IMMEDIATE RESPONSE ACTION STATUS REPORT #6

FORMER AEROVOX FACILITY
740 BELLEVILLE AVENUE
NEW BEDFORD, MA
RTN 4-0601

Prepared for:

AVX Corporation
801 17th Avenue South
Myrtle Beach, SC 29578

February 2016

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PN: 60422003

Table of Contents

LIST OF ACRONYMS & ABBREVIATIONS

ug/l	micrograms per liter
ACO	Administrative Consent Order (MassDEP-AVX Agreement)
AVX	AVX Corporation
City	City of New Bedford
CSA	Comprehensive Site Assessment
DNAPL	Dense Non-Aqueous Phase Liquid
IDW	Investigation Derived Waste
IRA	Immediate Response Action
LSP	Licensed Site Professional
mg/kg	Milligrams per kilogram
MassDEP	Massachusetts Department of Environmental Protection
MCP	Massachusetts Contingency Plan
MHW	Mean High Water
ml	milliliter
MM	Maintenance and Monitoring
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethene or Perchloroethene
PPE	Personal Protective Equipment
RTN	Release Tracking Number
URS	URS Corporation
UTM	Universal Transverse Mercator

1.0 INTRODUCTION

On behalf of AVX Corporation (AVX), AECOM has prepared this *Immediate Response Action (IRA) Status Report* (Status Report) for the Disposal Site known as the former Aerovox Facility (Site) located at 740 Belleville Avenue in New Bedford, Massachusetts. On April 10, 2014, URS Corporation (URS) notified the Massachusetts Department of Environmental Protection (MassDEP) of the presence of dense non-aqueous phase liquid (DNAPL) at a thickness of greater than 0.5-inches per 310 CMR 40.0313(1). AECOM (formerly URS) submitted an IRA Plan on June 10, 2014 and the first IRA Status Report on August 6, 2014. In its letter of September 12, 2014, MassDEP requested an expedited (interim) IRA Status Report and established an interim deadline of October 8, 2014 for submittal of IRA Status Report #2. AECOM submitted interim IRA Status Report #2 as requested on October 8, 2014 and submitted IRA Status Report #3 on February 4, 2015. In its letter of May 8, 2015, MassDEP again requested an expedited (interim) IRA Status Report and established an interim deadline of June 15, 2015 for submittal of interim IRA Status Report #4. IRA Status Report #5 was submitted on August 4, 2015. This is IRA Status Report #6, which covers the six month period of August 2015 through January 2016.

MassDEP orally approved an IRA consisting of assessment actions pursuant to the MCP, 310 CMR 40.0414(1), including assessment of the extent and recoverability of DNAPL in the vicinity of MW-15D and removal actions pursuant to the MCP, 310 CMR 40.0414(2), including utilizing low-energy methods (bailing and pumping) to remove DNAPL from MW-15D and from any newly installed monitoring wells that exhibit DNAPL thickness greater than ½ inch. The DNAPL analyses indicate the site-specific DNAPL collected from the MW-15 monitoring well cluster was comprised of approximately 55% by mass of chlorinated organics (1,2,4-trichlorobenzene, 1,4-dichlorobenzene, cis-1,2-dichloroethene, tetrachloroethene (PCE) and trichloroethene (TCE)) and PCBs (Aroclors 1242 and 1254), with the remaining portion estimated to be comprised of carrier oils. The most prevalent constituents other than the carrier oil in the DNAPL are Aroclor 1242, Aroclor 1254 and TCE, which according to the most recent DNAPL analysis comprise roughly 38%, 12% and 2% respectively of the sampled DNAPL. The IRA condition is being addressed under the existing Release Tracking Number (RTN) for the Site, 4-0601.

The site assessment and remediation under Massachusetts General Law Chapter 21E and the MCP is subject to the Administrative Consent Order and Notice of Responsibility (ACO) between AVX and the MassDEP and the Massachusetts Office of the Attorney General, effective as of June 3, 2010 (ACO-SE-09-3P-016).

Figure 1, Site Location Plan, depicts the Site location with respect to the surrounding topography and features and **Figure 2**, Site Plan, presents the historic investigation locations across the Site. The coordinates of the Site (referenced to the corner of Belleville Avenue and Hadley Street) are latitude 41° 40’ 25.12” N and longitude 70° 55’ 13.84” W (UTM coordinates 340135.53m E and 4615326.34m N). **Figure 3** provides a detail of the IRA area.

The Site, as defined by the ACO, includes any place or area where a release of oil and/or hazardous material at or from the Aerovox property which occurred before the ACO Effective Date (June 3, 2010) has come to be located, excepting those places or areas that are part of the New Bedford Harbor Superfund Site including land area, bank or water body located seaward of the sheet pile wall previously installed at the property or seaward of the mean high water (MHW) level at the property and running along the MHW level in a northward and southward direction from the property. Per this definition, the Disposal Site as currently delineated extends to the following locations:

- The existing Aerovox western property line along Belleville Avenue,
- The existing sheet pile wall (inclusive of the wall itself) running generally in a north-south orientation along the Acushnet River;
- North of the northern boundary of the property, onto the Precix property at 744 Belleville Avenue and the Coyne Textile Services property at 20 Howard Avenue; and
- South of the southern boundary of the property, onto the Titleist property at 700 Belleville Avenue.

With the exception of identifying the extent of contamination on the Coyne property, to which access was not available, the Phase II Comprehensive Site Assessment (CSA) activities were completed for the Site and the Phase II Comprehensive Site Assessment (CSA) Report was submitted in September 2015. Additional information and details regarding the Disposal Site history and a description of the release and potential receptors were provided in the Phase I and Tier Classification submittal, as well as the Phase II CSA Report and the IRA Plan, and are not repeated in this IRA Status Report.

2.0 RELEVANT CONTACTS (310 CMR 40.0424(a))

The property is owned by the City of New Bedford, Massachusetts (the City). Contact information for the City's representative is:

Ms. Michele Paul
Director of Environmental Stewardship
City of New Bedford
133 Williams Street, Room 304
New Bedford, MA 02740
Phone Number: 508-991-6188

The person assuming responsibility for conducting IRA activities is:

Mr. Evan Slavitt
AVX Corporation
801 17th Avenue South, P.O. Box 867
Myrtle Beach, SC 29578
Phone Number: 843-946-0714

The Licensed Site Professional (LSP) for the Site is:

Ms. Marilyn Wade, LSP No. 4513
AECOM
1155 Elm Street, Suite 401
Manchester, NH 03101
Phone Number: 603-606-4824

3.0 STATUS OF IMMEDIATE RESPONSE ACTIONS (310 CMR 40.0425(3)(a))

3.1 DNAPL GAUGING AND REMOVAL

Beginning on May 19, 2014, AECOM has conducted bi-weekly DNAPL recovery from monitoring well MW-15D. On September 29, 2014, DNAPL was identified in monitoring well MW-15B for the first time. Prior to this measurement, only a trace of DNAPL had been observed in this well (weighted string was intermittently stained, but not continuously at bottom of string). Since October 6, 2014, bi-weekly DNAPL recovery has been conducted at monitoring well MW-15B in addition to MW-15D. Gauging events have occurred on ten occasions since the last event (7/27/15) discussed in IRA Status Report #5.

During each DNAPL recovery event, the thickness of DNAPL in the well is first measured using a weighted string. Once the measurement is recorded, dedicated polyethylene tubing is then deployed to the bottom of the well and the discharge end connected to a peristaltic pump. DNAPL that is located at the bottom of the well is then extracted using the peristaltic pump and discharged into a 5-gallon bucket. Pumping is continued until there is no longer any visible evidence of DNAPL being discharged from the tubing. The discharge consists of a mixture of groundwater and DNAPL extracted from the well. By carefully decanting the water collected into a separate container, the volume of the recovered DNAPL is then measured by decanting into a graduated beaker.

During the ten recovery events that have occurred since July 27, 2015, the average thickness of DNAPL measured in MW-15D was 2.4 inches, with a minimum measured thickness of two inches and a maximum measured thickness of three inches. The total volume recovered from MW-15D during these ten events was approximately 420 milliliters (ml) (0.11 gallons). The total DNAPL recovered from MW-15D since initiation of recovery efforts in May 2014 is 3,178 ml (0.84 gallons).

The average thickness of DNAPL measured in MW-15B during this period was 2.3 inches, with a minimum measured thickness of 1.5 inches and a maximum measured thickness of three inches. The total volume recovered from MW-15B during these ten events is approximately 31 milliliters (ml) (0.08 gallons). The total DNAPL recovered from MW-15B since initiation of recovery efforts in September 2014 is 1,490 ml (0.39 gallons).

Refer to **Table 1** for a tabulated summary of DNAPL recovery by event and cumulative volumes for MW-15D and MW-15B. Graphs of DNAPL thickness and recovery volume per event, and cumulative recovery to date are included in **Appendix A**.

The recovered water/DNAPL mixture is stored in a 5-gallon bucket with lid which is then placed in a 55-gallon drum. The drum is stored in a secure drum shed with secondary containment located on the Site.

To date, measurable DNAPL has not been observed in any other well installed at the Site.

3.2 DNAPL ASSESSMENT ACTIVITIES

The submittal of interim IRA Status Report #4 included an evaluation of DNAPL mobility (vertical and horizontal) and DNAPL recoverability. The mobility and recoverability calculations were based on a representative set of site specific soil geotechnical properties. Where specific geotechnical properties were not available, literature values were used. During this reporting period, four geotechnical soil borings were advanced along the eastern boundary of the Site. The purpose of these geotechnical borings was to collect samples for further evaluation of geotechnical properties for use in the analysis of mobility and recoverability and for calculations of lines of evidence to identify possible DNAPL source zones based on Keuper and Davies, 2009.[1] The geotechnical borings were also advanced to provide information to support the Phase III feasibility evaluation for potential waterfront containment barrier options. The geotechnical soil boring program was conducted between August 21 and August 27, 2015 at four locations within the eastern portion of the Site, near the existing sheet pile wall. The geotechnical borings were advanced near four existing groundwater monitoring wells and were designated as follows: GEO-17B, GEO-2B, GEO-7B, and GEO-15B (see **Figure 4**). Specific depths were targeted at each location for the collection of soil samples for geotechnical evaluation. Where possible, Shelby tubes were used for the collection of undisturbed soil samples from the discrete intervals. The soil samples collected were submitted for various laboratory analyses which included: water content, Bulk Density, Atterburg Limits, Undrained Strength, Specific Gravity, and Grain Size. The analytical data for these samples is included in **Appendix B**. Bulk density determinations require the use of undisturbed soil samples typically collected utilizing Shelby tube sampling equipment. The nature of the unconsolidated deposits provided only limited success at collection of undisturbed samples. **Appendix C** provides additional discussion of the usability and representativeness of the geotechnical samples collected for bulk density analysis. Evaluation of the geotechnical results, and their application to calculations of DNAPL source areas and migration potential is ongoing and results of that evaluation will be provided in a subsequent IRA status submittal.

[1] Assessment and Delineation of DNAPL Source Zones at Hazardous Waste Sites, Bernard H. Kueper and Kathryn L. Davies, EPA Ground Water Issue, 2009

4.0 MANAGEMENT OF REMEDIATION WASTE (310 CMR 40.0425(3)(c))

DNAPL, contaminated soil, contaminated groundwater, and contaminated personal protective equipment (PPE) are being generated during IRA activities. The DNAPL generated from recovery activities is temporarily stored in a covered 5-gallon pail that is stored within a 55-gallon drum in the secure temporary drum storage unit (with integral secondary containment) at the Site. Solids (soil, sample/pump tubing, and PPE) generated as part of the IRA and other Phase II CSA investigations are stored in separate 55-gallon drums on the Site pending transportation and disposal. On September 9, 2015, IDW was loaded and transported for off-site disposal by Clean Harbors Environmental Services (CHES). This IDW shipment consisted of seven drums of solids (soil cuttings from geotechnical and other soil borings) and 15 drums of liquids (washwater and purgewater from drilling/sampling activities). On December 21, 2015, additional IDW was removed from the Site by CHES. This IDW shipment consisted of two drums of solids (soil cuttings from the drilling of MW-36B), six drums of liquids (washwater and purgewater from the drilling and sampling of MW-36B and other wells), and a 5-gallon bucket of DNAPL. The manifests for these shipments of IDW are attached in **Appendix G**.

5.0 OTHER NEW SITE INFORMATION OR DATA (310 CMR 0.0425(3)(d))

5.1 ASSESSMENT ACTIVITIES SINCE LAST STATUS REPORT

In addition to IRA related DNAPL recovery and DNAPL assessment activities conducted since the last IRA Status Report submittal, Phase II CSA activities were also ongoing during this reporting period. The majority of the Phase II CSA activities were completed in August 2015 and described in the September 2015 Phase II CSA Report submittal to MassDEP, with the exception of activities related to work on the Coyne Textile Services (Coyne) property. Access to the Coyne property was not provided by the property owner until November 2015. As such, the site assessment activities and data collected and received between November 2015 and the date of this submittal have not previously been submitted, and constitute new site information. These activities are described below.

In November 2015, a shallow bedrock well was drilled and installed on the Coyne property located at 20 Howard Avenue, which is situated north of the Site. The objective of this new bedrock well was to delineate the northern extent of the CVOC groundwater contamination in the shallow bedrock aquifer. The exploration was drilled using methods consistent with other shallow bedrock wells for this project, using a combination of drive & wash casing advancement through the overburden and air hammer advancement into bedrock via permanently installed casing seated into the bedrock surface. Completion of the exploration resulted in a 25' open-hole bedrock well which was designated as MW-36B. Bedrock drilling via air hammer advancement indicated that bedrock at this location is fairly competent, as very little water was present in the drilled rock cuttings (i.e., mostly dry). The well could not be developed at the time of installation because little to no water was present in the borehole. A limited amount of groundwater was observed to be recharging into the borehole after completion of the monitoring well, suggesting that a weak water-bearing bedrock fracture is intercepted by the boring. The boring log for MW-36B is attached in **Appendix D**. The well was minimally developed upon completion (given the lack of water) and secured with a protective flushmount roadbox. On December 17, 2015, MW-36B was purged and sampled via low-flow methods consistent with all groundwater sampling activities for this project. Groundwater samples were submitted for analysis of a select list of CVOCs, including tetrachloroethene, trichloroethene, cis/trans-1,2-dichloroethene, and vinyl chloride. Analytical results indicated the presence of TCE at a concentration of 100 ug/L and cis-1,2-dichloroethene at 30 ug/L. The laboratory analytical data report is included in **Appendix E** and the location of MW-36B is shown on **Figure 2.**

On December 21, 2015, a synoptic round of water levels was collected by AECOM on all bedrock groundwater monitoring wells associated with this project. The synoptic round was conducted at the low tidal stage of the Acushnet River, which abuts the Site to the east. The water levels in the wells were measured and recorded in the quickest time possible to equate for the low tide conditions. The information gathered during this synoptic round was then used to develop a bedrock groundwater potentiometric map, which is attached in **Appendix F.** It should

be noted that the water level measurement collected from MW-36B was not used during development of the bedrock groundwater potentiometric map, as it appears that the groundwater level in this well had not yet achieved equilibrium with the surrounding bedrock flow system at the time of the December 21, 2015 gauging event. The depth to water observed at this well (i.e., 21.94 feet) was significantly deeper than all surrounding bedrock wells, suggesting that the well had not yet fully recharged since installation of the borehole in November 2015. Future gauging events, to include well MW-36B, will be performed at the site and these data will be transmitted in subsequent IRA status reports.

