°C)	9.36	7.76	7.49	6.75	6.91						
Turbidity	>999	>999	>999	205	164						

COMMENTS:

WELL DEVELOPMENT LOG

PROJECT TITLE: UTC - AFR WELL NO.: AR-MW-05

PROJECT NO.:

STAFF: K. Stahle

DATE(S): 4/12/16

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	14.0	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	7.40	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	6.60	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	1.1	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	9	8"	2.60

OR
V=0.0408 x (CASING DIAMETER)²

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	1	6	9								
pH	7.11	7.55	7.41								
SPEC. COND. (umhos)	5.85	545	5.56								
APPEARANCE	BRN	BRN	BRN								
TEMPERATURE (°C)	8.23	7.98	7.76								
TURB	>999	>999	>999								

COMMENTS:
Dry @ 6 gal Removed. Allow to Recover and restart
Dry @ 3 gal Removed. " "

WELL DEVELOPMENT LOG

PROJECT TITLE: UTC - A, FR WELL NO.: AR-MW-06

PROJECT NO.:

STAFF: K. Stahl

DATE(S): 4/12/16

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	12.0	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	8.75	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	3.25	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	0.17	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	0.5	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	9.5	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	1	9.5									
pH	8.31	8.51									
SPEC. COND. (umhos)	1.57	1.70									
APPEARANCE	BRN	BRN									
TEMPERATURE (°C)	8.17	8.43									
TURB	>999	>999									

COMMENTS:

Dry @ 5 gal removed. Allow to recover

Dry @ 4.5 gal removed.

WELL DEVELOPMENT LOG

PROJECT TITLE: _____ WELL NO.: _____

PROJECT NO.: _____

STAFF: _____

DATE(S): _____

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	_____	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	_____	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	_____	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	_____	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	_____	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=	_____	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	_____	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
pH											
SPEC. COND. (umhos)											
APPEARANCE											
TEMPERATURE (°C)											

COMMENTS:

WELL DEVELOPMENT LOG

PROJECT TITLE: _____ WELL NO.: _____

PROJECT NO.: _____

STAFF: _____

DATE(S): _____

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=	_____	1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=	_____	2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=	_____	3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=	_____	4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=	_____	5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=	_____	6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=	_____	8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
pH											
SPEC. COND. (umhos)											
APPEARANCE											
TEMPERATURE (°C)											

COMMENTS:

WELL DEVELOPMENT LOG

PROJECT TITLE: _____ WELL NO.: _____

PROJECT NO.: _____

STAFF: _____

DATE(S): _____

			WELL ID.	VOL. (GAL/FT)
1. TOTAL CASING AND SCREEN LENGTH (FT.)	=		1"	0.04
2. WATER LEVEL BELOW TOP OF CASING (FT.)	=		2"	0.17
3. NUMBER OF FEET STANDING WATER (#1 - #2)	=		3"	0.38
4. VOLUME OF WATER/FOOT OF CASING (GAL.)	=		4"	0.66
5. VOLUME OF WATER IN CASING (GAL.)(#3 x #4)	=		5"	1.04
6. VOLUME OF WATER TO REMOVE (GAL.)(#5 x ___)	=		6"	1.50
7. VOLUME OF WATER ACTUALLY REMOVED (GAL.)	=		8"	2.60

OR

$V=0.0408 \times (\text{CASING DIAMETER})^2$

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
pH											
SPEC. COND. (umhos)											
APPEARANCE											
TEMPERATURE (°C)											

COMMENTS:

Appendix C

Well Purge/Sampling Logs

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: VTC Site: A+R Well I.D.: MW-01

Date: 4-18-16 Sampling Personnel: Ron Russo Jr. Company: AECOM

Purging/Sampling Device: _____ Tubing Type: _____ Pump/Tubing Inlet Location: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 3.84 Depth to Well Bottom: 14.88 Well Diameter: 2" Screen Length: _____

Casing Type: PVC Volume in 1 Well Casing (liters): 6.81L (1.8 gal) Estimated Purge Volume (liters): 4 gal

Sample ID: AR-MW01 Sample Time: 14:43 QA/QC: No

Sample Parameters: VOC's
PCB
PCB Filtered

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP ~~Eh~~ (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
14:10	7.29	10.77	0.806	3.67	371	155	150	4.72
14:15	6.88	9.58	0.816	0	19.1	162	~~150~~ 150	5.14
14:20	6.88	9.55	0.815	0	12.8	163	100	5.11
14:25	6.87	9.32	0.816	0	2.2	165	100	5.11
14:30	6.84	8.98	0.818	0	0	167	100	5.15
14:35	6.82	9.17	0.819	0	0	169	100	5.19
14:40	6.80	9.18	0.813	0	0	170	~~150~~ 150	5.29
14:43	6.80	9.17	0.813	0	0	170	150	5.32
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES–0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_H = \pi r^2 h$)

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: UTC (Carrier-Syracuse) Site: AIR Well I.D.: AIR MW-02

Date: 4-18-16 Sampling Personnel: Ron Russo Jr Company: AECOM

Purging/Sampling Device: GeoPump Tubing Type: 1/4" ID x 3/8" OD LDPE Pump/Tubing Inlet Location: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 3.38 Depth to Well Bottom: 12.85 Well Diameter: 2" Screen Length:

Casing Type: PVC Volume in 1 Well Casing (liters): 5.84 L (1.54 gallons) Estimated Purge Volume (liters): 4 gal

Sample ID: AR-MW02 Sample Time: 15:37 QA/QC: No

Sample Parameters: VOCs
PCBs
PCBs Filtered
(very Light Sheen in bucket)

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP ~~Eh~~ (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:05	~~6.95~~ 7.05	9.54	0.850	5.72	110	37	150	4.65
15:10	6.92	9.21	0.801	0.32	79.5	49	150	5.18
15:15	6.89	8.87	0.799	0.68	58.2	48	150	5.57
15:20	6.85	9.11	0.828	0	56.9	20	100	6.04
15:25	6.85	9.12	0.837	0	50	16	100	6.12
15:30	6.85	9.13	0.842	0	54.1	18	100	6.43
15:35	6.86	9.73	0.845	0	52.3	27	100	6.53
15:37	6.86	9.87	0.845	0	58.0	32	100	6.58
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_y = \pi r^2 h$)

Remarks:

9.47 x 617 = 5,842.99 mL → 5.84 Liters
1.54 gallons

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: UTC Carrier Syracuse Site: AR Well I.D.: AR-MW-03

Date: 4-18-16 Sampling Personnel: Ron Russo JF Company: AECOM

Purging/Sampling Device: GeoPump Tubing Type: 1/4 x 3/8 LDPE Pump/Tubing Inlet Location: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 3.28 Depth to Well Bottom: 13.44 Well Diameter: 2" Screen Length:

Casing Type: PVC Volume in 1 Well Casing (liters): 6.26L (1.65 gal) Estimated Purge Volume (liters): 5

Sample ID: AR-MW03 Sample Time: 16:22 QA/QC: NO

Sample Parameters: VOC
PCB
SCB E

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP ~~Eh~~ (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
15:50	7.20	9.50	0.752	6.34	150	137	150	4.06
15:55	6.99	8.44	0.751	0	39	152	150	4.61
16:00	6.99	8.46	0.752	0	40.9	153	150	4.72
16:05	6.97	8.35	0.753	0	15.5	158	100	4.64
16:10	6.95	8.71	0.753	0	13.5	160	100	4.64
16:15	6.95	8.61	0.755	0	7.2	161	100	4.67
16:20	6.94	8.78	0.753	0	3.0	163	100	4.68
16:22	6.94	8.81	0.752	0	3.3	163	100	4.69
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES–0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_l = \pi r^2 h$)

Remarks:

10.16 x 617 = 6268.72 mL → 6.26 L

1.656 gal

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: UTC - AFR Site: Carrier Well I.D.: AR-MW-04

Date: 4/18/16 Sampling Personnel: K. Stahl Company: AECOM

Purging/Sampling Device: GeoPump Tubing Type: 5/8 poly Pump/Tubing Inlet Location: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 8.33 Depth to Well Bottom: _____ Well Diameter: 2 Screen Length: 10

Casing Type: PVC Volume in 1 Well Casing (liters): _____ Estimated Purge Volume (liters): _____

Sample ID: AR-MW-04 Sample Time: 1610 QA/QC: _____

Sample Parameters: VOCs
~~PCBs~~
PCBs Filtered

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP -Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1540	7.18	19.73	1.85	4.53	9.7	148	200	8.70
1545	7.11	17.60	1.86	4.00	6.1	149	200	8.83
1550	7.04	16.98	1.87	3.84	5.7	148	200	8.97
1555	7.03	16.54	1.89	3.76	6.5	148	200	9.10
1600	7.03	16.31	1.89	3.79	6.7	148	200	9.30
1605	7.03	16.01	1.89	3.81	6.8	148	200	9.41
1610	7.03	15.96	1.89	3.97	6.9	148	200	9.56
Tolerance:	0.1	---	3%	10%	10%	+ or - 10	---	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_y = \pi r^2 h$)

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: UIC - AIR Site: Carrick Well I.D.: AR-MW-05

Date: 4/18/16 Sampling Personnel: K. Stahl Company: AECom

Purging/Sampling Device: Geopump Tubing Type: 5/8" Poly Pump/Tubing Inlet Location: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 8.45 Depth to Well Bottom: _____ Well Diameter: 2" Screen Length: _____

Casing Type: PVC Volume in 1 Well Casing (liters): _____ Estimated Purge Volume (liters): 5

Sample ID: AR-MW-05 Sample Time: 1525 QA/QC: _____

Sample Parameters: VOCs
PLBs
PCBs Filtered

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP Eh (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1500	7.50	22.75	4.67	3.99	20.2	151	200	8.71
1505	7.51	21.65	4.56	3.86	14.6	129	200	8.81
1510	7.54	21.38	4.21	3.74	9.1	128	200	8.96
1515	7.46	20.32	4.12	4.09	10.4	129	200	9.01
1520	7.43	20.26	4.13	4.13	8.1	131	200	9.14
1525	7.44	20.20	4.12	4.14	7.6	131	200	9.26
Tolerance:	0.1	—	3%	10%	10%	+ or - 10	—	