5.2 MONITORING AND MAINTENANCE ACTIVITIES SINCE LAST STATUS REPORT

Pursuant to the Administrative Settlement Agreement and Order on Consent for Non-Time Critical Removal Action (AOC) between AVX and the EPA, effective June 3, 2010, a Monitoring and Maintenance (MM) Plan for the Aerovox Site was prepared by URS for AVX in fulfillment of Sections III.H.4. and III.I. of the Non-Time Critical Removal Action Scope of Work, Appendix B to the AOC. The MM Plan was also prepared in accordance with the Action Memorandum for the Site, issued by EPA on December 23, 2009, and the Toxic Substances Control Act Determination. The MM Plan describes who will be doing monitoring and maintenance for the cap and sheet pile wall, what monitoring and maintenance is required, when monitoring and maintenance will be performed, and in general terms how monitoring and maintenance will be conducted.

IRA Status Report #5 noted that the annual cap and containment barrier inspection required by the MM Plan was conducted on June 5, 2015, resulting in the following observations:

- The readily visible portion of the containment barrier remains in place and effective. No evidence of breach, compromise or excessive decay was noted, and the condition appears to be the same as previously documented in the September 2012 record.

- Numerous cracks with a width of greater than ½-inch were identified for sealing along the HAC cap area along the shoreline.

- Numerous cracks were identified in the HAC cap with a width of great than ½-inch between the former north drainage ditch north of the former building and the northern fence line.

- Eight small (<5 square feet) areas within the extent of the HAC cap were identified for removal and replacement. These areas are located in the vicinity of MW-17D/MW-17B (three areas), between the southern drainage ditch and the low point in the HAC cap east of the former building (three areas); adjacent to the north section of the sheet pile wall (one area); and, along the northern perimeter fence (one area). Cracks and pavement deterioration in these areas would not be sufficiently addressed through sealing alone, and pavement replacement is required.

- Over half of the fence along the east end of the Site has been removed. Holes were observed within the cap where the fence posts were removed. These areas were identified for repair. It should be noted that the remaining portion of this fence was removed in August 2015 to provide drill-rig access for completion of the geotechnical borings.

- Two cracks were observed within the concrete southern drainage ditch that requires sealing.

Based on the above observations, crack sealing and pavement replacement were undertaken at the Site in August 2015. CHES was retained to perform the cap repairs (as summarized above) as well as removal of weeds protruding through the cap surface. These activities were performed by CHES between August 10-13, 2015. All weeds and degraded asphalt removed from the cap during the repair and maintenance activities were placed into 55-gallon drums for off-site disposal. All identified cracks were filled with a commercial grade sealant. All larger areas requiring asphalt removal were refilled and compacted with hot-top asphalt. A memo and photographic log summarizing the cap repair activities is attached in **Appendix H**.

6.0 LSP OPINION (310 CMR 40.0425(3)(e))

The IRA activities to date have been successful in removing a limited quantity of DNAPL and providing additional assessment of the extent of DNAPL in and around MW-15D and MW-15B and along the Aerovox shoreline. The IRA has been and will continue to be conducted in conformance with the IRA Plan submitted to MassDEP on June 9, 2014.

Table

Table 1
DNAPL Recovery Summary
Aerovox, 740 Belleville Avenue, New Bedford, MA
RTN 4-04601

MW-15D

	Date	Depth to Groundwater (ft)	Approximate DNAPL Thickness (inches)	Recovery Event Volume (ounces)	Recovery Event Volume (ml)	Cumulative Volume Removed (ml)	Recovery Event Volume (gal)	Cumulative Volume Removed (gal)	Tide Cycle At Measurement
Status Re Status Report #	5/19/2014	NM	7	8 to 16	350	350	0.09	0.09	NR
	6/2/2014	5.03	4.5	8 to 16	350	700	0.09	0.18	NR
	6/16/2014	NM	4.5	5.5	160	860	0.04	0.23	NR
	6/30/2014	NM	6	5	150	1010	0.04	0.27	NR
	7/27/2014	4.49	3.5	3.4	100	1110	0.03	0.29	low tide
	8/18/2014	3.85	3	3.4	100	1210	0.03	0.32	3/4 of high
	9/22/2014	5.46	5	6.8	200	1410	0.05	0.37	3/4 of high; ebbing
	10/6/2014	5.48	3	1.4	40	1450	0.01	0.38	low tide
Status Report #3	10/22/2014	4.93	4	6.8	200	1650	0.05	0.44	low tide
	11/3/2014	5.74	4	0.0	1.25	1651	0.00	0.44	low tide
	11/17/2014	4.43	4	3.4	100	1751	0.03	0.46	Mid-tide; ebbing
	12/8/2014	2.76	4	5.1	150	1901	0.04	0.50	high tide
	12/23/2014	2.94	3.5	2.7	80	1981	0.02	0.52	high tide
	1/6/2015	6.35	3.5	2.5	75	2056	0.02	0.54	low tide
Status Report #4	1/19/2015	5.07	3	3.4	100	2156	0.03	0.57	low tide
	2/6/2015	NM	3	0.7	20	2176	0.01	0.57	not noted
	2/23/2015								
	3/9/2015	3.78	6	4.2	125	2301	0.03	0.61	high tide
	3/23/2015	3.13	5.5	5.1	150	2451	0.04	0.65	high tide
	4/13/2015	5.46	1	1.0	30	2481	0.01	0.66	3/4 of high tide; ebbing tide
	4/27/2015	3.05	2.5	1.7	50	2531	0.01	0.67	3/4 of high tide; ebbing tide
	5/11/2015	4.65	2.5	1.0	30	2561	0.01	0.68	3/4 of high tide; ebbing tide
	5/26/2015	4.91	4	1.7	50	2611	0.01	0.69	mid flow tide
	6/3/2015	4.99	2.5	1.7	50	2661	0.01	0.70	low tide
Status Report #5	6/16/2015	3.89	4.5	1.7	50	2711	0.01	0.72	3/4 high tide, ebbing tide
	6/29/2015	4.28	trace	0.1	2	2713	0.00	0.72	Mid-tide; ebbing
	7/16/2015	4.87	2.5	0.7	20	2733	0.01	0.72	low tide
	7/27/2015	4.78	2.5	0.8	25	2758	0.01	0.73	1/4 of low, flood tide
Status Report #6	8/14/2015	5.29	2.5	0.5	15	2773	0.00	0.73	low tide
	8/28/2015	2.28	2	0.3	10	2783	0.00	0.74	3/4 of high tide; ebbing tide
	9/8/2015	5.66	1.75	0.2	5	2788	0.00	0.74	ebbing tide; nearly at low
	9/29/2015	4.24	3	1.0	30	2818	0.01	0.74	ebbing tide; 1/2 way to low
	10/5/2015	3.13	2.5	0.7	20	2838	0.01	0.75	flow tide, nearly high
	10/19/2015	3.25	2	0.8	25	2863	0.01	0.76	ebbing, 3/4 of high
	11/2/2015	4.01	2	0.7	20	2883	0.01	0.76	high tide
	11/24/2015	5.73	2	0.7	20	2903	0.01	0.77	Flowing tide; near high tide
	12/31/2015	5.54	3	4.2	125	3028	0.03	0.80	Flowing tide; near high tide
	1/11/2016	2.39	3	5.1	150	3178	0.04	0.84	high tide
	Total Volume from MW-15D:			**108**		**3178**		**0.84**	

Notes:

Volume is estimated; includes DNAPL only - recovered water is not included in estimate

For the total volume recovered calculation, a value of 12 ounces was used for the first two recovery events.

The site could not be acessed on 2/23/2015 due to accumulation of ice and snow near the access gates.

Table 1
DNAPL Recovery Summary (Continued)
Aerovox, 740 Belleville Avenue, New Bedford, MA
RTN 4-04601

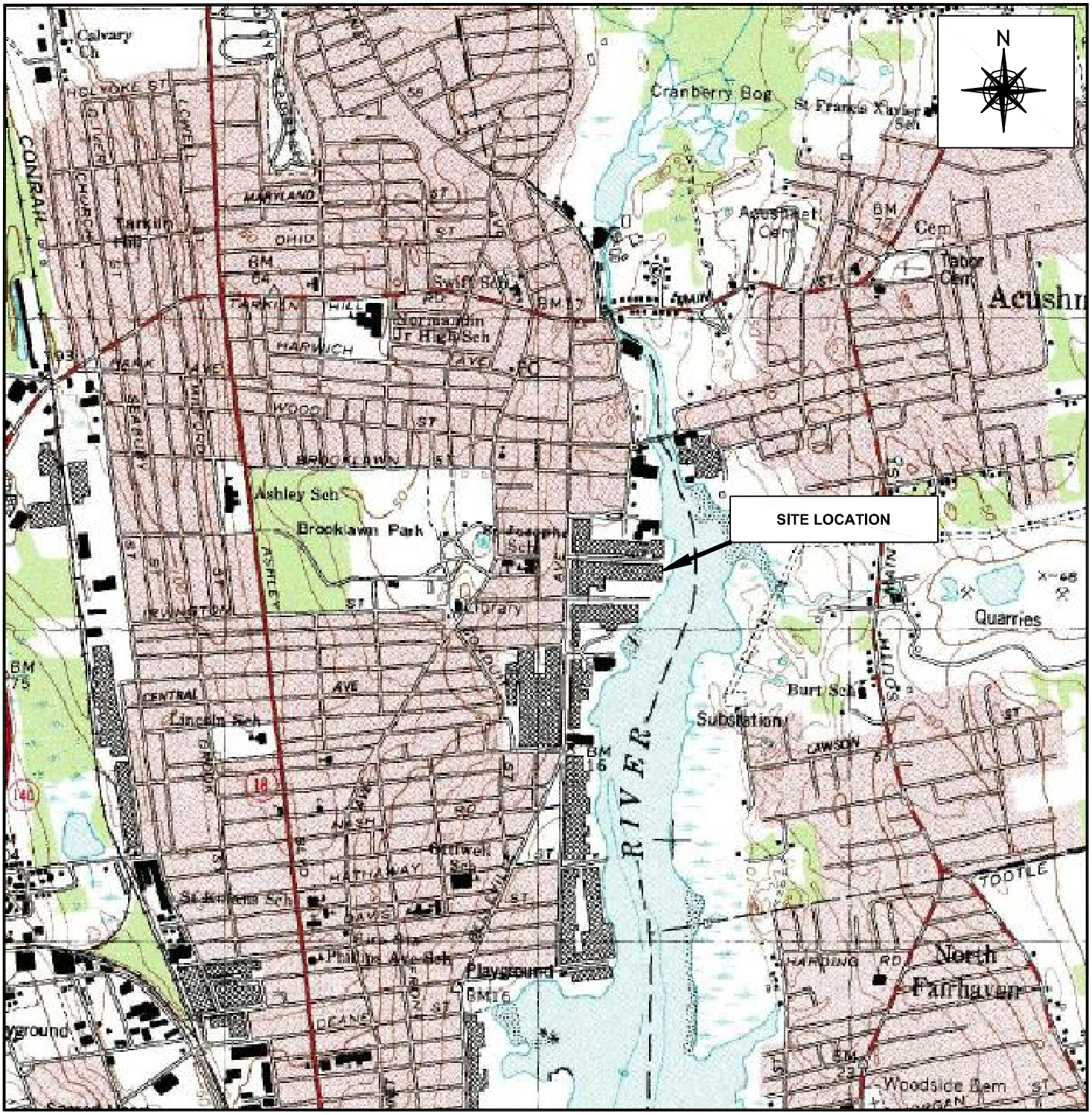
MW-15B

	Date	Depth to Groundwater (ft)	Approximate DNAPL Thickness (inches)	Recovery Event Volume (ounces)	Recovery Event Volume (ml)	Cumulative Recovery Volume (ml)	Recovery Event Volume (gal)	Cumulative Recovery Volume (Gal)	Tide Cycle
	5/19/2014								
	6/2/2014								
	6/16/2014								
	6/30/2014								
	7/27/2014								
	8/18/2014								
	9/22/2014								
	10/6/2014	4.63	3	1.0	30	30	0.01	0.01	low tide
Status Report # 3	10/22/2014	4.82	3.5	3.4	100	130	0.03	0.03	low tide
	11/3/2014	5.46	3	3.4	100	230	0.03	0.06	low tide
	11/17/2014	4.98	2.5	2.5	75	305	0.02	0.08	mid-tide; ebbing
	12/8/2014	4.98	3.5	2.5	75	380	0.02	0.10	high tide
	12/23/2014	3.43	2.5	2.5	75	455	0.02	0.12	high tide
	1/6/2015	4.62	3	2.5	75	530	0.02	0.14	low tide
	1/19/2015	6.04	3	2.0	60	590	0.02	0.16	low tide
	2/6/2015	NM	3	0.7	20	610	0.01		not noted
	2/23/2015								
Status Report # 4	3/9/2015	4.11	4.5	3.4	100	710	0.03	0.18	high tide
	3/23/2015	4.78	5	4.2	125	835	0.03	0.22	high tide
	4/13/2015	5.07	1.5	2.5	75	910	0.02	0.24	3/4 of high tide, ebbing tide
	4/27/2015	4.70	3.5	2.0	60	970	0.02	0.25	Flow tide, nearly high
	5/11/2015	4.99	5.5	2.0	60	1030	0.02	0.27	3/4 of high tide, ebbing tide
	5/26/2015	5.13	2.5	0.8	25	1055	0.01	0.27	mid flow tide
	6/3/2015	5.33	2	1.7	50	1105	0.01	0.29	low tide
Status Report #5	6/16/2015	4.38	2.5	1.0	30	1135	0.01	0.29	3/4 of high tide, ebbing tide
	6/29/2015	4.42	2.5	0.7	20	1155	0.01	0.30	mid-tide; ebbing
	7/16/2015	4.49	1	0.5	15	1170	0.00	0.30	low tide
	7/27/2015	4.46	1.5	0.3	10	1180	0.00	0.31	1/4 of low, flood tide
	8/14/2015	4.46	3	0.7	20	1200	0.01	0.31	low tide
	8/28/2015	3.96	2.5	0.5	15	1215	0.00	0.32	3/4 of high tide; ebbing tide
	9/8/2015	5.13	2.75	0.8	25	1240	0.01	0.32	ebbing tide; nearly at low
	9/29/2015	4.46	2	0.5	15	1255	0.00	0.33	ebbing tide; 1/2 way to low
	10/5/2015	4.1	2	0.3	10	1265	0.00	0.33	flow tide, nearly high
	10/19/2015	3.72	1.5	0.5	15	1280	0.00	0.33	ebbing, 3/4 of high
	11/2/2015	4.34	1.5	0.5	15	1295	0.00	0.34	high tide
	11/24/2015	5.57	2	0.7	20	1315	0.01	0.34	Flow tide, nearly high
	12/31/2015	5.42	3	3.4	100	1415	0.03	0.37	Flowing tide; near high tide
	1/11/2016	4.34	2.5	2.5	75	1490	0.02	0.39	high tide
	Total Volume to Date from MW-15B:			**50.4**		**1490**		**0.39**	

Notes:

Volume is estimated; includes DNAPL only - recovered water is not included in estimate
DNAPL was not observed at a measureable thickness in MW-15B until September 29, 2014
The site could not be acessed on 2/23/2015 due to accumulation of ice and snow near the access gates.