Information: WATER VOLUMES–0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: UTC - A&R　　Site: Carrier　　Well I.D.: AR-MW-06

Date: 4/18/16　　Sampling Personnel: K. Stahl　　Company: ______

Purging/ Sampling Device: Geopump　　Tubing Type: 3/8 PE　　Pump/Tubing Inlet Location: Screen midpoint

Measuring Point: Below Top of Riser　　Initial Depth to Water: 9.15　　Depth to Well Bottom: ______　　Well Diameter: 2　　Screen Length: 10

Casing Type: PVC　　Volume in 1 Well Casing (liters): ______　　Estimated Purge Volume (liters): ______

Sample ID: AR-MW-06　　Sample Time: 1445　　QA/QC: ______

Sample Parameters: VOCs
PCBs
PCBs Filtered

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1415	7.81	24.05	0.949	2.06	32.5	132	200	9.42
1420	7.38	19.76	1.01	2.57	27.6	75	200	9.47
1425	7.26	19.29	1.12	2.63	23.8	52	200	9.51
1430	7.26	18.71	1.14	2.64	21.4	51	200	9.65
1435	7.26	18.67	1.16	2.65	20.5	51	200	9.71
1440	7.25	18.68	1.16	2.75	19.1	53	200	9.81
1445	7.25	18.67	1.18	2.86	17.8	55	200	9.95
Tolerance:	0.1	—	3%	10%	10%	+ or - 10	—	

Information: WATER VOLUMES–0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_{cyl} = \pi r^2 h$)

Remarks:

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: _____ Site: UTC-POND Well I.D.: ARSB-02

Date: 4/18/16 Sampling Personnel: Pm Company: _____

Purging/Sampling Device: Geopump Tubing Type: LDPE/Peristaltic Pump/Tubing inlet Location: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 4.47 Depth to Well Bottom: 7.47+0.31= 7.78 Well Diameter: _____ Screen Length: _____

Casing Type: PVC Volume in 1 Well Casing (liters): 3.31 0.51 Estimated Purge Volume (liters): _____

Sample ID: ARSB-02 Sample Time: 1522 QA/QC: —

Sample Parameters: VOCs, PCBs, PCBs (Filtered.

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP ~~Eh~~ (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1452	7.49	15.41	1.49	3.00	806	126	350	4.50
1457	7.35	14.05	1.51	2.75	265	136	350	4.50
1502	7.28	13.02	1.52	2.30	58.2	140	350	4.51
1507	7.18	12.45	1.54	2.05	11.7	143	350	4.52
1512	7.17	12.32	1.54	2.02	8.1	147	350	4.52
1517	7.16	12.18	1.54	@1.98	4.9	150	350	4.52
1522	7.15	12.10	1.55	1.98	1.8	155	350	4.52
Tolerance:	0.1	—	3%	10%	10%	+ or - 10	—	

Information: WATER VOLUMES–0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_c = \pi r^2 h$)

Remarks:

Stickup 2.35

Pump One liter of silty water, bypassing flow thru cell

LOW FLOW GROUNDWATER PURGING/SAMPLING LOG

Project: _____ Site: UTC-Pond Well I.D.: ARSB 04

Date: 4/18/16 Sampling Personnel: RM Company: _____

Purging/Sampling Device: Geopump Tubing Type: _____ Pump/Tubing Inlet Location: Screen midpoint

Measuring Point: Below Top of Riser Initial Depth to Water: 3.68 Depth to Well Bottom: 7.81' Well Diameter: 1" Screen Length: _____

Casing Type: PVC Volume in 1 Well Casing (liters): 4.13 0.64 Estimated Purge Volume (liters): _____

Sample ID: ARSB-04 Sample Time: 1417 QA/QC: _____

Sample Parameters: VOCs, PCBs, PCBs (Filtered)

PURGE PARAMETERS

TIME	pH	TEMP (°C)	COND. (mS/cm)	DISS. O_2 (mg/l)	TURB. (NTU)	ORP (mV)	FLOW RATE (ml/min.)	DEPTH TO WATER (btor)
1327	7.54	23.60	1.69	0.00	854	18	265	3.85
1332	7.39	16.21	2.00	0.00	742	11	250	3.90
1337	7.38	14.94	2.03	0.00	673	1	250	3.80
1342	7.37	13.75	2.08	0.00	676	-4	250	3.83
1347	7.38	12.38	2.15	0.00	375	15	250	3.88
1352	7.38	12.27	2.16	0.00	216	10	250	3.88
1357	7.37	12.10	2.17	0.00	177	5	250	3.88
1402	7.37	10.78	2.27	0.00	441	6	250	3.83
1407	7.37	10.71	2.26	0.00	264	8	250	3.90
1412	7.35	10.77	2.26	0.00	259	-1	250	3.90
1417	7.36	10.84	2.25	0.00	216	-3	250	3.90
Tolerance:	0.1	—	3%	10%	10%	+ or - 10	—	

Information: WATER VOLUMES--0.75 inch diameter well = 87 ml/ft; 1 inch diameter well = 154 ml/ft; 2 inch diameter well = 617 ml/ft; 4 inch diameter well = 2470 ml/ft ($vol_l = \pi r^2 h$)

Remarks:

INITIAL WATER VERY SILTY. Bypass flow cell And Purge Dry (1C)
Allow Recovery then purge as normal

1.70' Stickup

Appendix D

Data Usability Summary Report Narrative

(Appendices available on request)

DATA USABILITY SUMMARY REPORT

A&R BUILDING AREA
UTC/CARRIER SITE
THOMPSON ROAD, SYRACUSE, NY
SITE ID# 734043

Analyses Performed by:

SGS ACCUTEST
MARLBOROUGH, MA

Prepared for:

UNITED TECHNOLOGIES CORP.
UTC SHARED REMEDIATION SERVICES
FARMINGTON, CT

Prepared by:

AECOM
257 WEST GENESEE STREET, SUITE 400
BUFFALO, NY 14202

JUNE 2016

TABLE OF CONTENTS

TABLES

(Following Text)

ATTACHMENTS

I. INTRODUCTION

This Data Usability Summary Report (DUSR) has been prepared following the guidelines provided in New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation *DER-10 Technical Guidance for Site Investigation and Remediation*, Appendix 2B - *Guidance for Data Deliverables and the Development of Data Usability Summary Reports*, May 2010.

II. ANALYTICAL METHODOLOGIES AND DATA VALIDATION PROCEDURES

The data being evaluated are from the April 4 - 18, 2016 sampling of 16 soil samples, 2 soil field duplicates, 2 soil Matrix Spike/Matrix Spike Duplicate (MS/MSD) pairs, 8 groundwater samples, and 1 equipment rinsate blank. All samples were sent to SGS Accutest located in Marlborough, MA and were analyzed for target compound list (TCL) volatile organic compounds (VOCs) plus Tentatively Identified Compounds (TICs) following United States Environmental Protection Agency (USEPA) Method 8260C, TCL semivolatile organic compounds (SVOCs) plus TICs following USEPA Method SW8270D; and TCL PCBs (total and dissolved) following USEPA Method 8082A. Not all samples were analyzed for all parameters.

A limited data validation was performed following the guidelines in the following USEPA Region II documents:

- *Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8260B*, SOP HW-24, Rev. 2, August 2008;
- *Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, SW-846 Method 8270D*, SOP HW-22, Rev. 4, August 2008;
- *Polychlorinated Biphenyl (PCB) Aroclor Data Validation,* SOP HW-37, Rev. 3, May 2013;

Qualifications applied to the data during the limited data validation include 'R' (rejected), 'J' (estimated concentration), 'U' (non-detect), and 'UJ' (estimated quantitation limit). Definitions of USEPA data qualifiers are presented at the end of this text. The validated analytical results are presented on Tables 1 – 4. Copies of marked-up laboratory analytical summaries (Form 1s) are presented in Attachment A on a per sample delivery group (SDG) basis. Documentation supporting the qualification

of data is presented in Attachment B on a per sample delivery group basis. Only analytical deviations affecting data usability are discussed in this report.

III. DATA DELIVERABLE COMPLETENESS

Full deliverable data packages (i.e., NYSDEC Category B or equivalent) were provided by the laboratory, which included all reporting forms and raw data necessary to fully evaluate and verify the reported analytical results.

IV. SAMPLE RECEIPT/PRESERVATION/HOLDING TIMES

All samples were received by the laboratory intact, properly preserved and under proper chain-of-custody (COC). All samples were analyzed within the required holding times, except for the following instance:

- The initial VOC analysis of sample AR-SB-02 (0.5-1.5) occurred within the holding time. The laboratory re-analyzed the sample outside of the holding time due to a QC issue with carbon disulfide. Only the result of carbon disulfide are being reported from the re-analysis and have been qualified 'J' due to the holding time exceedance.

V. NON-CONFORMANCES

- **Surrogates**

  The percent recovery (%R) of VOC surrogate bromofluorobenzene was above the upper QC limit in some of the samples. The detected VOC results in the associated samples as listed on the surrogate recovery summary form were qualified 'J'.

  The %R of PCB surrogate tetrachloro-m-xylene (TMX) was below the QC limit on both columns for sample AR-SB-07 (3-4). The PCB results for this sample have been qualified 'J' or 'UJ'.

  Support documentation (i.e., surrogate recovery summary form) is presented in Appendix B.

- **Instrument Calibration**

  The relative response factors (RRF) for acetone and/or 2-butanone in the initial calibration (ICAL) and continuing calibration standards (CCAL) were below the QC limit of 0.100. The

non-detect results for these compounds in the associated samples as listed on the instrument performance check forms were qualified 'R' and the detected compounds were qualified 'J'.