Figures



0 2000 4000

APPROXIMATE SCALE IN FEET

BASEMAP SOURCE:

USGS 7.5-minute Series Topographic Map
New Bedford North Quadrangle
1979 (photorevised 1975)

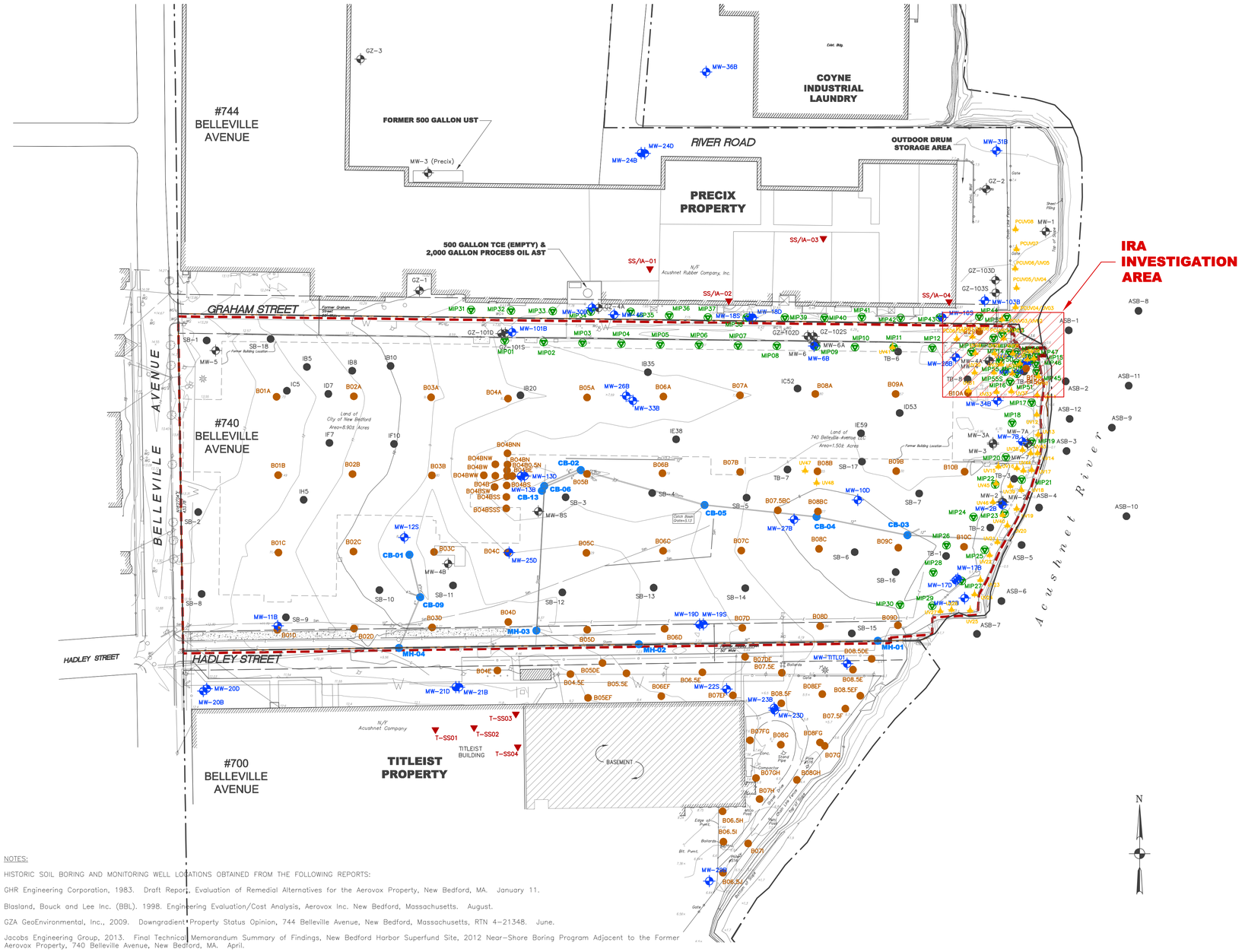
SITE LOCATION PLAN

AEROVOX FACILITY
740 BELLEVILLE AVENUE
NEW BEDFORD, MASSACHUSETTS

URS
5 Industrial Way
Salem, New Hampshire 03079
TEL: (603) 893-0616
FAX: (603) 893-6240
http://www.urscorp.com

SCALE:	NTS	DRAWN BY:	KP	JOB NO.:	39744051
DATE:	06/14	APPR. BY:	JU	FIGURE 1	

T:\acad-project\AVX\CADD\SWPP\Figure 1 Topo.dwg User: dennis_burnheimer Jan 17, 2011 - 3:19pm

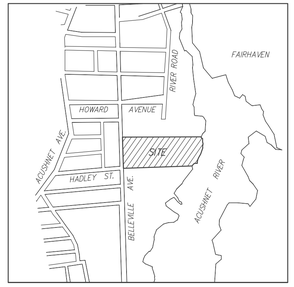


LEGEND

- MONITORING WELL (AECOM)
- SOIL BORING (AECOM)
- MIP BORING (AECOM)
- INDOOR AIR/SUB SLAB VAPOR POINT (AECOM)
- UVOST BORING (AECOM)
- HISTORIC SOIL BORING INSTALLED BY OTHERS*
- HISTORIC MONITORING WELL INSTALLED BY OTHERS*
- CB/MH — CATCH BASIN/MANHOLE
- PROPERTY LINE
- RTN SITE BOUNDARY
- San. — SANITARY SEWER LINES
- Storm. — STORM SEWER LINES
- W — WATER LINES
- G — GAS LINES
- E — ELECTRIC LINES

Catch Basin · Manhole
Coniferous Tree · Utility Pole
Deciduous Tree · WG Water Gate
GG Gas Gate · Hydrant
Concrete · Light Pole

LOCATION MAP
(NOT TO SCALE)



NOTES:

HISTORIC SOIL BORING AND MONITORING WELL LOCATIONS OBTAINED FROM THE FOLLOWING REPORTS:

GHR Engineering Corporation, 1983. Draft Report, Evaluation of Remedial Alternatives for the Aerovox Property, New Bedford, MA. January 11.

Blasland, Bouck and Lee Inc. (BBL). 1998. Engineering Evaluation/Cost Analysis, Aerovox Inc. New Bedford, Massachusetts. August.

GZA GeoEnvironmental, Inc., 2009. Downgradient Property Status Opinion, 744 Belleville Avenue, New Bedford, Massachusetts, RTN 4-21348. June.

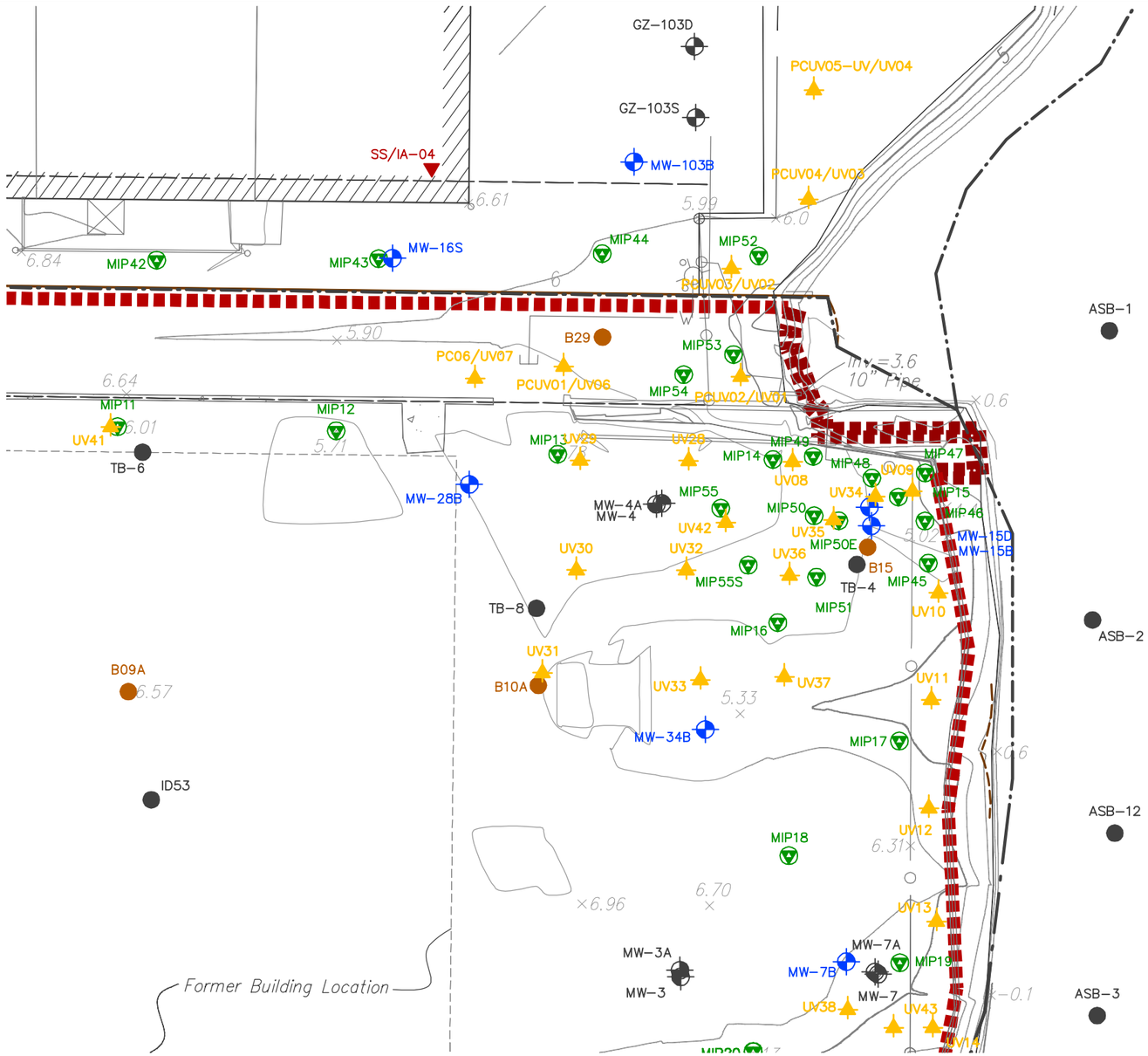
Jacobs Engineering Group, 2013. Final Technical Memorandum Summary of Findings, New Bedford Harbor Superfund Site, 2012 Near-Shore Boring Program Adjacent to the Former Aerovox Property, 740 Belleville Avenue, New Bedford, MA. April.

RTN SITE BOUNDARY AS DEPICTED ON EXHIBIT 3, COOPERATION & SETTLEMENT AGREEMENT, AEROVOX PROPERTY, DEPARTMENT OF THE ARMY NEW ENGLAND DISTRICT CORPS OF ENGINEERS, DATED DECEMBER 2009. CURRENT RTN SITE BOUNDARY EXTENDS BEYOND AEOROVOX PROPERTY.

AECOM
1155 ELM ST, SUITE 401
MANCHESTER, NH 03101-1508
Tel: 603.606.4800
Fax: 603.606.4801
www.aecom.com

0 140 280
SCALE IN FEET

PROJECT NO:	60422003	CLIENT:	AVX CORPORATION
DESIGN: DB	SCALE: AS SHOWN	PROJECT:	IRA STATUS REPORT 740 BELLEVILLE AVENUE NEW BEDFORD, MA
APPROVED: MW	DATE: JAN 2016	TITLE:	SITE PLAN
DRAWN: FS	FILE NO: AVX - IRA Status Report - 2015-02	FIGURE NO.:	2

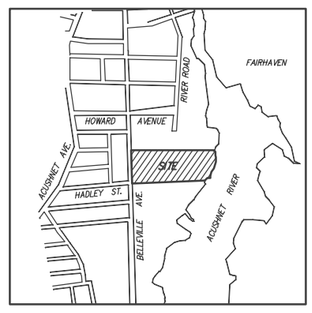


LEGEND

- MONITORING WELL (AECOM)
- SOIL BORING (AECOM)
- MIP BORING (AECOM)
- INDOOR AIR/SUB SLAB VAPOR POINT (AECOM)
- UVOST BORING (AECOM)
- HISTORIC SOIL BORING INSTALLED BY OTHERS*
- HISTORIC MONITORING WELL INSTALLED BY OTHERS*
- PROPERTY LINE
- RTN SITE BOUNDARY
- San. — SANITARY SEWER LINES
- Storm. — STORM SEWER LINES
- W — WATER LINES
- G — GAS LINES
- E — ELECTRIC LINES

- Catch Basin
- Coniferous Tree
- Deciduous Tree
- GG Gas Gate
- Concrete
- Manhole
- Utility Pole
- WG Water Gate
- Hydrant
- Light Pole

LOCATION MAP
(NOT TO SCALE)



N

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DRAFT

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0 30 60
SCALE IN FEET

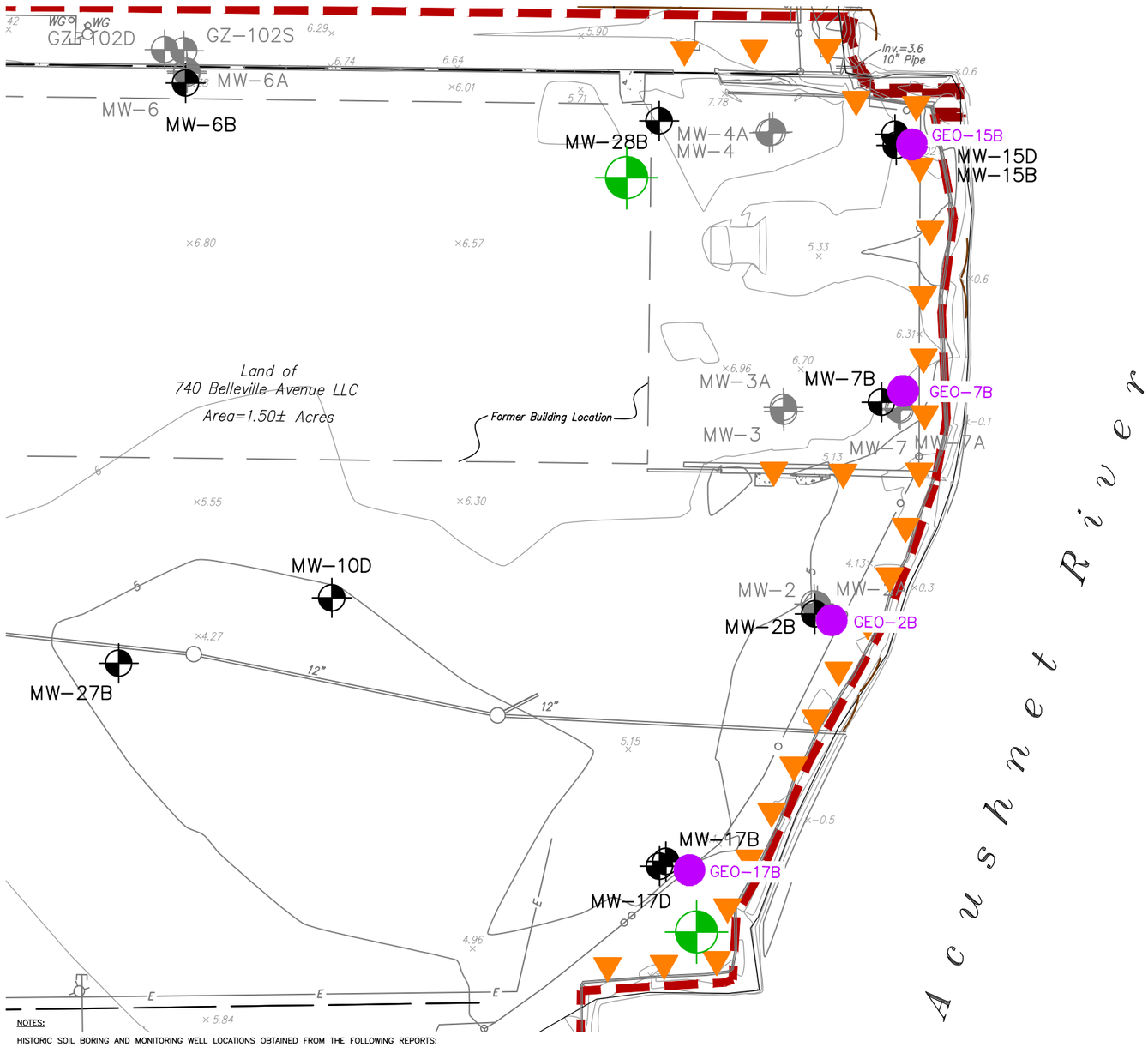
PROJECT NO:	60422003		
DESIGN:	DB	SCALE:	AS SHOWN
APPROVED:	MW	DATE:	JAN 2016
DRAWN:	FS	FILE NO:	AVX – IRA Status Report – 2015-02

CLIENT: AVX CORPORATION

PROJECT: IRA STATUS REPORT
740 BELLEVILLE AVENUE
NEW BEDFORD, MA

TITLE: DETAIL OF DNAPL
IRA AREA

FIGURE NO.: 3



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PROPOSED MONITORING WELL LOCATIONS SHOWN ARE APPROXIMATE AND MAY BE MODIFIED BASED ON RESULTS OF UVOST & RESISTIVITY SURVEYS.

DRAFT

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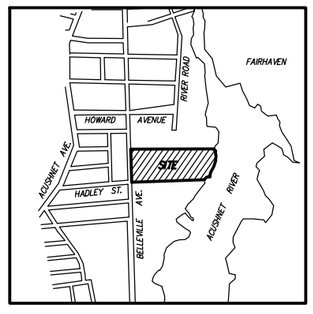
LEGEND

- MONITORING WELL (URS)
- HISTORIC MONITORING WELL INSTALLED BY OTHERS*
- UVOST LOCATIONS (20 TO 25-FOOT SPACING)
- SHALLOW BEDROCK MONITORING WELL
- DEEP BEDROCK MONITORING WELL
- GEOTECHNICAL BORING (DRILLED AUG 2015/SURVEYED SEPT 9, 2015)
- PROPERTY LINE
- AEROVOX PROPERTY BOUNDARY
- San. — SANITARY SEWER LINES
- Storm. — STORM SEWER LINES
- W — WATER LINES
- G — GAS LINES
- E — ELECTRIC LINES
- FORMER AEROVOX BUILDING FOOTPRINT

- Catch Basin
- Manhole
- Coniferous Tree
- Utility Pole
- Deciduous Tree
- WG Water Gate
- GG Gas Gate
- Hydrant
- Concrete
- Light Pole

LOCATION MAP
(NOT TO SCALE)



AECOM; Inc.
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0 50 100
SCALE IN FEET

PROJECT NO:	60422003		
DESIGN:	JHK	SCALE:	AS SHOWN
APPROVED:	JKH	DATE:	JAN 2016
DRAWN:	HAB	FILE NO:	AVX - Proposed Locations - 2015

CLIENT: AVX CORPORATION

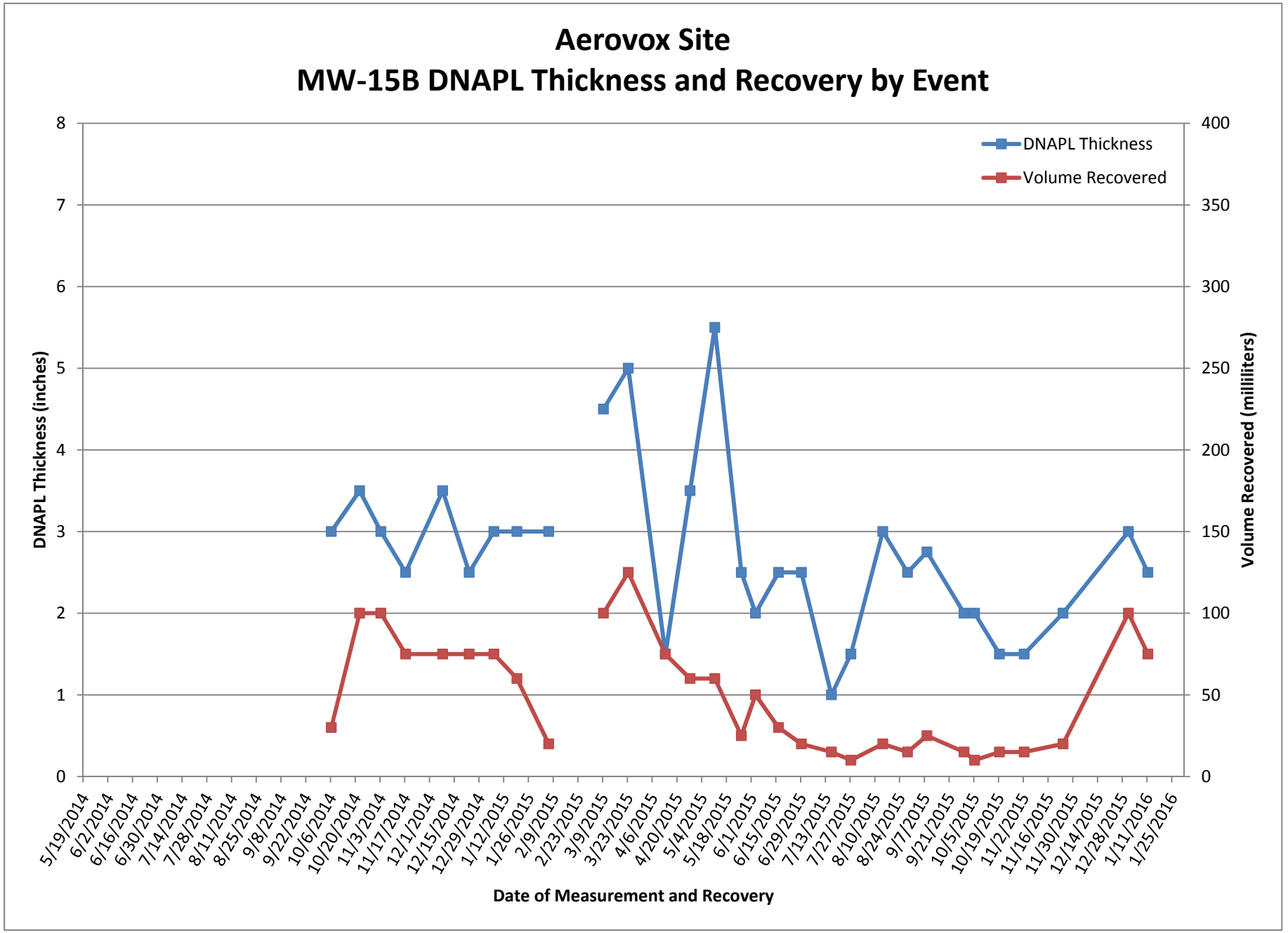
PROJECT: 740 BELLEVILLE AVENUE NEW BEDFORD, MA

TITLE: AEROVOX SITE GEOTECHNICAL BORING LOCATIONS

FIGURE NO.: 4

Appendix A

DNAPL Recovery Graphs


Aerovox Site
MW-15B DNAPL Thickness and Recovery by Event
DNAPL Thickness
Volume Recovered
DNAPL Thickness (inches)
Volume Recovered (milliliters)
Date of Measurement and Recovery
0
1
2
3
4
5
6
7
8
0
50
100
150
200
250
300
350
400
5/19/2014
6/2/2014
6/16/2014
6/30/2014
7/14/2014
7/28/2014
8/11/2014
8/25/2014
9/8/2014
9/22/2014
10/6/2014
10/20/2014
11/3/2014
11/17/2014
12/1/2014
12/15/2014
12/29/2014
1/12/2015
1/26/2015
2/9/2015
2/23/2015
3/9/2015
3/23/2015
4/6/2015
4/20/2015
5/4/2015
5/18/2015
6/1/2015
6/15/2015
6/29/2015
7/13/2015
7/27/2015
8/10/2015
8/24/2015
9/7/2015
9/21/2015
10/5/2015
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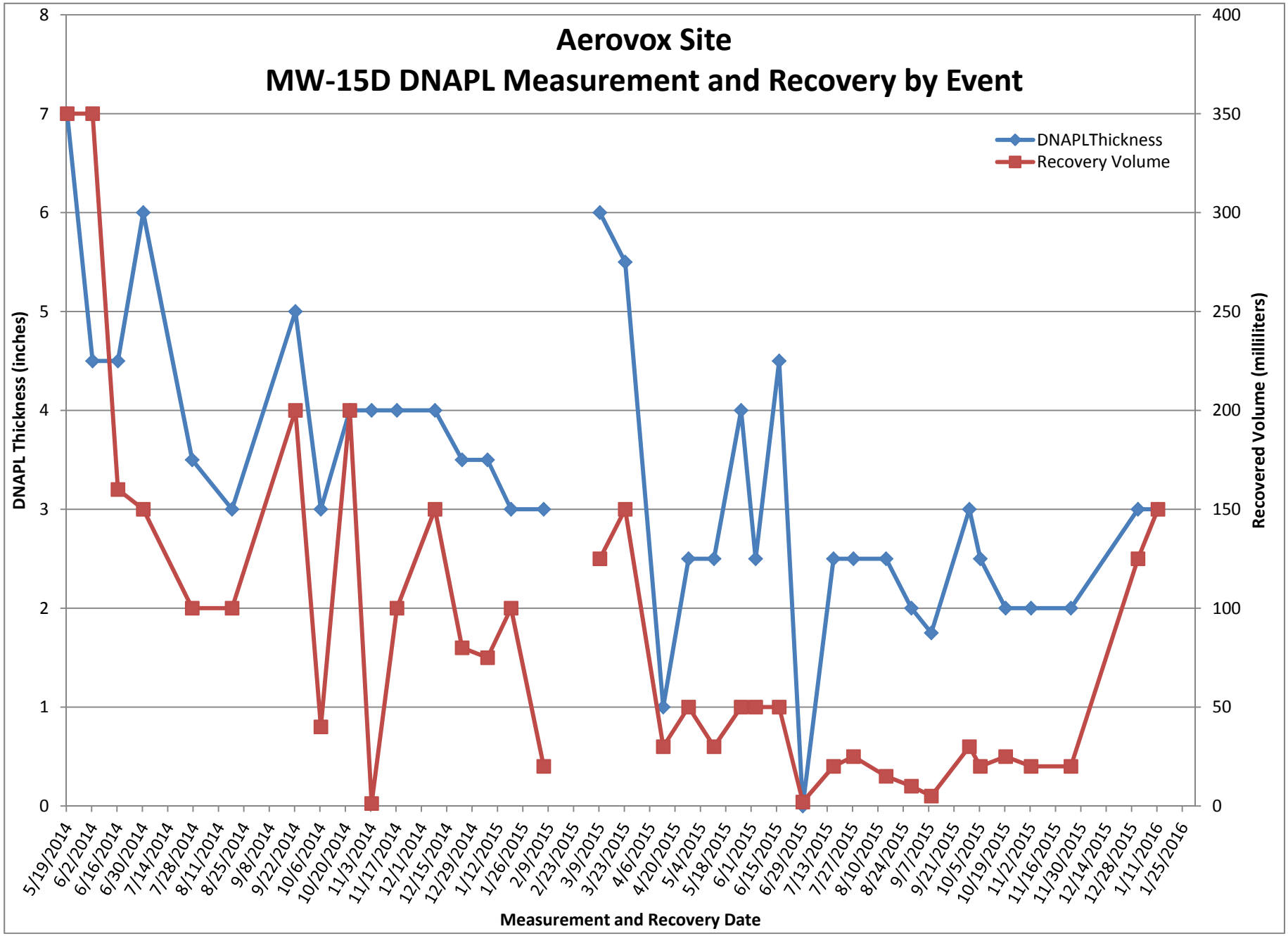
12/28/2015
1/11/2016
1/25/2016