The percent difference (%D) between the ICAL average RRF and the RRF in one or more of the CCALs associated with the samples exceeded the QC limit of 20% for one or more of the following VOCs: 2-butanone, 1,1-dichloroethene, 1,2-dichloroethane, 2-hexanone, 1,1,2,2-tetrachloroethane, 1,1,1,-trichloroethane, acetone, bromomethane, carbon disulfide, carbon tetrachloride, chloromethane, trans-1,2-dichloroethene, trans-1,3-dichloropropene, and/or vinyl chloride. The results for these compounds in the associated samples as listed on the instrument performance check forms were qualified 'J' or 'UJ'.

The %D between the ICAL RRF and the RRF in one or more of the CCAL standards associated with the samples exceeded the QC limit of 20% for one or more of the following SVOCs: 4,6-dinitro-2-methylphenol, 2-nitrophenol, and/or butylbenzylphthalate. The results for these compounds in the associated samples as listed on the instrument performance check forms were qualified 'UJ'.

Support documentation (i.e., instrument performance check form, continuing calibration summary form) is provided in Attachment B.

- **Matrix Spike Blanks (MSB)**

The VOC MSB was above the QC limit for acetone. The detected results for this compound in the associated samples as listed on the blank spike summary form have been qualified 'J'.

The VOC MSB was less than the QC limit for styrene. The non-detect results for this compound in the associated samples as listed on the blank spike summary form have been qualified 'UJ'.

Support documentation (i.e., Blank Spike/Blank Spike Duplicate Summary form) is provided in Attachment B.

- **Method Blanks**

VOC methylene chloride was detected below the reporting limit (RL) in the laboratory method blanks associated with the samples. Those associated samples that had concentrations of this compound less than the RL were qualified 'U' at the RL.

Support documentation (i.e., method blank summary form, report of analysis form) is provided in Attachment B.

- **Internal Standards (VOCs and SVOCs only)**

  The %Rs of VOC internal standards (IS) chlorobenzene-d_5 and/or 1,4-dichlorobenzene-d_4 were below QC limits in the samples. The compounds associated with the IS outliers in the samples listed on the internal standard area summary form have been qualified 'UJ'.

- **Chromatography**

  The laboratory noted in the case narrative that some samples exhibited interference due to multiple aroclors being present with overlapping peaks. Those samples that are affected have been noted in the laboratory case narrative and on the Form Is. The affected aroclors have been qualified 'J' in accordance with the labs notation.

  The %Ds between the dual-column analyses for the samples exceeded QC limits (>25%) for one or more PCBs. The PCB results for the affected samples have been qualified 'J', 'NJ', 'U', or 'R' in accordance with the following validation guidelines.

% Difference	Qualifier
0-25%	none
26-100%	'J'
101-200% (interference detected)	'NJ'
>50% (value is < QL on both columns)	'U'
>200%	'R'

Support documentation (i.e., GC Identification Summary forms) is provided in Attachment B.

- **Field Duplicates**

  Field duplicates were collected at sample locations AR-MW-02 (4.5-5.5) and AR-SB-08 (0.5-1.5) and exhibited good field and analytical precision.

VI. SAMPLE RESULTS AND REPORTING

All quantitation/detection limits were reported in accordance with method requirements and were adjusted for sample volume, moisture content, and dilution factors. Results below the quantitation limits

were qualified 'J' by the laboratory. All quantitation limits were reported in accordance with method requirements and were adjusted for dilution factors.

For TICs (VOC and SVOC only), some compounds were identified as "column artifacts/column bleed" (i.e., siloxanes), method blank contamination, and target compounds reported in the wrong fraction (i.e., a VOC reported as a TIC in the SVOC fraction). TICs identified as such were crossed out on the Form I and should be disregarded.

The concentrations of VOC acetone in sample AR-SB-08 (2.5-4) was greater than the calibration curve and was qualified 'E'. The sample was not analyzed at a dilution. The 'E' qualifier has been changed to 'J' by the data validator.

VII. SUMMARY

All sample analyses were found to be compliant with the method and validation criteria, except where previously noted. Those results qualified 'R' are considered unusable. Those results qualified 'J', 'U', and 'UJ' are considered conditionally usable. All other sample results are usable as reported. URS does not recommend the recollection of any samples at this time.

Prepared By: Ann Marie Kropovitch, Chemist **Date:** 6/24/16

Reviewed By: George E. Kisluk, Senior Chemist **Date:** 6/24/16

DEFINITIONS OF USEPA DATA QUALIFIERS

U –	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J –	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
(J+) -	The result is an estimated quantity. The associated numerical value is biased high.
(J-) -	The result is an estimated quantity. The associated numerical value is biased low.
UJ –	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R –	The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.
D –	The sample result was reported from a secondary dilution analysis.
NJ –	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-01	AR-MW-02	AR-MW-02	AR-MW-03	AR-MW-04
Sample ID		AR-MW-01-6-7	AR-MW-02-4.5-5.5	FD-040416	AR-MW-03-5-6	AR-MW-04-5-6
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		6.0-7.0	4.5-5.5	4.5-5.5	5.0-6.0	5.0-6.0
Date Sampled		04/04/16	04/04/16	04/04/16	04/05/16	04/06/16
Parameter	Units			Field Duplicate (1-1)		
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 UJ
1,1,2,2-Tetrachloroethane	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
1,1,2-Trichloroethane	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
1,1-Dichloroethane	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
1,1-Dichloroethene	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
1,2-Dichloroethane	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
1,2-Dichloroethene (cis)	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
1,2-Dichloroethene (trans)	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
1,2-Dichloropropane	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
1,3-Dichloropropene (cis)	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
1,3-Dichloropropene (trans)	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
2-Hexanone	UG/KG	10 U	9.4 U	8.9 U	10 U	11 U
4-Methyl-2-pentanone	UG/KG	5.2 U	4.7 U	4.5 U	5 U	5.6 U
Acetone	UG/KG	10 UJ	23.6 J	26.4 J	176 J	180 J
Benzene	UG/KG	0.52 U	0.47 U	0.45 U	0.59	1.2
Bromodichloromethane	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
Bromoform	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
Bromomethane	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
Carbon disulfide	UG/KG	5.2 U	4.7 U	4.5 U	5 U	5.6 UJ
Carbon tetrachloride	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 UJ
Chlorobenzene	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
Chloroethane	UG/KG	5.2 U	4.7 U	4.5 U	5 U	5.6 U
Chloroform	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-01	AR-MW-02	AR-MW-02	AR-MW-03	AR-MW-04
Sample ID		AR-MW-01-6-7	AR-MW-02-4.5-5.5	FD-040416	AR-MW-03-5-6	AR-MW-04-5-6
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		6.0-7.0	4.5-5.5	4.5-5.5	5.0-6.0	5.0-6.0
Date Sampled		04/04/16	04/04/16	04/04/16	04/05/16	04/06/16
Parameter	Units			Field Duplicate (1-1)		
Volatile Organic Compounds						
Chloromethane	UG/KG	5.2 U	4.7 U	4.5 U	5 U	5.6 UJ
Dibromochloromethane	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
Ethylbenzene	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
Methyl ethyl ketone (2-Butanone)	UG/KG	10 UJ	19 UJ	18 U	20 U	22 U
Methylene chloride	UG/KG	2.1 U	0.50 J	1.8 U	0.82 J	1.3 J
Styrene	UG/KG	5.2 U	4.7 U	4.5 U	5 U	5.6 U
Tetrachloroethene	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
Toluene	UG/KG	5.2 U	4.7 U	4.5 U	0.49 J	0.67 J
Trichloroethene	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
Vinyl chloride	UG/KG	2.1 UJ	1.9 U	1.8 U	2 U	2.2 UJ
Xylene (total)	UG/KG	2.1 U	1.9 U	1.8 U	2 U	2.2 U
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	UG/KG	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	UG/KG	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	UG/KG	NA	NA	NA	NA	NA
2,4-Dichlorophenol	UG/KG	NA	NA	NA	NA	NA
2,4-Dimethylphenol	UG/KG	NA	NA	NA	NA	NA
2,4-Dinitrophenol	UG/KG	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	UG/KG	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	UG/KG	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-01	AR-MW-02	AR-MW-02	AR-MW-03	AR-MW-04
Sample ID		AR-MW-01-6-7	AR-MW-02-4.5-5.5	FD-040416	AR-MW-03-5-6	AR-MW-04-5-6
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		6.0-7.0	4.5-5.5	4.5-5.5	5.0-6.0	5.0-6.0
Date Sampled		04/04/16	04/04/16	04/04/16	04/05/16	04/06/16
Parameter	Units			Field Duplicate (1-1)		
Semivolatile Organic Compounds						
2-Chloronaphthalene	UG/KG	NA	NA	NA	NA	NA
2-Chlorophenol	UG/KG	NA	NA	NA	NA	NA
2-Methylnaphthalene	UG/KG	NA	NA	NA	NA	NA
2-Methylphenol (o-cresol)	UG/KG	NA	NA	NA	NA	NA
2-Nitroaniline	UG/KG	NA	NA	NA	NA	NA
2-Nitrophenol	UG/KG	NA	NA	NA	NA	NA
3,3-Dichlorobenzidine	UG/KG	NA	NA	NA	NA	NA
3-Nitroaniline	UG/KG	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	UG/KG	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	UG/KG	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	UG/KG	NA	NA	NA	NA	NA
4-Chloroaniline	UG/KG	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	UG/KG	NA	NA	NA	NA	NA
4-Methylphenol (p-cresol)	UG/KG	NA	NA	NA	NA	NA
4-Nitroaniline	UG/KG	NA	NA	NA	NA	NA
4-Nitrophenol	UG/KG	NA	NA	NA	NA	NA
Acenaphthene	UG/KG	NA	NA	NA	NA	NA
Acenaphthylene	UG/KG	NA	NA	NA	NA	NA
Anthracene	UG/KG	NA	NA	NA	NA	NA
Benzo(a)anthracene	UG/KG	NA	NA	NA	NA	NA
Benzo(a)pyrene	UG/KG	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	UG/KG	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	UG/KG	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