Aerovox Site
MW-15D DNAPL Measurement and Recovery by Event
DNAPLThickness
Recovery Volume
DNAPL Thickness (inches)
Recovered Volume (milliliters)
Measurement and Recovery Date
0
1
2
3
4
5
6
7
8
0
50
100
150
200
250
300
350
400
5/19/2014
6/2/2014
6/16/2014
6/30/2014
7/14/2014
7/28/2014
8/11/2014
8/25/2014
9/8/2014
9/22/2014
10/6/2014
10/20/2014
11/3/2014
11/17/2014
12/1/2014
12/15/2014
12/29/2014
1/12/2015
1/26/2015
2/9/2015
2/23/2015
3/9/2015
3/23/2015
4/6/2015
4/20/2015
5/4/2015
5/18/2015
6/1/2015
6/15/2015
6/29/2015
7/13/2015
7/27/2015
8/10/2015
8/24/2015
9/7/2015
9/21/2015
10/5/2015
10/19/2015
11/2/2015
11/16/2015
11/30/2015
12/14/2015
12/28/2015
1/11/2016
1/25/2016

Appendix B

Analytical Reports for Geotechnical Borings

Client:	Alpha Analytical
Project Name:	L1520960
Project Location:	---
GTX #:	303663
Test Date:	0915/15
Tested By:	ckg
Checked By:	emm

Moisture Content by ASTM D2216

Boring ID	Sample ID	Depth, ft	Mass Wet Soil and Glass Tare, g	Mass of Dry Soil and Glass Tare, g	Mass of Glass Tare, g	moisture content, %
---	GEO-2B (10-12)	---	514.73	439.45	170.00	27.9
---	GEO-2B (18-20)	---	586.63	498.58	170.77	26.9
---	GEO-2B (28-30)	---	495.98	462.63	170.51	11.4
---	GEO-7B (14-16)	---	613.21	526.52	164.07	23.9
---	GEO-7B (22-24)	---	506.10	463.60	167.54	14.4
---	GEO-7B (28-28.5)	---	556.94	516.82	167.77	11.5
---	GEO-15B (19-21)	---	539.76	505.53	169.76	10.2
---	GEO-15B (25-27)	---	602.43	564.26	168.41	9.6
---	GEO-15B (13-15)	---	679.75	632.75	166.19	10.1
---	GEO-17B (14-16)	---	490.07	439.81	164.57	18.3
---	GEO-17B (20-22)	---	664.47	572.01	165.29	22.7
---	GEO-17B (30-32)	---	654.52	621.80	167.80	7.2

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	---	Tested By:	md
Sample ID:	---	Test Date:	10/16/15	Checked By:	emm
Depth :	---	Test Id:	346285		

Laboratory Determination of Density (Unit Weight) of Soil Specimens by ASTM D7263

Boring ID	Sample ID	Depth	Visual Description	Bulk Density pcf	Moisture Content %	Dry Density pcf	*
---	GEO- 2B (10-12) (Tube)	---	Moist, olive silty gravel with sand	136.0	12.61	120.8	(1)
---	GEO- 2B (18-20) (Tube)	---	Moist, gray silt with sand	124.3	22.40	101.6	(2)
---	GEO- 7B (14-16) (Tube)	---	Moist, gray silt	128.8	24.89	103.2	(3)
---	GEO- 15B (13-15) (Tube)	---	Moist, brown sand with silt and gravel	125.8	11.78	112.5	(4)
---	GEO- 17B (14-16) (Tube)	---	Moist, very dark gray sand with silt	139.0	14.78	121.1	(5)
---	GEO- 17B (20-22) (Tube)	---	Moist, brown silty sand	119.5	10.42	108.2	(6)

* Sample Comments

(1): Method B-Cylinder, Intact

(2): Method B-Cylinder, Intact

(3): Method B-Cylinder, Intact

(4): Method B-Cylinder, Intact

(5): Method B-Cylinder, Intact

(6): Method B-Cylinder, Intact

Notes: Moisture Content determined by ASTM D2216.

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	---	Tested By:	jbr
Sample ID:	---	Test Date:	09/18/15	Checked By:	emm
Depth :	---	Test Id:	345991		

Specific Gravity of Soils by ASTM D854

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity	Comment
---	GEO-2B (10-12) (Tube)	---	Moist, olive silty gravel with sand	2.69	
---	GEO-2B (18-20) (Tube)	---	Moist, gray silt with sand	2.66	
---	GEO-2B (28-30) (Bag)	---	Moist, grayish brown gravel with sand	2.68	
---	GEO-7B (14-16) (Tube)	---	Moist, gray silt	2.69	
---	GEO-7B (22-24) (Bag)	---	Moist, dark yellowish brown gravel with sand	2.64	

Notes: Specific Gravity performed by using method B (oven dried specimens) of ASTM D854
Moisture Content determined by ASTM D2216.

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	---	Tested By:	jbr
Sample ID:	---	Test Date:	09/16/15	Checked By:	emm
Depth :	---	Test Id:	345983		

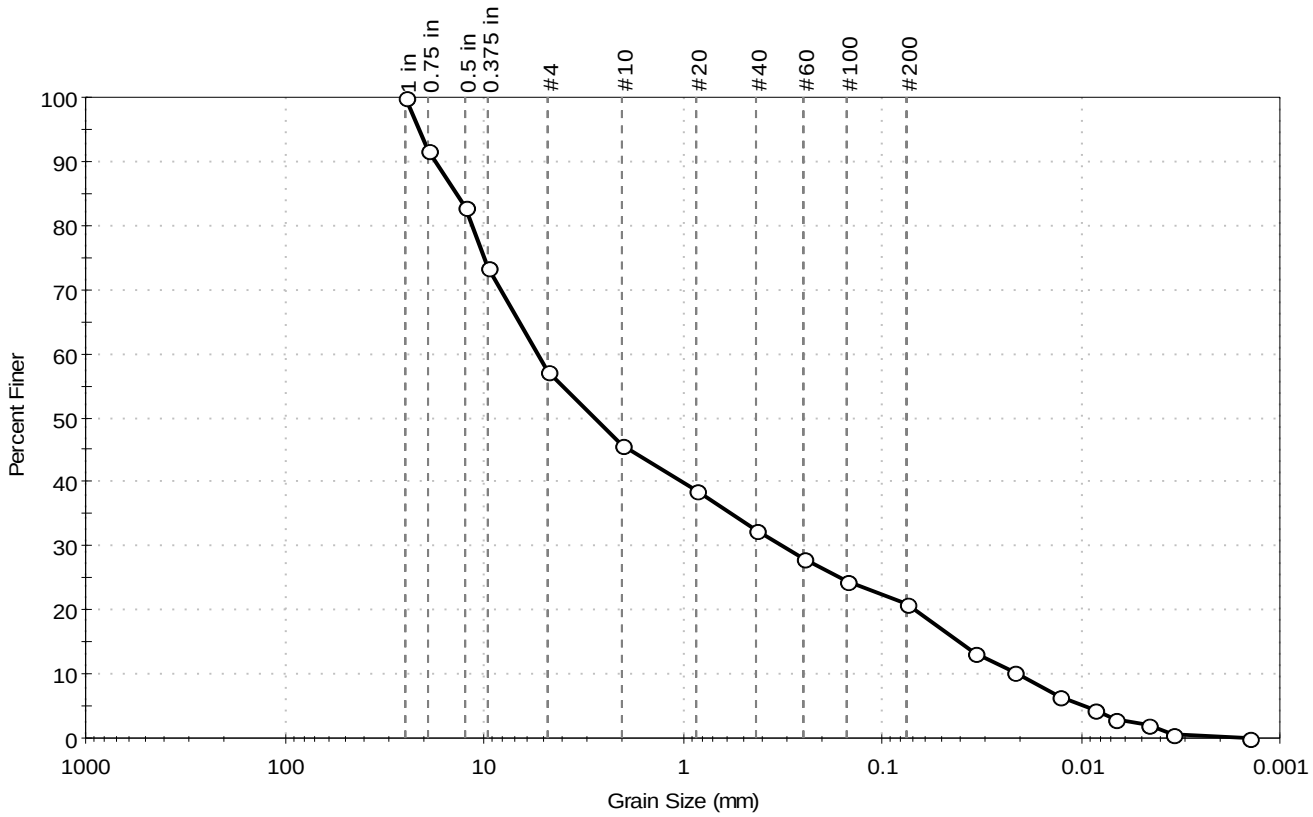
Specific Gravity of Soils by ASTM D854

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity	Comment
---	GEO-15B (13-15) (Tube)	---	Moist, brown sand with silt and gravel	2.68	
---	GEO-15B (19-21) (Bag)	---	Wet, dark grayish brown sand with gravel	2.65	
---	GEO-15B (25-28.5) (Bag)	---	Moist, light yellowish brown gravel with silt and sand	2.70	
---	GEO-17B (14-16) (Tube)	---	Moist, very dark gray sand with silt	2.66	
---	GEO-17B (20-22) (Tube)	---	Moist, brown silty sand	2.68	
---	GEO-17B (30-32) (Bag)	---	Moist, brown silty sand with gravel	2.68	

Notes: Specific Gravity performed by using method B (oven dried specimens) of ASTM D854
Moisture Content determined by ASTM D2216.

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	tube	Tested By:	jbr
Sample ID:	GEO-2B (10-12) (Tube)	Test Date:	10/15/15	Checked By:	emm
Depth :	---	Test Id:	346396		
Test Comment:	---				
Visual Description:	Moist, olive silty gravel with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



%Cobble	%Gravel	%Sand	%Silt & Clay Size
---	42.7	36.3	21.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	92		
0.5 in	12.50	83		
0.375 in	9.50	74		
#4	4.75	57		
#10	2.00	46		
#20	0.85	39		
#40	0.42	33		
#60	0.25	28		
#100	0.15	25		
#200	0.075	21		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0342	13		
---	0.0217	10		
---	0.0129	7		
---	0.0085	4		
---	0.0067	3		
---	0.0046	2		
---	0.0034	1		
---	0.0014	0		

Coefficients

D_{85} = 13.7762 mm	D_{30} = 0.3122 mm
D_{60} = 5.3418 mm	D_{15} = 0.0408 mm
D_{50} = 2.7751 mm	D_{10} = 0.0207 mm
C_u = 258.058	C_c = 0.881

Classification

ASTM Silty gravel with sand (GM)

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample / Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

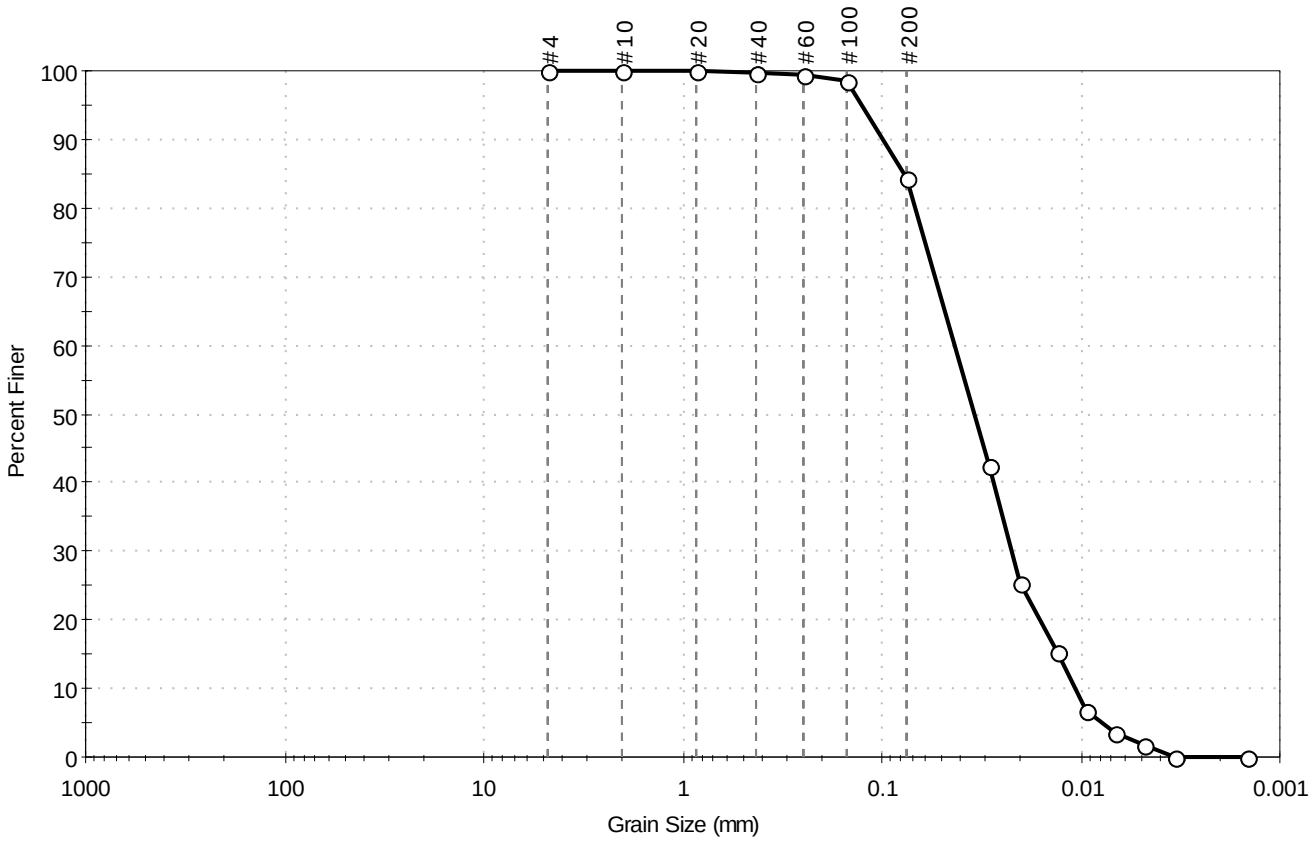
Dispersion Period : 1 minute

Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	tube	Tested By:	jbr
Sample ID:	GEO-2B (18-20) (Tube)	Test Date:	09/17/15	Checked By:	emm
Depth :	---	Test Id:	346397		
Test Comment:	---				
Visual Description:	Moist, gray silt with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	15.5	84.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	99		
#200	0.075	84		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0287	43		
---	0.0201	26		
---	0.0131	15		
---	0.0095	7		
---	0.0067	3		
---	0.0048	2		
---	0.0034	0		
---	0.0015	0		

Coefficients

D_{85} = 0.0769 mm	D_{30} = 0.0221 mm
D_{60} = 0.0429 mm	D_{15} = 0.0129 mm
D_{50} = 0.0341 mm	D_{10} = 0.0107 mm
C_u = 4.009	C_c = 1.064

Classification

ASTM Silt with sand (ML)

AASHTO Silty Soils (A-4 (0))

Sample / Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

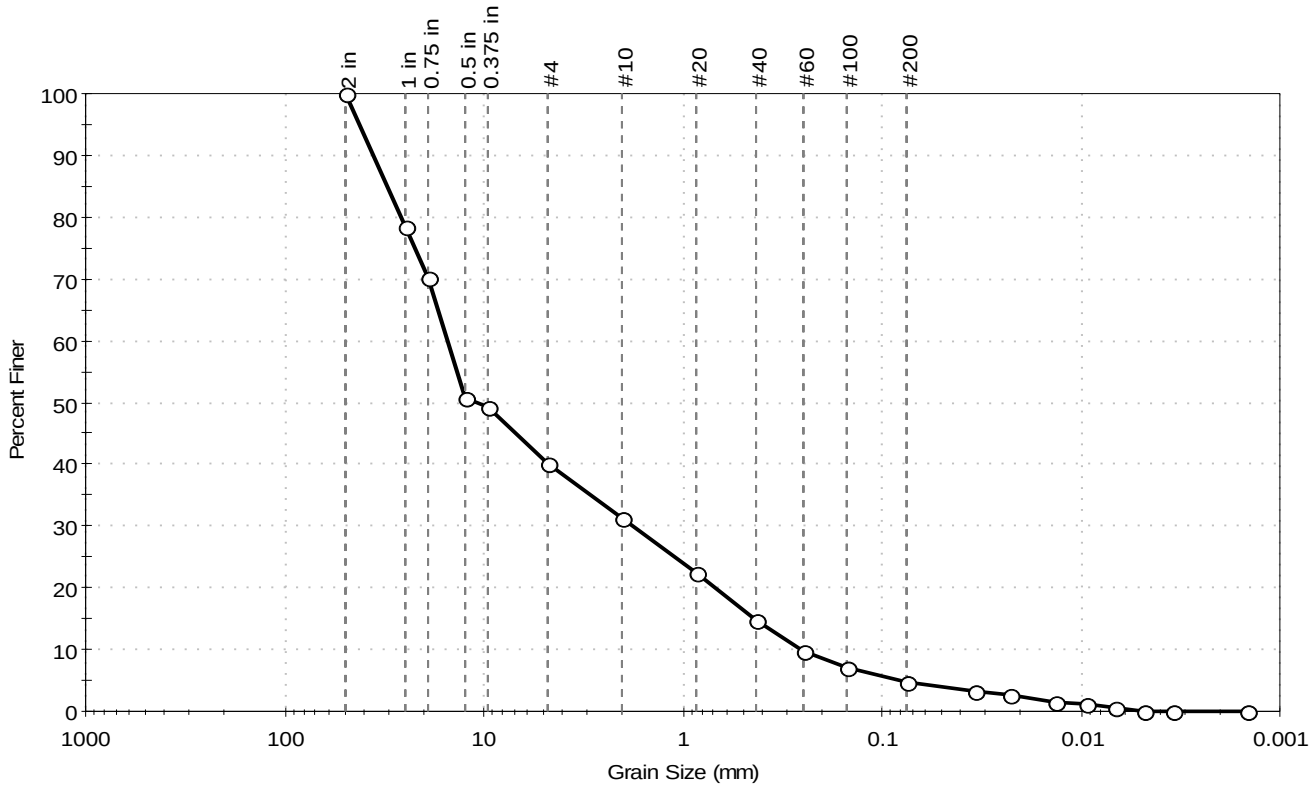
Dispersion Period : 1 minute

Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	bag	Tested By:	jbr
Sample ID:	GEO-2B (28-30) (Bag)	Test Date:	09/17/15	Checked By:	emm
Depth :	---	Test Id:	346398		
Test Comment:	---				
Visual Description:	Moist, grayish brown gravel with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



%Cobble	%Gravel	%Sand	%Silt & Clay Size
---	59.9	35.2	4.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
2 in	50.00	100		
1 in	25.00	79		
0.75 in	19.00	70		
0.5 in	12.50	51		
0.375 in	9.50	49		
#4	4.75	40		
#10	2.00	31		
#20	0.85	22		
#40	0.42	15		
#60	0.25	10		
#100	0.15	7		
#200	0.075	4.9		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0344	3		
---	0.0227	3		
---	0.0135	2		
---	0.0095	1		
---	0.0068	1		
---	0.0049	0		
---	0.0034	0		
---	0.0015	0		

Coefficients

D_{85} = 30.7527 mm	D_{30} = 1.7658 mm
D_{60} = 15.2601 mm	D_{15} = 0.4295 mm
D_{50} = 10.9687 mm	D_{10} = 0.2538 mm
C_u = 60.126	C_c = 0.805

Classification

ASTM — Poorly graded gravel with sand (GP)

AASHTO — Stone Fragments, Gravel and Sand (A-1-a (1))

Sample / Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

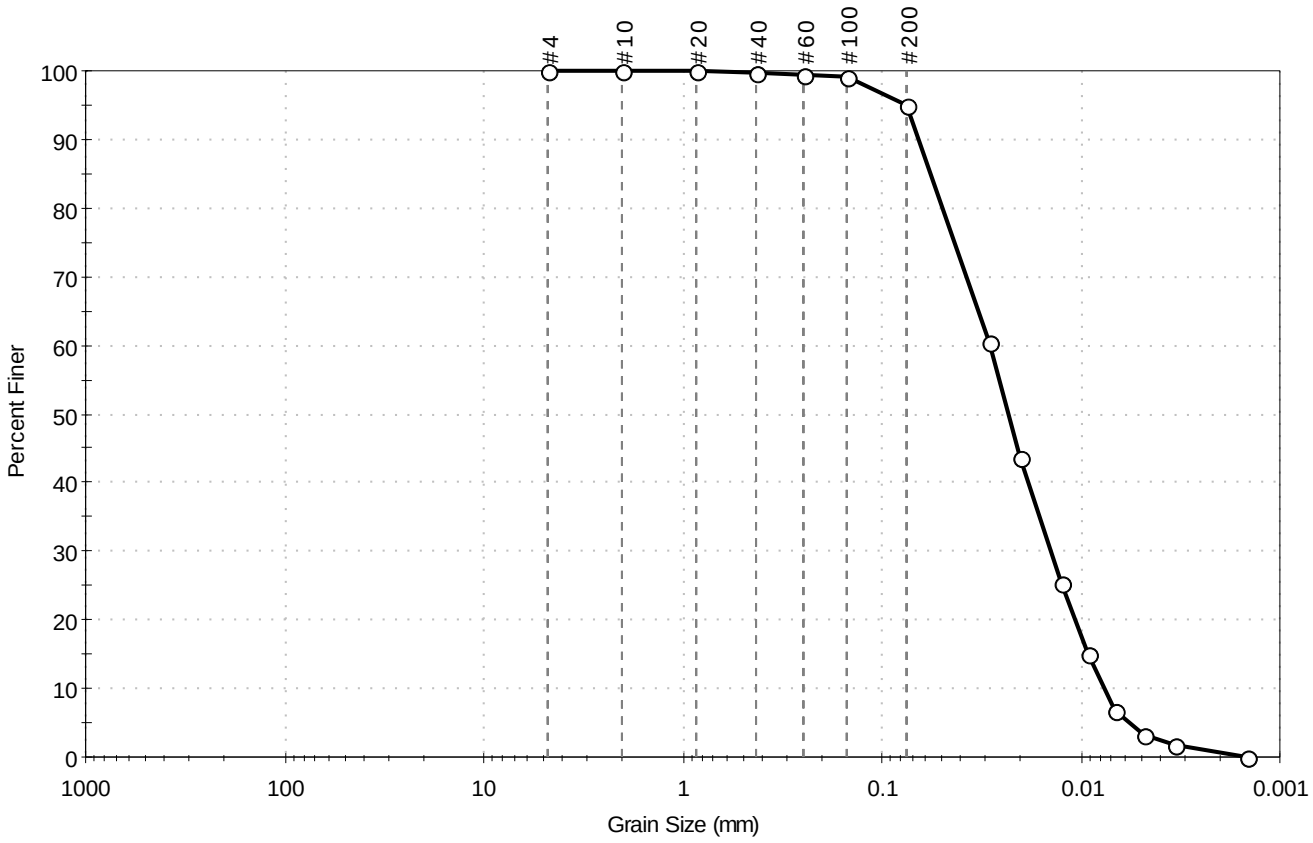
Dispersion Period : 1 minute

Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	tube	Tested By:	jbr
Sample ID:	GEO-7B (14-16) (Tube)	Test Date:	09/17/15	Checked By:	emm
Depth :	---	Test Id:	346399		
Test Comment:	---				
Visual Description:	Moist, gray silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	4.9	95.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	99		
#200	0.075	95		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0291	61		
---	0.0200	44		
---	0.0126	25		
---	0.0092	15		
---	0.0067	7		
---	0.0048	3		
---	0.0034	2		
---	0.0014	0		

Coefficients

D_{85} = 0.0569 mm	D_{30} = 0.0142 mm
D_{60} = 0.0287 mm	D_{15} = 0.0091 mm
D_{50} = 0.0230 mm	D_{10} = 0.0076 mm
C_u = 3.776	C_c = 0.924

Classification

ASTM Silt (ML)

AASHTO Silty Soils (A-4 (0))

Sample / Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Dispersion Device : Apparatus A - Mech Mixer

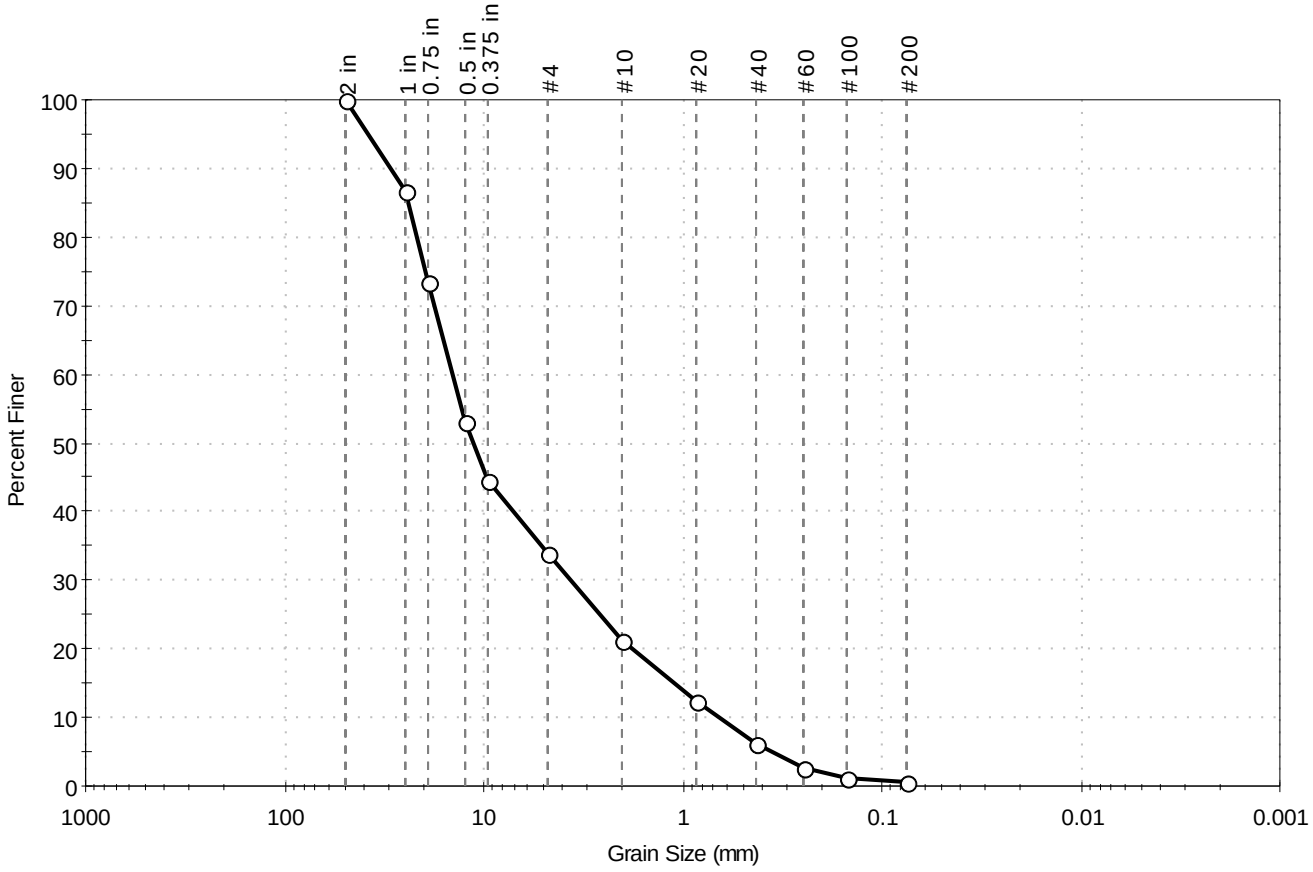
Dispersion Period : 1 minute

Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	bag	Tested By:	jbr
Sample ID:	GEO-7B (22-24) (Bag)	Test Date:	09/16/15	Checked By:	emm
Depth :	---	Test Id:	346400		
Test Comment:	---				
Visual Description:	Moist, dark yellowish brown gravel with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	66.0	33.5	0.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
2 in	50.00	100		
1 in	25.00	87		
0.75 in	19.00	73		
0.5 in	12.50	53		
0.375 in	9.50	45		
#4	4.75	34		
#10	2.00	21		
#20	0.85	12		
#40	0.42	6		
#60	0.25	3		
#100	0.15	1		
#200	0.075	0.5		