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TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-01	AR-MW-02	AR-MW-02	AR-MW-03	AR-MW-04
Sample ID		AR-MW-01-6-7	AR-MW-02-4.5-5.5	FD-040416	AR-MW-03-5-6	AR-MW-04-5-6
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		6.0-7.0	4.5-5.5	4.5-5.5	5.0-6.0	5.0-6.0
Date Sampled		04/04/16	04/04/16	04/04/16	04/05/16	04/06/16
Parameter	Units			Field Duplicate (1-1)		
Semivolatile Organic Compounds						
Benzo(k)fluoranthene	UG/KG	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	UG/KG	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	UG/KG	NA	NA	NA	NA	NA
Bis(2-chloroisopropyl) ether	UG/KG	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	UG/KG	NA	NA	NA	NA	NA
Butylbenzylphthalate	UG/KG	NA	NA	NA	NA	NA
Carbazole	UG/KG	NA	NA	NA	NA	NA
Chrysene	UG/KG	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	UG/KG	NA	NA	NA	NA	NA
Dibenzofuran	UG/KG	NA	NA	NA	NA	NA
Diethylphthalate	UG/KG	NA	NA	NA	NA	NA
Dimethylphthalate	UG/KG	NA	NA	NA	NA	NA
Di-n-butylphthalate	UG/KG	NA	NA	NA	NA	NA
Di-n-octylphthalate	UG/KG	NA	NA	NA	NA	NA
Fluoranthene	UG/KG	NA	NA	NA	NA	NA
Fluorene	UG/KG	NA	NA	NA	NA	NA
Hexachlorobenzene	UG/KG	NA	NA	NA	NA	NA
Hexachlorobutadiene	UG/KG	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	UG/KG	NA	NA	NA	NA	NA
Hexachloroethane	UG/KG	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	UG/KG	NA	NA	NA	NA	NA
Isophorone	UG/KG	NA	NA	NA	NA	NA
Naphthalene	UG/KG	NA	NA	NA	NA	NA

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-01	AR-MW-02	AR-MW-02	AR-MW-03	AR-MW-04
Sample ID		AR-MW-01-6-7	AR-MW-02-4.5-5.5	FD-040416	AR-MW-03-5-6	AR-MW-04-5-6
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		6.0-7.0	4.5-5.5	4.5-5.5	5.0-6.0	5.0-6.0
Date Sampled		04/04/16	04/04/16	04/04/16	04/05/16	04/06/16
Parameter	Units			Field Duplicate (1-1)		
Semivolatile Organic Compounds						
Nitrobenzene	UG/KG	NA	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	UG/KG	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	UG/KG	NA	NA	NA	NA	NA
Pentachlorophenol	UG/KG	NA	NA	NA	NA	NA
Phenanthrene	UG/KG	NA	NA	NA	NA	NA
Phenol	UG/KG	NA	NA	NA	NA	NA
Pyrene	UG/KG	NA	NA	NA	NA	NA
Polychlorinated Biphenyls						
Aroclor 1016	UG/KG	40 U	36 U	35 U	40 U	34 U
Aroclor 1221	UG/KG	40 U	36 U	35 U	40 U	34 U
Aroclor 1232	UG/KG	40 U	36 U	35 U	40 U	34 U
Aroclor 1242	UG/KG	40 U	36 U	35 U	40 U	34 U
Aroclor 1248	UG/KG	40 U	36 U	35 U	40 U	34 U
Aroclor 1254	UG/KG	40 U	36 U	35 U	40 U	34 U
Aroclor 1260	UG/KG	40 U	24.3 J	35 U	40 U	34 U
Total Polychlorinated Biphenyls	UG/KG	40 U	24.3 J	35 U	40 U	34 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-05	AR-MW-06	AR-SB-01	AR-SB-02	AR-SB-03
Sample ID		AR-MW-05-5-7	AR-MW-06(5-6)	AR-SB-01(3.5-4)	AR-SB-02(4-4.5)	AR-SB-03(3.8-4.3)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		5.0-7.0	5.0-6.0	3.5-4.0	4.0-4.5	3.8-4.3
Date Sampled		04/06/16	04/07/16	04/07/16	04/07/16	04/07/16
Parameter	Units					
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/KG	2.2 UJ	2.1 UJ	3.1 U	2.1 U	2.6 U
1,1,2,2-Tetrachloroethane	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
1,1,2-Trichloroethane	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
1,1-Dichloroethane	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
1,1-Dichloroethene	UG/KG	2.2 U	2.1 U	3.1 UJ	2.1 UJ	2.6 UJ
1,2-Dichloroethane	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
1,2-Dichloroethene (cis)	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
1,2-Dichloroethene (trans)	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
1,2-Dichloropropane	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
1,3-Dichloropropene (cis)	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
1,3-Dichloropropene (trans)	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
2-Hexanone	UG/KG	11 U	10 U	15 U	11 U	13 U
4-Methyl-2-pentanone	UG/KG	5.5 U	5.1 U	7.7 U	5.3 U	6.4 U
Acetone	UG/KG	60.4 J	77.4 J	543	267	361
Benzene	UG/KG	0.55 U	0.47 J	0.77 U	0.41 J	0.64 U
Bromodichloromethane	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
Bromoform	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
Bromomethane	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
Carbon disulfide	UG/KG	2.5 J	0.96 J	55.6 J	30.4 J	45.9 J
Carbon tetrachloride	UG/KG	2.2 UJ	2.1 UJ	3.1 U	2.1 U	2.6 U
Chlorobenzene	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
Chloroethane	UG/KG	5.5 U	5.1 U	7.7 U	5.3 U	6.4 U
Chloroform	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-05	AR-MW-06	AR-SB-01	AR-SB-02	AR-SB-03
Sample ID		AR-MW-05-5-7	AR-MW-06(5-6)	AR-SB-01(3.5-4)	AR-SB-02(4-4.5)	AR-SB-03(3.8-4.3)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		5.0-7.0	5.0-6.0	3.5-4.0	4.0-4.5	3.8-4.3
Date Sampled		04/06/16	04/07/16	04/07/16	04/07/16	04/07/16
Parameter	Units					
Volatile Organic Compounds						
Chloromethane	UG/KG	5.5 UJ	5.1 UJ	7.7 U	5.3 U	6.4 U
Dibromochloromethane	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
Ethylbenzene	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
Methyl ethyl ketone (2-Butanone)	UG/KG	22 U	21 U	54.9	31.5	33.6
Methylene chloride	UG/KG	0.79 J	0.47 J	3.1 U	2.1 U	2.6 U
Styrene	UG/KG	5.5 U	5.1 U	7.7 U	5.3 U	6.4 U
Tetrachloroethene	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
Toluene	UG/KG	5.5 U	0.45 J	7.7 U	0.56 J	6.4 U
Trichloroethene	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
Vinyl chloride	UG/KG	2.2 UJ	2.1 UJ	3.1 U	2.1 U	2.6 U
Xylene (total)	UG/KG	2.2 U	2.1 U	3.1 U	2.1 U	2.6 U
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	UG/KG	NA	290 U	370 U	310 U	340 U
1,2-Dichlorobenzene	UG/KG	NA	290 U	370 U	310 U	340 U
1,3-Dichlorobenzene	UG/KG	NA	290 U	370 U	310 U	340 U
1,4-Dichlorobenzene	UG/KG	NA	290 U	370 U	310 U	340 U
2,4,5-Trichlorophenol	UG/KG	NA	570 U	740 U	620 U	680 U
2,4,6-Trichlorophenol	UG/KG	NA	570 U	740 U	620 U	680 U
2,4-Dichlorophenol	UG/KG	NA	570 U	740 U	620 U	680 U
2,4-Dimethylphenol	UG/KG	NA	570 U	740 U	620 U	680 U
2,4-Dinitrophenol	UG/KG	NA	1,100 U	1,500 U	1,200 U	1,400 U
2,4-Dinitrotoluene	UG/KG	NA	570 U	740 U	620 U	680 U
2,6-Dinitrotoluene	UG/KG	NA	570 U	740 U	620 U	680 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-05	AR-MW-06	AR-SB-01	AR-SB-02	AR-SB-03
Sample ID		AR-MW-05-5-7	AR-MW-06(5-6)	AR-SB-01(3.5-4)	AR-SB-02(4-4.5)	AR-SB-03(3.8-4.3)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		5.0-7.0	5.0-6.0	3.5-4.0	4.0-4.5	3.8-4.3
Date Sampled		04/06/16	04/07/16	04/07/16	04/07/16	04/07/16
Parameter	Units					
Semivolatile Organic Compounds						
2-Chloronaphthalene	UG/KG	NA	290 U	370 U	310 U	340 U
2-Chlorophenol	UG/KG	NA	290 U	370 U	310 U	340 U
2-Methylnaphthalene	UG/KG	NA	111	150 U	120 U	140 U
2-Methylphenol (o-cresol)	UG/KG	NA	570 U	740 U	620 U	680 U
2-Nitroaniline	UG/KG	NA	570 U	740 U	620 U	680 U
2-Nitrophenol	UG/KG	NA	570 U	740 UJ	620 UJ	680 UJ
3,3-Dichlorobenzidine	UG/KG	NA	290 U	370 U	310 U	340 U
3-Nitroaniline	UG/KG	NA	570 U	740 U	620 U	680 U
4,6-Dinitro-2-methylphenol	UG/KG	NA	570 U	740 UJ	620 UJ	680 UJ
4-Bromophenyl-phenylether	UG/KG	NA	290 U	370 U	310 U	340 U
4-Chloro-3-methylphenol	UG/KG	NA	570 U	740 U	620 U	680 U
4-Chloroaniline	UG/KG	NA	570 U	740 U	620 U	680 U
4-Chlorophenyl-phenylether	UG/KG	NA	290 U	370 U	310 U	340 U
4-Methylphenol (p-cresol)	UG/KG	NA	570 U	740 U	620 U	680 U
4-Nitroaniline	UG/KG	NA	570 U	740 U	620 U	680 U
4-Nitrophenol	UG/KG	NA	1,100 U	1,500 U	1,200 U	1,400 U
Acenaphthene	UG/KG	NA	21.9 J	31.4 J	120 U	140 U
Acenaphthylene	UG/KG	NA	110 U	150 U	120 U	140 U
Anthracene	UG/KG	NA	110 U	150 U	120 U	140 U
Benzo(a)anthracene	UG/KG	NA	11.8 J	107 J	120 U	66.9 J
Benzo(a)pyrene	UG/KG	NA	110 U	112 J	120 U	68.8 J
Benzo(b)fluoranthene	UG/KG	NA	110 U	141 J	120 U	74.4 J
Benzo(g,h,i)perylene	UG/KG	NA	110 U	90.3 J	120 U	50.7 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-05	AR-MW-06	AR-SB-01	AR-SB-02	AR-SB-03
Sample ID		AR-MW-05-5-7	AR-MW-06(5-6)	AR-SB-01(3.5-4)	AR-SB-02(4-4.5)	AR-SB-03(3.8-4.3)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		5.0-7.0	5.0-6.0	3.5-4.0	4.0-4.5	3.8-4.3
Date Sampled		04/06/16	04/07/16	04/07/16	04/07/16	04/07/16
Parameter	Units					
Semivolatile Organic Compounds						
Benzo(k)fluoranthene	UG/KG	NA	110 U	118 J	120 U	66.2 J
bis(2-Chloroethoxy)methane	UG/KG	NA	290 U	370 U	310 U	340 U
bis(2-Chloroethyl)ether	UG/KG	NA	290 U	370 U	310 U	340 U
Bis(2-chloroisopropyl) ether	UG/KG	NA	290 U	370 U	310 U	340 U
bis(2-Ethylhexyl)phthalate	UG/KG	NA	290 U	286 J	310 U	91.3 J
Butylbenzylphthalate	UG/KG	NA	290 U	370 U	310 U	340 U
Carbazole	UG/KG	NA	110 U	150 U	120 U	140 U
Chrysene	UG/KG	NA	12.7 J	164	120 U	79.1 J
Dibenz(a,h)anthracene	UG/KG	NA	110 U	31.4 J	120 U	140 U
Dibenzofuran	UG/KG	NA	110 U	150 U	120 U	140 U
Diethylphthalate	UG/KG	NA	290 U	370 U	310 U	340 U
Dimethylphthalate	UG/KG	NA	290 U	370 U	310 U	340 U
Di-n-butylphthalate	UG/KG	NA	290 U	370 U	310 U	340 U
Di-n-octylphthalate	UG/KG	NA	290 U	370 U	310 U	340 U
Fluoranthene	UG/KG	NA	26.6 J	321	120 U	219
Fluorene	UG/KG	NA	37.6 J	24.1 J	120 U	140 U
Hexachlorobenzene	UG/KG	NA	290 U	370 U	310 U	340 U
Hexachlorobutadiene	UG/KG	NA	290 U	370 U	310 U	340 U
Hexachlorocyclopentadiene	UG/KG	NA	570 U	740 U	620 U	680 U
Hexachloroethane	UG/KG	NA	290 U	370 U	310 U	340 U
Indeno(1,2,3-cd)pyrene	UG/KG	NA	110 U	78.9 J	120 U	46.0 J
Isophorone	UG/KG	NA	290 U	370 U	310 U	340 U
Naphthalene	UG/KG	NA	110 U	150 U	120 U	140 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-05	AR-MW-06	AR-SB-01	AR-SB-02	AR-SB-03
Sample ID		AR-MW-05-5-7	AR-MW-06(5-6)	AR-SB-01(3.5-4)	AR-SB-02(4-4.5)	AR-SB-03(3.8-4.3)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		5.0-7.0	5.0-6.0	3.5-4.0	4.0-4.5	3.8-4.3
Date Sampled		04/06/16	04/07/16	04/07/16	04/07/16	04/07/16
Parameter	Units					
Semivolatile Organic Compounds						
Nitrobenzene	UG/KG	NA	290 U	370 U	310 U	340 U
N-Nitroso-di-n-propylamine	UG/KG	NA	290 U	370 U	310 U	340 U
N-Nitrosodiphenylamine	UG/KG	NA	290 U	370 U	310 U	340 U
Pentachlorophenol	UG/KG	NA	570 U	740 U	620 U	680 U
Phenanthrene	UG/KG	NA	74.5 J	118 J	120 U	39.9 J
Phenol	UG/KG	NA	290 U	370 U	310 U	340 U
Pyrene	UG/KG	NA	25.7 J	275	120 U	189
Polychlorinated Biphenyls						
Aroclor 1016	UG/KG	43 U	39 U	49 U	40 U	46 U
Aroclor 1221	UG/KG	43 U	39 U	49 U	40 U	46 U
Aroclor 1232	UG/KG	43 U	39 U	49 U	40 U	46 U
Aroclor 1242	UG/KG	43 U	39 U	49 U	40 U	46 U
Aroclor 1248	UG/KG	43 U	39 U	154 J	40 U	73.2 J
Aroclor 1254	UG/KG	43 U	39 U	281	40 U	133
Aroclor 1260	UG/KG	43 U	39 U	73.2 J	40 U	52.9 J
Total Polychlorinated Biphenyls	UG/KG	43 U	39 U	508.2 J	40 U	259.1 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
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Detection Limits shown are PQL

TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-SB-04	AR-SB-05	AR-SB-06	AR-SB-07	AR-SB-08
Sample ID		AR-SB-04(2.5-4)	AR-SB-05(4.2-5)	AR-SB-06-3-4	AR-SB-07(3-4)	AR-SB-08(2.5-4)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		2.5-4.0	4.2-5.0	3.0-4.0	3.0-4.0	2.5-4.0
Date Sampled		04/07/16	04/07/16	04/04/16	04/07/16	04/07/16
Parameter	Units					
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/KG	3 U	3.3 UJ	5.8 U	3.5 U	3.7 UJ
1,1,2,2-Tetrachloroethane	UG/KG	3 U	3.3 UJ	5.8 U	3.5 U	3.7 U
1,1,2-Trichloroethane	UG/KG	3 U	3.3 U	5.8 U	3.5 U	3.7 U
1,1-Dichloroethane	UG/KG	3 U	3.3 U	5.8 U	3.5 U	3.7 U
1,1-Dichloroethene	UG/KG	3 UJ	3.3 UJ	5.8 U	3.5 UJ	3.7 U
1,2-Dichloroethane	UG/KG	3 U	3.3 U	5.8 U	3.5 U	3.7 U
1,2-Dichloroethene (cis)	UG/KG	3 U	3.3 U	5.8 U	3.5 U	3.7 U
1,2-Dichloroethene (trans)	UG/KG	3 U	3.3 U	5.8 U	3.5 U	3.7 U
1,2-Dichloropropane	UG/KG	3 U	3.3 U	5.8 U	3.5 U	3.7 U
1,3-Dichloropropene (cis)	UG/KG	3 U	3.3 U	5.8 U	3.5 U	3.7 U
1,3-Dichloropropene (trans)	UG/KG	3 U	3.3 U	5.8 U	3.5 U	3.7 U
2-Hexanone	UG/KG	15 U	17 UJ	29 U	17 U	19 U
4-Methyl-2-pentanone	UG/KG	7.5 U	8.4 U	14 U	8.6 U	9.3 U
Acetone	UG/KG	15 U	1,220 J	R	614	1,710 J
Benzene	UG/KG	0.75 U	0.96 J	2.3 J	0.86 U	0.93 U
Bromodichloromethane	UG/KG	3 U	3.3 U	5.8 U	3.5 U	3.7 U
Bromoform	UG/KG	3 U	3.3 UJ	5.8 U	3.5 U	3.7 U
Bromomethane	UG/KG	3 U	3.3 U	5.8 U	3.5 U	3.7 U
Carbon disulfide	UG/KG	42.2 J	67.7 J	298 J	32.9 J	47.5 J
Carbon tetrachloride	UG/KG	3 U	3.3 UJ	5.8 U	3.5 U	3.7 UJ
Chlorobenzene	UG/KG	3 U	3.3 UJ	5.8 U	3.5 U	3.7 U
Chloroethane	UG/KG	7.5 U	8.4 U	14 U	8.6 U	9.3 U
Chloroform	UG/KG	3 U	3.3 U	5.8 U	3.5 U	3.7 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-SB-04	AR-SB-05	AR-SB-06	AR-SB-07	AR-SB-08
Sample ID		AR-SB-04(2.5-4)	AR-SB-05(4.2-5)	AR-SB-06-3-4	AR-SB-07(3-4)	AR-SB-08(2.5-4)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		2.5-4.0	4.2-5.0	3.0-4.0	3.0-4.0	2.5-4.0
Date Sampled		04/07/16	04/07/16	04/04/16	04/07/16	04/07/16
Parameter	Units					
Volatile Organic Compounds						
Chloromethane	UG/KG	7.5 U	8.4 UJ	14 U	8.6 U	9.3 UJ
Dibromochloromethane	UG/KG	3 U	3.3 UJ	5.8 U	3.5 U	3.7 U
Ethylbenzene	UG/KG	3 U	3.3 UJ	5.8 U	3.5 U	3.7 U
Methyl ethyl ketone (2-Butanone)	UG/KG	51.3	143 J	315 J	63.2	223
Methylene chloride	UG/KG	3 U	3.3 U	1.7 J	3.5 U	0.82 J
Styrene	UG/KG	7.5 U	8.4 UJ	14 U	8.6 U	9.3 U
Tetrachloroethene	UG/KG	3 U	3.3 UJ	5.8 U	3.5 U	3.7 U
Toluene	UG/KG	7.5 U	1.8 J	3.9 J	8.6 U	0.92 J
Trichloroethene	UG/KG	3 U	3.3 U	5.8 U	3.5 U	3.7 U
Vinyl chloride	UG/KG	3 U	3.3 UJ	5.8 U	3.5 U	3.7 UJ
Xylene (total)	UG/KG	3 U	3.3 UJ	1.3 J	3.5 U	0.91 J
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	UG/KG	380 U	710 U	3,500 U	360 U	380 U
1,2-Dichlorobenzene	UG/KG	380 U	710 U	3,500 U	360 U	380 U
1,3-Dichlorobenzene	UG/KG	380 U	710 U	3,500 U	360 U	380 U
1,4-Dichlorobenzene	UG/KG	380 U	710 U	3,500 U	360 U	380 U
2,4,5-Trichlorophenol	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
2,4,6-Trichlorophenol	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
2,4-Dichlorophenol	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
2,4-Dimethylphenol	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
2,4-Dinitrophenol	UG/KG	1,500 U	2,800 U	14,000 U	1,500 U	1,500 U
2,4-Dinitrotoluene	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
2,6-Dinitrotoluene	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-SB-04	AR-SB-05	AR-SB-06	AR-SB-07	AR-SB-08
Sample ID		AR-SB-04(2.5-4)	AR-SB-05(4.2-5)	AR-SB-06-3-4	AR-SB-07(3-4)	AR-SB-08(2.5-4)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		2.5-4.0	4.2-5.0	3.0-4.0	3.0-4.0	2.5-4.0
Date Sampled		04/07/16	04/07/16	04/04/16	04/07/16	04/07/16
Parameter	Units					
Semivolatile Organic Compounds						
2-Chloronaphthalene	UG/KG	380 U	710 U	3,500 U	360 U	380 U
2-Chlorophenol	UG/KG	380 U	710 U	3,500 U	360 U	380 U
2-Methylnaphthalene	UG/KG	150 U	280 U	1,400 U	150 U	150 U
2-Methylphenol (o-cresol)	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
2-Nitroaniline	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
2-Nitrophenol	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
3,3-Dichlorobenzidine	UG/KG	380 U	710 U	3,500 U	360 U	380 U
3-Nitroaniline	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
4,6-Dinitro-2-methylphenol	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
4-Bromophenyl-phenylether	UG/KG	380 U	710 U	3,500 U	360 U	380 U
4-Chloro-3-methylphenol	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
4-Chloroaniline	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
4-Chlorophenyl-phenylether	UG/KG	380 U	710 U	3,500 U	360 U	380 U
4-Methylphenol (p-cresol)	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
4-Nitroaniline	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
4-Nitrophenol	UG/KG	1,500 U	2,800 U	14,000 U	1,500 U	1,500 U
Acenaphthene	UG/KG	63.5 J	155 J	1,400 U	150 U	33.1 J
Acenaphthylene	UG/KG	89.8 J	280 U	1,400 U	150 U	150 U
Anthracene	UG/KG	247	280 U	205 J	29.3 J	80.3 J
Benzo(a)anthracene	UG/KG	588	677	600 J	99.1 J	249
Benzo(a)pyrene	UG/KG	554	638	1,790	119 J	247
Benzo(b)fluoranthene	UG/KG	607	874	2,060	134 J	337
Benzo(g,h,i)perylene	UG/KG	360	505	629 J	92.1 J	190