Coefficients

D_{85} = 24.1421 mm	D_{30} = 3.6331 mm
D_{60} = 14.4316 mm	D_{15} = 1.1031 mm
D_{50} = 11.3405 mm	D_{10} = 0.6505 mm
C_u = 22.185	C_c = 1.406

Classification

ASTM — Well-graded gravel with sand (GW)

AASHTO — Stone Fragments, Gravel and Sand (A-1-a (1))

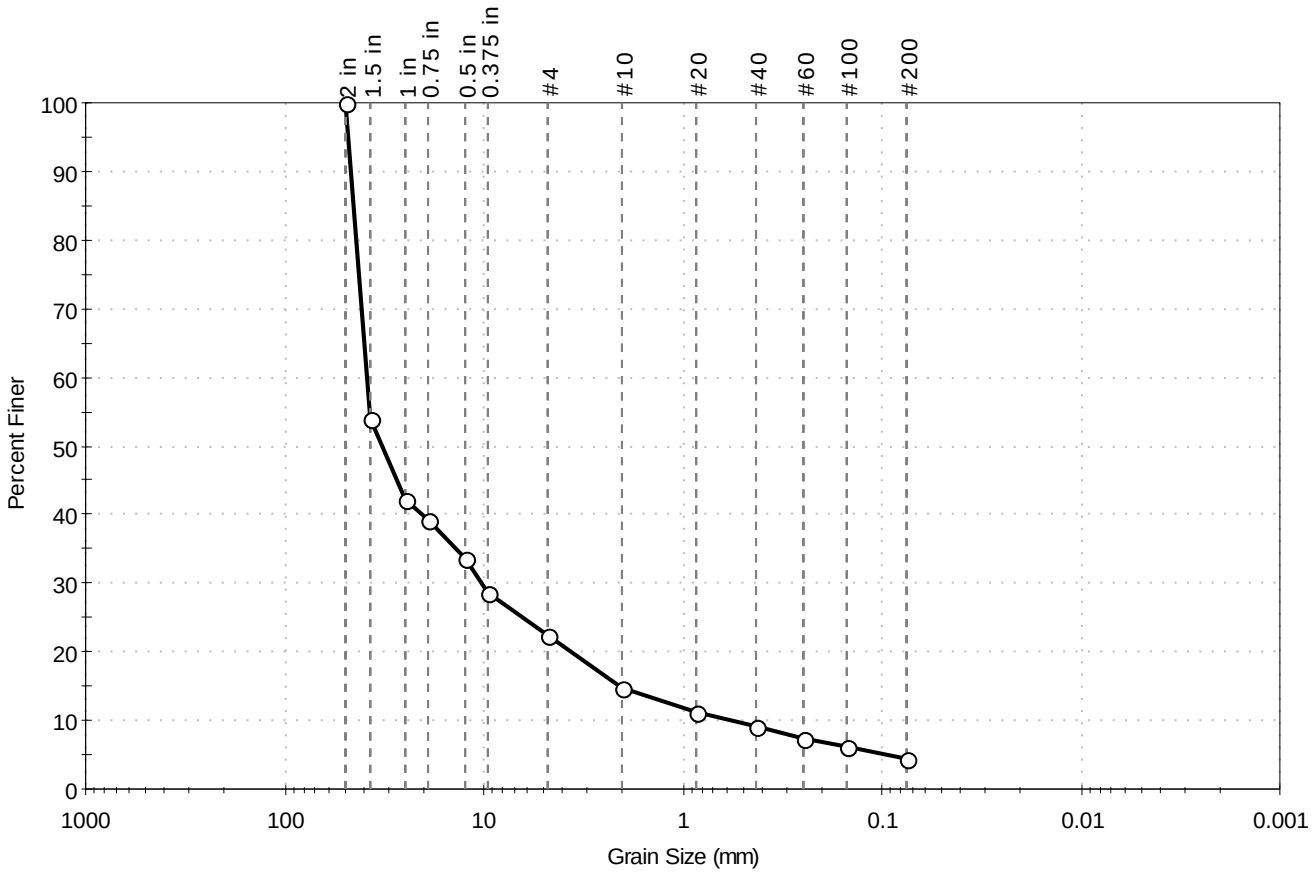
Sample / Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	bag	Tested By:	jbr
Sample ID:	GEO-7B (28-28.5) (Bag)	Test Date:	10/01/15	Checked By:	emm
Depth :	---	Test Id:	346401		
Test Comment:	---				
Visual Description:	Moist, olive gray gravel with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	77.7	18.0	4.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
2 in	50.00	100		
1.5 in	37.50	54		
1 in	25.00	42		
0.75 in	19.00	39		
0.5 in	12.50	33		
0.375 in	9.50	29		
#4	4.75	22		
#10	2.00	15		
#20	0.85	11		
#40	0.42	9		
#60	0.25	7		
#100	0.15	6		
#200	0.075	4.3		

Coefficients

D_{85} = 45.5187 mm	D_{30} = 10.2107 mm
D_{60} = 38.9245 mm	D_{15} = 2.0274 mm
D_{50} = 32.7055 mm	D_{10} = 0.5724 mm
C_u = 68.002	C_c = 4.679

Classification

ASTM — Poorly graded gravel with sand (GP)

AASHTO — Stone Fragments, Gravel and Sand (A-1-a (1))

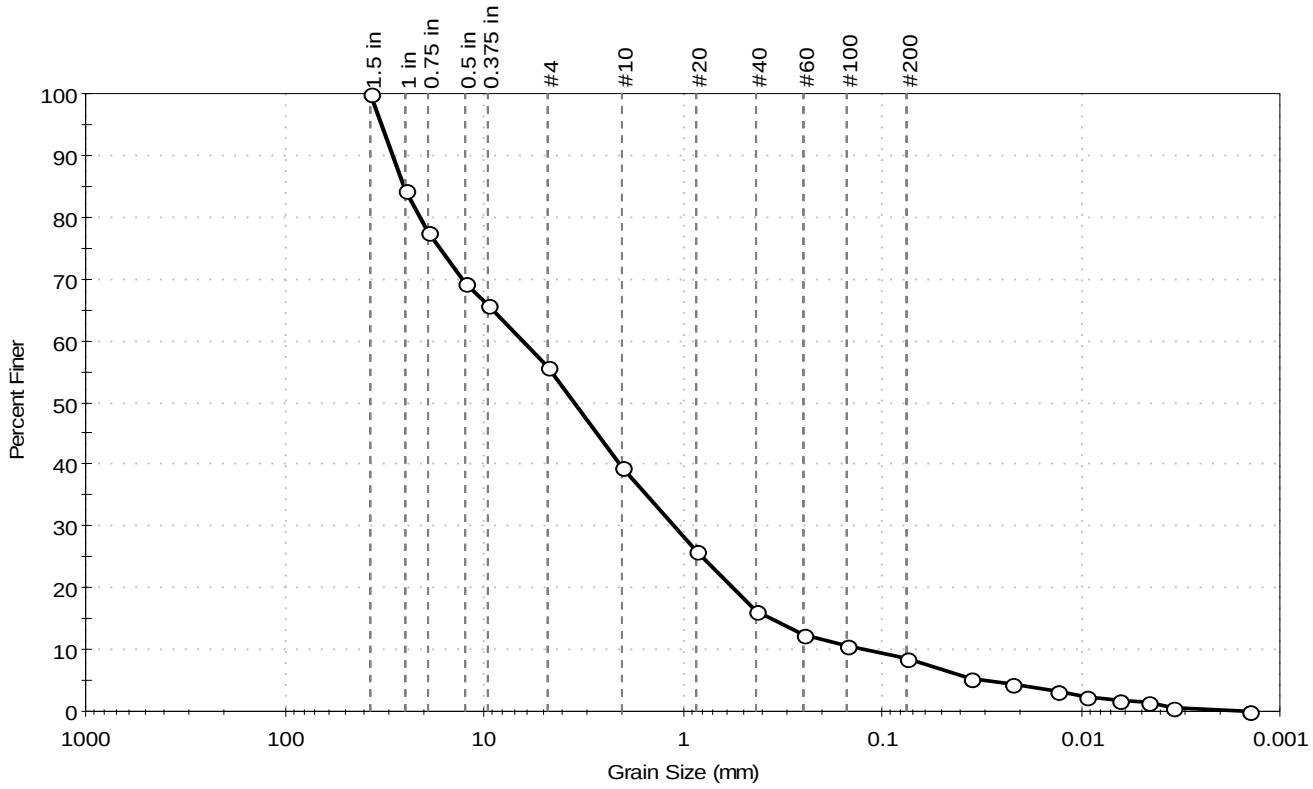
Sample / Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	tube	Tested By:	jbr
Sample ID:	GEO-15B (13-15) (Tube)	Test Date:	10/15/15	Checked By:	emm
Depth :	---	Test Id:	346404		
Test Comment:	---				
Visual Description:	Moist, brown sand with silt and gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



%Cobble	%Gravel	%Sand	%Silt & Clay Size
---	44.3	47.1	8.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	84		
0.75 in	19.00	77		
0.5 in	12.50	69		
0.375 in	9.50	66		
#4	4.75	56		
#10	2.00	40		
#20	0.85	26		
#40	0.42	16		
#60	0.25	12		
#100	0.15	11		
#200	0.075	8.6		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0355	5		
---	0.0222	4		
---	0.0133	3		
---	0.0094	2		
---	0.0065	2		
---	0.0046	1		
---	0.0034	0		
---	0.0014	0		

Coefficients

D_{85} = 25.4611 mm	D_{30} = 1.0925 mm
D_{60} = 6.3826 mm	D_{15} = 0.3541 mm
D_{50} = 3.5001 mm	D_{10} = 0.1232 mm
C_u = 51.807	C_c = 1.518

Classification

ASTM — Well-graded sand with silt and gravel (SW-SM)

AASHTO — Stone Fragments, Gravel and Sand (A-1-a (1))

Sample / Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

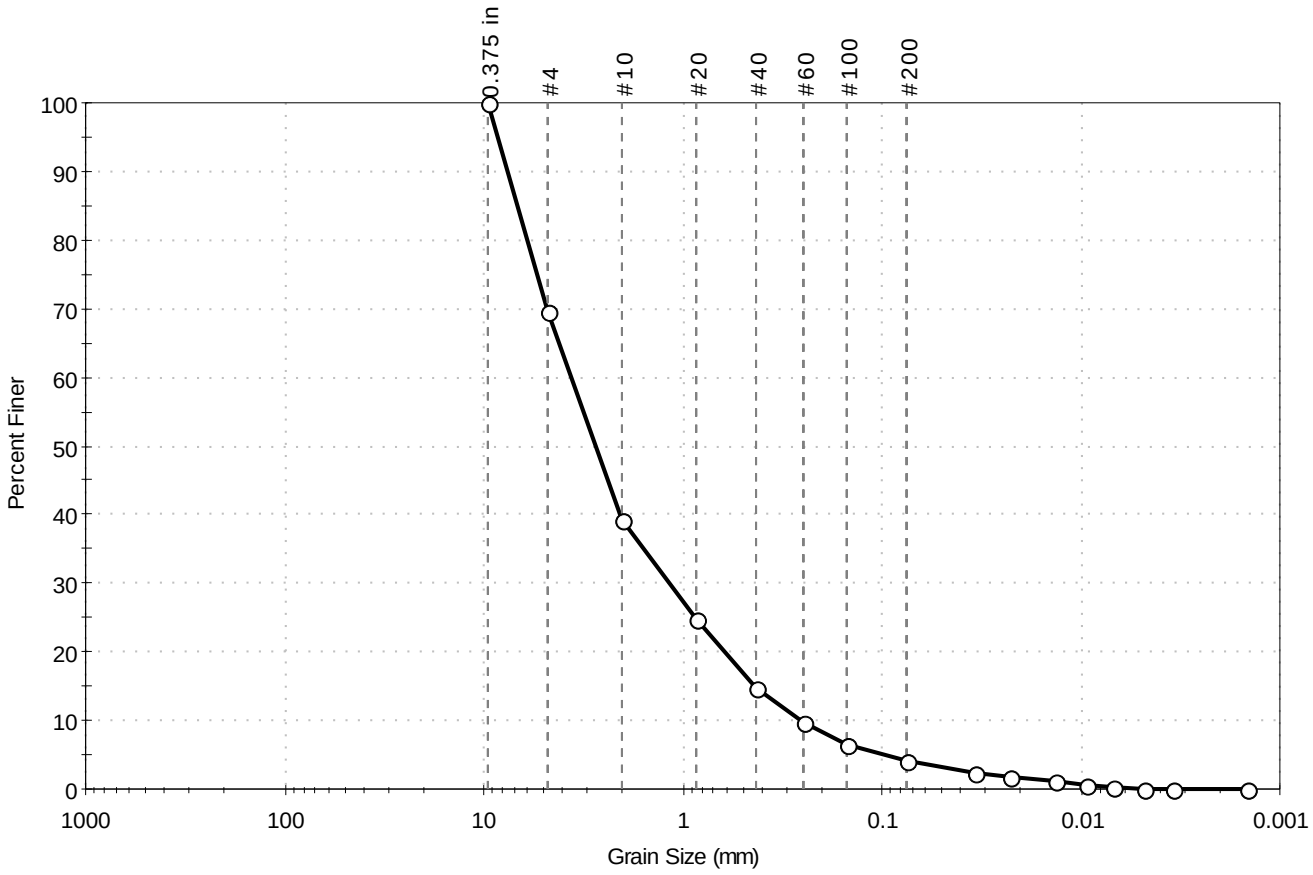
Dispersion Period : 1 minute

Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	bag	Tested By:	jbr
Sample ID:	GEO-15B (19-21) (Bag)	Test Date:	09/16/15	Checked By:	emm
Depth :	---	Test Id:	346402		
Test Comment:	---				
Visual Description:	Wet, dark grayish brown sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	30.3	65.5	4.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	70		
#10	2.00	39		
#20	0.85	25		
#40	0.42	15		
#60	0.25	10		
#100	0.15	7		
#200	0.075	4.2		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0342	2		
---	0.0228	2		
---	0.0133	1		
---	0.0094	1		
---	0.0069	0		
---	0.0048	0		
---	0.0034	0		
---	0.0015	0		

Coefficients

D_{85} = 6.7435 mm	D_{30} = 1.1563 mm
D_{60} = 3.6053 mm	D_{15} = 0.4335 mm
D_{50} = 2.7102 mm	D_{10} = 0.2584 mm
C_u = 13.952	C_c = 1.435