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-SB-04	AR-SB-05	AR-SB-06	AR-SB-07	AR-SB-08
Sample ID		AR-SB-04(2.5-4)	AR-SB-05(4.2-5)	AR-SB-06-3-4	AR-SB-07(3-4)	AR-SB-08(2.5-4)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		2.5-4.0	4.2-5.0	3.0-4.0	3.0-4.0	2.5-4.0
Date Sampled		04/07/16	04/07/16	04/04/16	04/07/16	04/07/16
Parameter	Units					
Semivolatile Organic Compounds						
Benzo(k)fluoranthene	UG/KG	476	562	748 J	105 J	229
bis(2-Chloroethoxy)methane	UG/KG	380 U	710 U	3,500 U	360 U	380 U
bis(2-Chloroethyl)ether	UG/KG	380 U	710 U	3,500 U	360 U	380 U
Bis(2-chloroisopropyl) ether	UG/KG	380 U	710 U	3,500 U	360 U	380 U
bis(2-Ethylhexyl)phthalate	UG/KG	867	710 U	3,470 J	304 J	295 J
Butylbenzylphthalate	UG/KG	380 U	710 U	3,500 U	360 U	380 U
Carbazole	UG/KG	150 U	280 U	1,400 U	150 U	150 U
Chrysene	UG/KG	726	1,080	974 J	153	397
Dibenz(a,h)anthracene	UG/KG	126 J	157 J	1,400 U	150 U	57.3 J
Dibenzofuran	UG/KG	49.5 J	280 U	1,400 U	150 U	150 U
Diethylphthalate	UG/KG	380 U	710 U	3,500 U	360 U	380 U
Dimethylphthalate	UG/KG	380 U	710 U	3,500 U	360 U	380 U
Di-n-butylphthalate	UG/KG	380 U	710 U	3,500 U	360 U	380 U
Di-n-octylphthalate	UG/KG	380 U	710 U	3,500 U	360 U	380 U
Fluoranthene	UG/KG	1,600	280 U	1,960	280	780
Fluorene	UG/KG	136 J	280 U	1,400 U	150 U	150 U
Hexachlorobenzene	UG/KG	380 U	710 U	3,500 U	360 U	380 U
Hexachlorobutadiene	UG/KG	380 U	710 U	3,500 U	360 U	380 U
Hexachlorocyclopentadiene	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
Hexachloroethane	UG/KG	380 U	710 U	3,500 U	360 U	380 U
Indeno(1,2,3-cd)pyrene	UG/KG	341	425	2,870	77.8 J	158
Isophorone	UG/KG	380 U	710 U	3,500 U	360 U	380 U
Naphthalene	UG/KG	150 U	280 U	1,400 U	150 U	150 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 1
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45206
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-SB-04	AR-SB-05	AR-SB-06	AR-SB-07	AR-SB-08
Sample ID		AR-SB-04(2.5-4)	AR-SB-05(4.2-5)	AR-SB-06-3-4	AR-SB-07(3-4)	AR-SB-08(2.5-4)
Matrix		Soil	Soil	Soil	Soil	Soil
Depth Interval (ft)		2.5-4.0	4.2-5.0	3.0-4.0	3.0-4.0	2.5-4.0
Date Sampled		04/07/16	04/07/16	04/04/16	04/07/16	04/07/16
Parameter	Units					
Semivolatile Organic Compounds						
Nitrobenzene	UG/KG	380 U	710 U	3,500 U	360 U	380 U
N-Nitroso-di-n-propylamine	UG/KG	380 U	710 U	3,500 U	360 U	380 U
N-Nitrosodiphenylamine	UG/KG	380 U	710 U	3,500 U	360 U	380 U
Pentachlorophenol	UG/KG	760 U	1,400 U	6,900 U	730 U	750 U
Phenanthrene	UG/KG	664	280 U	406 J	54.3 J	134 J
Phenol	UG/KG	380 U	710 U	3,500 U	360 U	380 U
Pyrene	UG/KG	1,120	1,730	1,680	243	646
Polychlorinated Biphenyls						
Aroclor 1016	UG/KG	250 U	50 U	240 U	47 UJ	50 U
Aroclor 1221	UG/KG	250 U	50 U	240 U	47 UJ	50 U
Aroclor 1232	UG/KG	250 U	50 U	240 U	47 UJ	50 U
Aroclor 1242	UG/KG	250 U	50 U	240 U	47 UJ	50 U
Aroclor 1248	UG/KG	749 J	388 J	577 J	128 J	464 J
Aroclor 1254	UG/KG	1,340	747	1,080	140 J	861 J
Aroclor 1260	UG/KG	632 J	380 J	560 J	42.2 J	154 J
Total Polychlorinated Biphenyls	UG/KG	2,721 J	1,515 J	2,217 J	310.2 J	1,479 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 2
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45324
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-SB-02	AR-SB-08	AR-SB-08
Sample ID		AR-SB-02(0.5-1.5)	AR-SB-08(0.5-1.5)	AR-SB-08(0.5-1.5)DUP
Matrix		Soil	Soil	Soil
Depth Interval (ft)		0.5-1.5	0.5-1.5	0.5-1.5
Date Sampled		04/11/16	04/11/16	04/11/16
Parameter	Units			Field Duplicate (1-1)
Volatile Organic Compounds				
1,1,1-Trichloroethane	UG/KG	3.1 UJ	2.4 U	2.8 U
1,1,2,2-Tetrachloroethane	UG/KG	3.1 U	2.4 U	2.8 UJ
1,1,2-Trichloroethane	UG/KG	3.1 U	2.4 U	2.8 U
1,1-Dichloroethane	UG/KG	3.1 U	2.4 U	2.8 U
1,1-Dichloroethene	UG/KG	3.1 UJ	2.4 U	2.8 UJ
1,2-Dichloroethane	UG/KG	3.1 U	2.4 U	2.8 U
1,2-Dichloroethene (cis)	UG/KG	3.1 U	2.4 U	2.8 U
1,2-Dichloroethene (trans)	UG/KG	3.1 UJ	2.4 U	2.8 UJ
1,2-Dichloropropane	UG/KG	3.1 U	2.4 U	2.8 U
1,3-Dichloropropene (cis)	UG/KG	3.1 U	2.4 U	2.8 U
1,3-Dichloropropene (trans)	UG/KG	3.1 U	2.4 U	2.8 U
2-Hexanone	UG/KG	16 UJ	12 U	14 U
4-Methyl-2-pentanone	UG/KG	7.8 U	6.1 U	7 U
Acetone	UG/KG	228 J	389 J	731 J
Benzene	UG/KG	0.86	1.1	2.3
Bromodichloromethane	UG/KG	3.1 U	2.4 U	2.8 U
Bromoform	UG/KG	3.1 U	2.4 U	2.8 U
Bromomethane	UG/KG	3.1 U	2.4 U	2.8 U
Carbon disulfide	UG/KG	14.6 J	25.6	61.2 J
Carbon tetrachloride	UG/KG	3.1 UJ	2.4 U	2.8 U
Chlorobenzene	UG/KG	3.1 U	0.59 J	2.8 U
Chloroethane	UG/KG	7.8 U	6.1 U	7 U
Chloroform	UG/KG	3.1 U	2.4 U	2.8 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 2
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45324
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-SB-02	AR-SB-08	AR-SB-08
Sample ID		AR-SB-02(0.5-1.5)	AR-SB-08(0.5-1.5)	AR-SB-08(0.5-1.5)DUP
Matrix		Soil	Soil	Soil
Depth Interval (ft)		0.5-1.5	0.5-1.5	0.5-1.5
Date Sampled		04/11/16	04/11/16	04/11/16
Parameter	Units			Field Duplicate (1-1)
Volatile Organic Compounds				
Chloromethane	UG/KG	7.8 U	6.1 U	7 U
Dibromochloromethane	UG/KG	3.1 U	2.4 U	2.8 U
Ethylbenzene	UG/KG	3.1 U	2.4 U	2.8 U
Methyl ethyl ketone (2-Butanone)	UG/KG	16 UJ	24 U	14 U
Methylene chloride	UG/KG	3.1 U	2.4 U	1.3 J
Styrene	UG/KG	7.8 UJ	6.1 U	7 UJ
Tetrachloroethene	UG/KG	3.1 U	2.4 U	2.8 U
Toluene	UG/KG	7.8 U	1.2 J	2.2 J
Trichloroethene	UG/KG	3.1 U	2.4 U	2.8 U
Vinyl chloride	UG/KG	3.1 UJ	2.4 U	2.8 U
Xylene (total)	UG/KG	3.1 U	1.9 J	0.69 J
Semivolatile Organic Compounds				
1,2,4-Trichlorobenzene	UG/KG	320 U	320 U	320 U
1,2-Dichlorobenzene	UG/KG	320 U	320 U	320 U
1,3-Dichlorobenzene	UG/KG	320 U	320 U	320 U
1,4-Dichlorobenzene	UG/KG	320 U	320 U	320 U
2,4,5-Trichlorophenol	UG/KG	640 U	640 U	640 U
2,4,6-Trichlorophenol	UG/KG	640 U	640 U	640 U
2,4-Dichlorophenol	UG/KG	640 U	640 U	640 U
2,4-Dimethylphenol	UG/KG	640 U	640 U	640 U
2,4-Dinitrophenol	UG/KG	1,300 U	1,300 U	1,300 U
2,4-Dinitrotoluene	UG/KG	640 U	640 U	640 U
2,6-Dinitrotoluene	UG/KG	NA	640 U	640 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 2
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45324
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-SB-02	AR-SB-08	AR-SB-08
Sample ID		AR-SB-02(0.5-1.5)	AR-SB-08(0.5-1.5)	AR-SB-08(0.5-1.5)DUP
Matrix		Soil	Soil	Soil
Depth Interval (ft)		0.5-1.5	0.5-1.5	0.5-1.5
Date Sampled		04/11/16	04/11/16	04/11/16
Parameter	Units			Field Duplicate (1-1)
Semivolatile Organic Compounds				
2-Chloronaphthalene	UG/KG	320 U	320 U	320 U
2-Chlorophenol	UG/KG	320 U	320 U	320 U
2-Methylnaphthalene	UG/KG	130 U	130 U	130 U
2-Methylphenol (o-cresol)	UG/KG	640 U	640 U	640 U
2-Nitroaniline	UG/KG	640 U	640 U	640 U
2-Nitrophenol	UG/KG	640 U	640 U	640 U
3,3-Dichlorobenzidine	UG/KG	320 U	320 U	320 U
3-Nitroaniline	UG/KG	640 U	640 U	640 U
4,6-Dinitro-2-methylphenol	UG/KG	640 UJ	640 UJ	640 UJ
4-Bromophenyl-phenylether	UG/KG	320 U	320 U	320 U
4-Chloro-3-methylphenol	UG/KG	640 U	640 U	640 U
4-Chloroaniline	UG/KG	640 U	640 U	640 U
4-Chlorophenyl-phenylether	UG/KG	320 U	320 U	320 U
4-Methylphenol (p-cresol)	UG/KG	640 U	640 U	640 U
4-Nitroaniline	UG/KG	640 U	640 U	640 U
4-Nitrophenol	UG/KG	1,300 U	1,300 U	1,300 U
Acenaphthene	UG/KG	36.6 J	27.5 J	33.8 J
Acenaphthylene	UG/KG	47.2 J	53.9 J	24.0 J
Anthracene	UG/KG	134	109 J	117 J
Benzo(a)anthracene	UG/KG	966	784	895
Benzo(a)pyrene	UG/KG	1,340	1,130	1,260
Benzo(b)fluoranthene	UG/KG	1,740	1,300	1,730
Benzo(g,h,i)perylene	UG/KG	1,210	1,020	1,120

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

TABLE 2
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45324
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-SB-02	AR-SB-08	AR-SB-08
Sample ID		AR-SB-02(0.5-1.5)	AR-SB-08(0.5-1.5)	AR-SB-08(0.5-1.5)DUP
Matrix		Soil	Soil	Soil
Depth Interval (ft)		0.5-1.5	0.5-1.5	0.5-1.5
Date Sampled		04/11/16	04/11/16	04/11/16
Parameter	Units			Field Duplicate (1-1)
Semivolatile Organic Compounds				
Benzo(k)fluoranthene	UG/KG	1,020	1,010	898
bis(2-Chloroethoxy)methane	UG/KG	320 U	320 U	320 U
bis(2-Chloroethyl)ether	UG/KG	320 U	320 U	320 U
Bis(2-chloroisopropyl) ether	UG/KG	320 U	320 U	320 U
bis(2-Ethylhexyl)phthalate	UG/KG	85.0 J	62.4 J	66.2 J
Butylbenzylphthalate	UG/KG	320 UJ	320 UJ	320 UJ
Carbazole	UG/KG	122 J	93.5 J	120 J
Chrysene	UG/KG	1,470	1,190	1,360
Dibenz(a,h)anthracene	UG/KG	355	298	330
Dibenzofuran	UG/KG	22.4 J	130 U	22.5 J
Diethylphthalate	UG/KG	320 U	320 U	320 U
Dimethylphthalate	UG/KG	320 U	320 U	320 U
Di-n-butylphthalate	UG/KG	320 U	320 U	320 U
Di-n-octylphthalate	UG/KG	320 U	320 U	320 U
Fluoranthene	UG/KG	2,350	1,830	2,180
Fluorene	UG/KG	39.5 J	29.7 J	36.1 J
Hexachlorobenzene	UG/KG	320 U	320 U	320 U
Hexachlorobutadiene	UG/KG	320 U	320 U	320 U
Hexachlorocyclopentadiene	UG/KG	640 U	640 U	640 U
Hexachloroethane	UG/KG	320 U	320 U	320 U
Indeno(1,2,3-cd)pyrene	UG/KG	1,030	880	965
Isophorone	UG/KG	320 U	320 U	320 U
Naphthalene	UG/KG	25.1 J	28.1 J	24.3 J

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 2
VALIDATED SOIL SAMPLE ANALYTICAL RESULTS - SDG MC45324
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-SB-02	AR-SB-08	AR-SB-08
Sample ID		AR-SB-02(0.5-1.5)	AR-SB-08(0.5-1.5)	AR-SB-08(0.5-1.5)DUP
Matrix		Soil	Soil	Soil
Depth Interval (ft)		0.5-1.5	0.5-1.5	0.5-1.5
Date Sampled		04/11/16	04/11/16	04/11/16
Parameter	Units			Field Duplicate (1-1)
Semivolatile Organic Compounds				
Nitrobenzene	UG/KG	320 U	320 U	320 U
N-Nitroso-di-n-propylamine	UG/KG	320 U	320 U	320 U
N-Nitrosodiphenylamine	UG/KG	320 U	320 U	320 U
Pentachlorophenol	UG/KG	640 U	640 U	640 U
Phenanthrene	UG/KG	738	522	664
Phenol	UG/KG	320 U	320 U	320 U
Pyrene	UG/KG	1,910	1,470	1,810
Polychlorinated Biphenyls				
Aroclor 1016	UG/KG	41 U	43 U	44 U
Aroclor 1221	UG/KG	41 U	43 U	44 U
Aroclor 1232	UG/KG	41 U	43 U	44 U
Aroclor 1242	UG/KG	41 U	43 U	44 U
Aroclor 1248	UG/KG	41 U	43 U	44 U
Aroclor 1254	UG/KG	50.5 J	60.5 J	54.2 J
Aroclor 1260	UG/KG	84.3	92.3	70.4
Total Polychlorinated Biphenyls	UG/KG	134.8 J	152.8 J	124.6 J

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

TABLE 3
VALIDATED GROUNDWATER SAMPLE ANALYTICAL RESULTS
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-01	AR-MW-02	AR-MW-03	AR-MW-04	AR-MW-05
Sample ID		AR-MW01	AR-MW02	AR-MW03	AR-MW04	AR-MW05
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		04/18/16	04/18/16	04/18/16	04/18/16	04/18/16
Parameter	Units					
Volatile Organic Compounds						
1,1,1-Trichloroethane	UG/L	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ
1,1,2-Trichloroethane	UG/L	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	UG/L	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	UG/L	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	UG/L	1 UJ	1 UJ	1 UJ	1 UJ	1 U
1,2-Dichloroethene (cis)	UG/L	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (trans)	UG/L	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	UG/L	2 U	2 U	2 U	2 U	2 U
1,3-Dichloropropene (cis)	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropene (trans)	UG/L	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U
2-Hexanone	UG/L	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	UG/L	5 U	5 U	5 U	5 U	5 U
Acetone	UG/L	R	R	R	R	R
Benzene	UG/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	UG/L	1 U	1 U	1 U	1 U	1 U
Bromoform	UG/L	1 U	1 U	1 U	1 U	1 U
Bromomethane	UG/L	2 UJ	2 UJ	2 UJ	2 UJ	2 U
Carbon disulfide	UG/L	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	UG/L	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	UG/L	1 U	1 U	1 U	1 U	1 U
Chloroethane	UG/L	2 U	2 U	2 U	2 U	2 U
Chloroform	UG/L	1 U	1 U	1 U	1 U	1 U

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

TABLE 3
VALIDATED GROUNDWATER SAMPLE ANALYTICAL RESULTS
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-01	AR-MW-02	AR-MW-03	AR-MW-04	AR-MW-05
Sample ID		AR-MW01	AR-MW02	AR-MW03	AR-MW04	AR-MW05
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		04/18/16	04/18/16	04/18/16	04/18/16	04/18/16
Parameter	Units					
Volatile Organic Compounds						
Chloromethane	UG/L	2 U	2 U	2 U	2 U	2 UJ
Dibromochloromethane	UG/L	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	UG/L	1 U	1 U	1 U	1 U	1 U
Methyl ethyl ketone (2-Butanone)	UG/L	R	R	R	R	R
Methylene chloride	UG/L	2 U	2 U	2 U	2 U	2 U
Styrene	UG/L	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	UG/L	1 U	1 U	1 U	1 U	1 U
Toluene	UG/L	1 U	1 U	1 U	1 U	1 U
Trichloroethene	UG/L	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	UG/L	1 U	1 U	1 U	1 U	1 U
Xylene (total)	UG/L	1 U	1 U	1 U	1 U	1 U
Polychlorinated Biphenyls						
Aroclor 1016	UG/L	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U
Aroclor 1221	UG/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Aroclor 1232	UG/L	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U
Aroclor 1242	UG/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Aroclor 1248	UG/L	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U
Aroclor 1254	UG/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Aroclor 1260	UG/L	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U
Dissolved Polychlorinated Biphenyls						
Aroclor 1016	UG/L	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U
Aroclor 1221	UG/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Aroclor 1232	UG/L	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U

Flags assigned during chemistry validation are shown.

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Detection Limits shown are PQL

#Error
Printed: 6/24/2016 8:48:03 AM
[SITE KEY] = 3 AND [MATRIX] = 'WG'

TABLE 3
VALIDATED GROUNDWATER SAMPLE ANALYTICAL RESULTS
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-01	AR-MW-02	AR-MW-03	AR-MW-04	AR-MW-05
Sample ID		AR-MW01	AR-MW02	AR-MW03	AR-MW04	AR-MW05
Matrix		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-	-	-
Date Sampled		04/18/16	04/18/16	04/18/16	04/18/16	04/18/16
Parameter	Units					
Dissolved Polychlorinated Biphenyls						
Aroclor 1242	UG/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Aroclor 1248	UG/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Aroclor 1254	UG/L	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Aroclor 1260	UG/L	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 3
VALIDATED GROUNDWATER SAMPLE ANALYTICAL RESULTS
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-06	AR-SB-02	AR-SB-04
Sample ID		AR-MW06	AR-SB02	AR-SB04
Matrix		Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-
Date Sampled		04/18/16	04/18/16	04/18/16
Parameter	Units			
Volatile Organic Compounds				
1,1,1-Trichloroethane	UG/L	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	1 U	1 U	1 U
1,1-Dichloroethane	UG/L	0.98 J	1 U	1 U
1,1-Dichloroethene	UG/L	1.6	1 U	1 U
1,2-Dichloroethane	UG/L	1 UJ	1 UJ	1 UJ
1,2-Dichloroethene (cis)	UG/L	393	1 U	0.52 J
1,2-Dichloroethene (trans)	UG/L	1 U	1 U	1 U
1,2-Dichloropropane	UG/L	2 U	2 U	2 U
1,3-Dichloropropene (cis)	UG/L	0.5 U	0.5 U	0.5 U
1,3-Dichloropropene (trans)	UG/L	0.5 UJ	0.5 UJ	0.5 UJ
2-Hexanone	UG/L	10 U	10 U	10 U
4-Methyl-2-pentanone	UG/L	5 U	5 U	5 U
Acetone	UG/L	R	R	R
Benzene	UG/L	0.5 U	0.5 U	0.5 U
Bromodichloromethane	UG/L	1 U	1 U	1 U
Bromoform	UG/L	1 U	1 U	1 U
Bromomethane	UG/L	2 UJ	2 UJ	2 UJ
Carbon disulfide	UG/L	5 U	5 U	5 U
Carbon tetrachloride	UG/L	1 U	1 U	1 U
Chlorobenzene	UG/L	1 U	1 U	1 U
Chloroethane	UG/L	2 U	2 U	2 U
Chloroform	UG/L	1 U	1 U	1 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 3
VALIDATED GROUNDWATER SAMPLE ANALYTICAL RESULTS
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-06	AR-SB-02	AR-SB-04
Sample ID		AR-MW06	AR-SB02	AR-SB04
Matrix		Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-
Date Sampled		04/18/16	04/18/16	04/18/16
Parameter	Units			
Volatile Organic Compounds				
Chloromethane	UG/L	2 U	2 U	2 U
Dibromochloromethane	UG/L	1 U	1 U	1 U
Ethylbenzene	UG/L	1 U	1 U	1 U
Methyl ethyl ketone (2-Butanone)	UG/L	R	R	R
Methylene chloride	UG/L	2 U	2 U	2 U
Styrene	UG/L	5 U	5 U	5 U
Tetrachloroethene	UG/L	0.61 J	1 U	1 U
Toluene	UG/L	6.4	1 U	1 U
Trichloroethene	UG/L	91.0	1 U	1 U
Vinyl chloride	UG/L	16.0	1 U	1 U
Xylene (total)	UG/L	1 U	1 U	1 U
Polychlorinated Biphenyls				
Aroclor 1016	UG/L	0.16 U	0.16 U	0.16 U
Aroclor 1221	UG/L	0.16 U	0.16 U	0.16 U
Aroclor 1232	UG/L	0.16 U	0.16 U	0.16 U
Aroclor 1242	UG/L	0.16 U	0.16 U	0.16 U
Aroclor 1248	UG/L	0.16 U	0.16 U	0.16 U
Aroclor 1254	UG/L	0.16 U	0.16 U	0.063 J
Aroclor 1260	UG/L	0.16 U	0.16 U	0.16 U
Dissolved Polychlorinated Biphenyls				
Aroclor 1016	UG/L	0.16 U	0.16 U	0.16 U
Aroclor 1221	UG/L	0.16 U	0.16 U	0.16 U
Aroclor 1232	UG/L	0.16 U	0.16 U	0.16 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 3
VALIDATED GROUNDWATER SAMPLE ANALYTICAL RESULTS
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		AR-MW-06	AR-SB-02	AR-SB-04
Sample ID		AR-MW06	AR-SB02	AR-SB04
Matrix		Groundwater	Groundwater	Groundwater
Depth Interval (ft)		-	-	-
Date Sampled		04/18/16	04/18/16	04/18/16
Parameter	Units			
Dissolved Polychlorinated Biphenyls				
Aroclor 1242	UG/L	0.16 U	0.16 U	0.16 U
Aroclor 1248	UG/L	0.16 U	0.16 U	0.16 U
Aroclor 1254	UG/L	0.16 U	0.16 U	0.063 J
Aroclor 1260	UG/L	0.16 U	0.16 U	0.16 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

TABLE 4
VALIDATED FIELD QC SAMPLE ANALYTICAL RESULTS
A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		FIELDQC
Sample ID		RB-040616
Matrix		Water Quality
Depth Interval (ft)		-
Date Sampled		04/06/16
Parameter	Units	Rinse Blank (1-1)
Volatile Organic Compounds		
1,1,1-Trichloroethane	UG/L	1 U
1,1,2,2-Tetrachloroethane	UG/L	0.5 U
1,1,2-Trichloroethane	UG/L	1 U
1,1-Dichloroethane	UG/L	1 U
1,1-Dichloroethene	UG/L	1 U
1,2-Dichloroethane	UG/L	1 U
1,2-Dichloroethene (cis)	UG/L	1 U
1,2-Dichloroethene (trans)	UG/L	1 U
1,2-Dichloropropane	UG/L	2 U
1,3-Dichloropropene (cis)	UG/L	0.5 U
1,3-Dichloropropene (trans)	UG/L	0.5 U
2-Hexanone	UG/L	10 U
4-Methyl-2-pentanone	UG/L	5 U
Acetone	UG/L	R
Benzene	UG/L	0.5 U
Bromodichloromethane	UG/L	1 U
Bromoform	UG/L	1 U
Bromomethane	UG/L	2 U
Carbon disulfide	UG/L	5 U
Carbon tetrachloride	UG/L	1 U
Chlorobenzene	UG/L	1 U
Chloroethane	UG/L	2 U
Chloroform	UG/L	1 U

Flags assigned during chemistry validation are shown.

MADE BY: AMK 6/23/16
CHECKED BY: GEK 6/23/16

Detection Limits shown are PQL

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A&R BUILDING AREA
UTC/CARRIER SITE

Location ID		FIELDQC
Sample ID		RB-040616
Matrix		Water Quality
Depth Interval (ft)		-
Date Sampled		04/06/16
Parameter	Units	Rinse Blank (1-1)
Volatile Organic Compounds		
Chloromethane	UG/L	2 U
Dibromochloromethane	UG/L	1 U
Ethylbenzene	UG/L	1 U
Methyl ethyl ketone (2-Butanone)	UG/L	R
Methylene chloride	UG/L	2 U
Styrene	UG/L	5 U
Tetrachloroethene	UG/L	1 U
Toluene	UG/L	1 U
Trichloroethene	UG/L	1 U
Vinyl chloride	UG/L	1 U
Xylene (total)	UG/L	1 U
Polychlorinated Biphenyls		
Aroclor 1016	UG/L	0.28 U
Aroclor 1221	UG/L	0.28 U
Aroclor 1232	UG/L	0.28 U
Aroclor 1242	UG/L	0.28 U
Aroclor 1248	UG/L	0.28 U
Aroclor 1254	UG/L	0.28 U
Aroclor 1260	UG/L	0.28 U

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