Classification

ASTM: Well-graded sand with gravel (SW)

AASHTO: Stone Fragments, Gravel and Sand (A-1-a (1))

Sample / Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

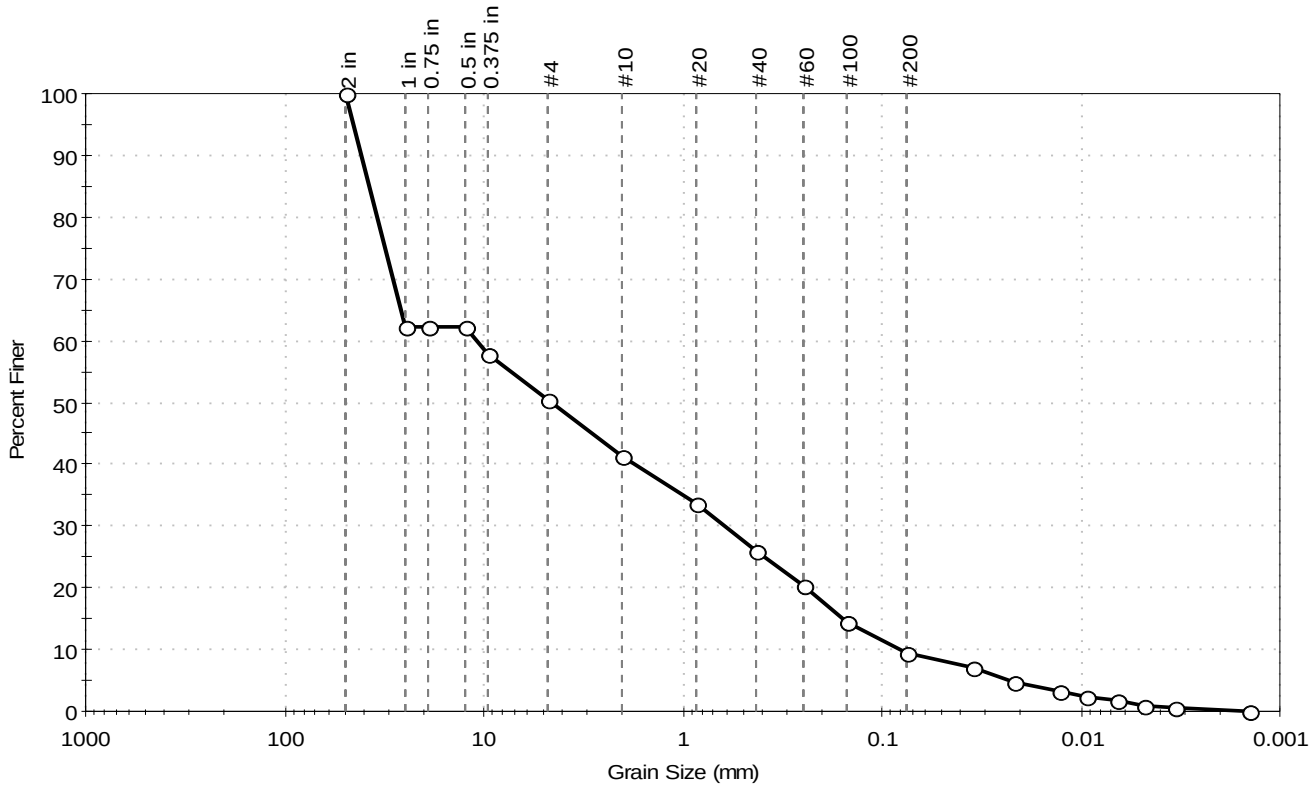
Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	bag	Tested By:	jbr
Sample ID:	GEO-15B (25-28.5) (Bag)	Test Date:	09/17/15	Checked By:	emm
Depth :	---	Test Id:	346403		

Test Comment: ---
Visual Description: Moist, light yellowish brown gravel with silt and sand
Sample Comment: ---

Particle Size Analysis - ASTM D422



%Cobble	%Gravel	%Sand	%Silt & Clay Size
---	49.6	41.1	9.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
2 in	50.00	100		
1 in	25.00	62		
0.75 in	19.00	62		
0.5 in	12.50	62		
0.375 in	9.50	58		
#4	4.75	50		
#10	2.00	41		
#20	0.85	34		
#40	0.42	26		
#60	0.25	20		
#100	0.15	14		
#200	0.075	9.3		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0350	7		
---	0.0217	5		
---	0.0128	3		
---	0.0094	2		
---	0.0066	2		
---	0.0048	1		
---	0.0034	0		
---	0.0014	0		

Coefficients

D_{85} = 37.9780 mm	D_{30} = 0.6067 mm
D_{60} = 10.8820 mm	D_{15} = 0.1588 mm
D_{50} = 4.5604 mm	D_{10} = 0.0822 mm
C_u = 132.384	C_c = 0.411

Classification

ASTM: Poorly graded gravel with silt and sand (GP-GM)

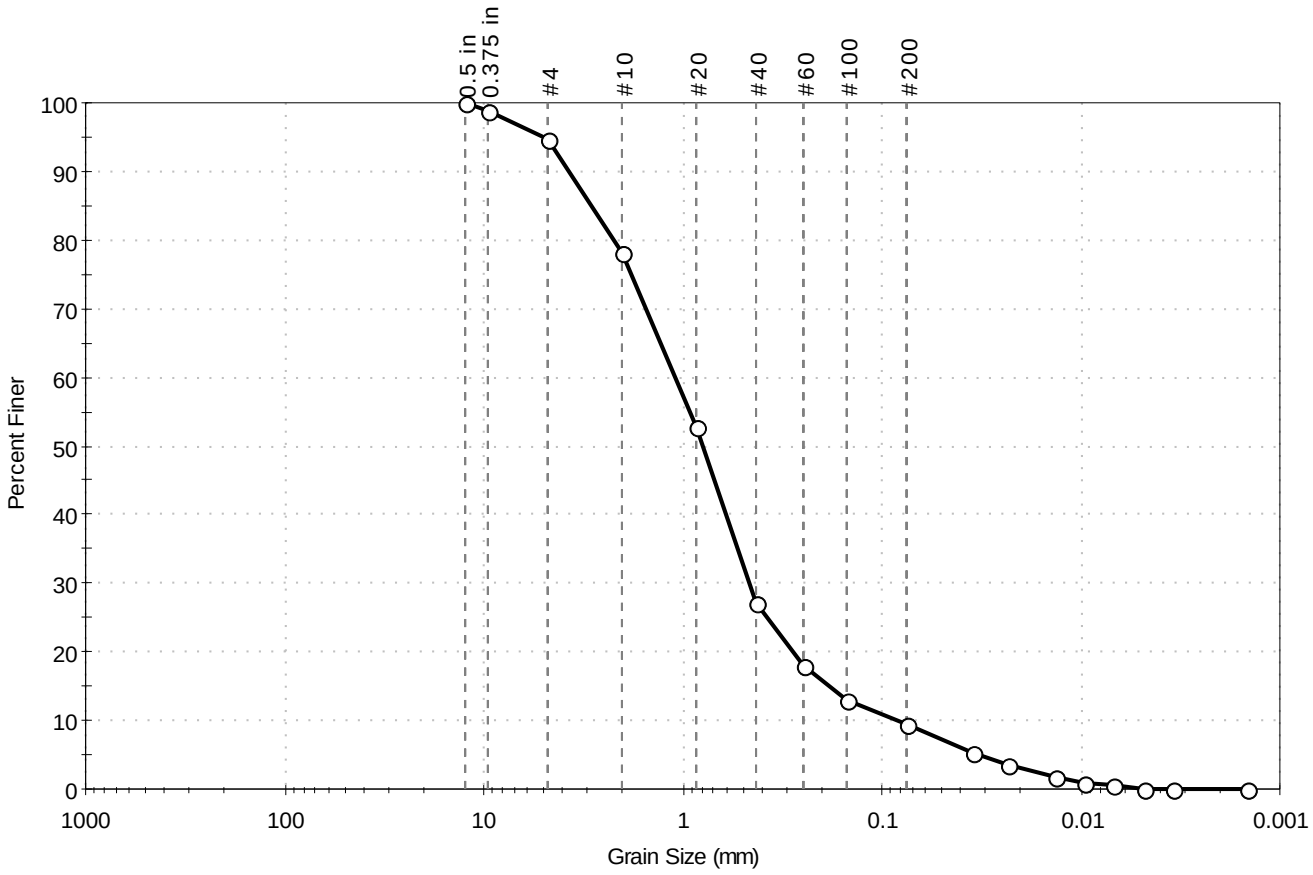
AASHTO: Stone Fragments, Gravel and Sand (A-1-a (1))

Sample / Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Specific Gravity : 2.65
Separation of Sample: #200 Sieve

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	tube	Tested By:	jbr
Sample ID:	GEO-17B (14-16) (Tube)	Test Date:	09/17/15	Checked By:	emm
Depth :	---	Test Id:	346393		
Test Comment:	---				
Visual Description:	Moist, very dark gray sand with silt				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	5.4	85.3	9.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.5 in	12.50	100		
0.375 in	9.50	99		
#4	4.75	95		
#10	2.00	78		
#20	0.85	53		
#40	0.42	27		
#60	0.25	18		
#100	0.15	13		
#200	0.075	9.3		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0352	5		
---	0.0232	4		
---	0.0135	2		
---	0.0096	1		
---	0.0068	0		
---	0.0048	0		
---	0.0034	0		
---	0.0015	0		

Coefficients

D_{85} = 2.8630 mm	D_{30} = 0.4602 mm
D_{60} = 1.0819 mm	D_{15} = 0.1851 mm
D_{50} = 0.7875 mm	D_{10} = 0.0860 mm
C_u = 12.580	C_c = 2.276

Classification

ASTM: Well-graded sand with silt (SW-SM)

AASHTO: Stone Fragments, Gravel and Sand (A-1-b (1))

Sample / Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

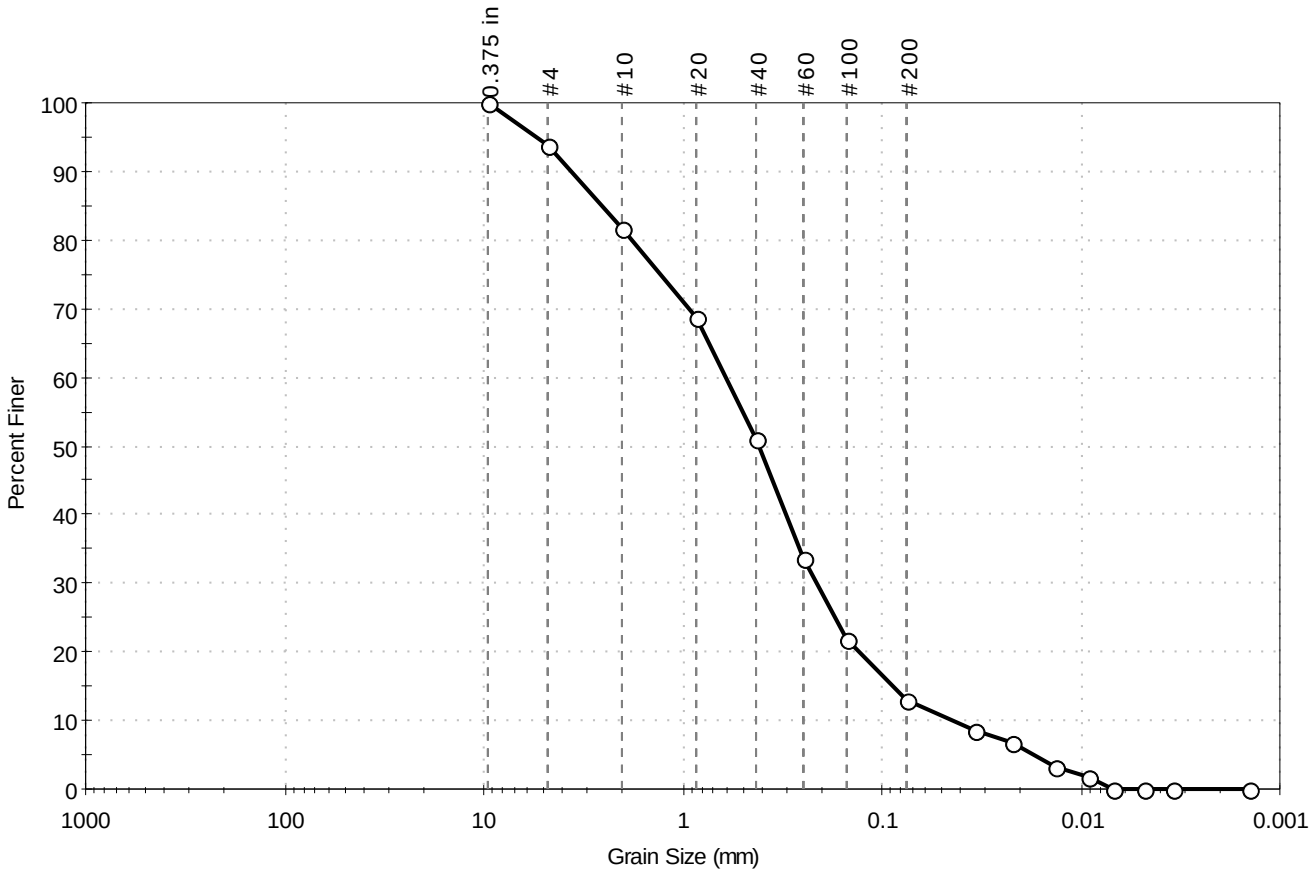
Dispersion Period : 1 minute

Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	tube	Tested By:	jbr
Sample ID:	GEO-17B (20-22) (Tube)	Test Date:	10/15/15	Checked By:	emm
Depth :	---	Test Id:	346394		
Test Comment:	---				
Visual Description:	Moist, brown silty sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	6.2	80.7	13.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	94		
#10	2.00	82		
#20	0.85	69		
#40	0.42	51		
#60	0.25	34		
#100	0.15	22		
#200	0.075	13		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0344	8		
---	0.0223	7		
---	0.0133	3		
---	0.0091	2		
---	0.0069	0		
---	0.0048	0		
---	0.0034	0		
---	0.0014	0		

Coefficients

D_{85} = 2.5384 mm	D_{30} = 0.2135 mm
D_{60} = 0.6015 mm	D_{15} = 0.0872 mm
D_{50} = 0.4108 mm	D_{10} = 0.0448 mm
C_u = 13.426	C_c = 1.692

Classification

ASTM Silty sand (SM)

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample / Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

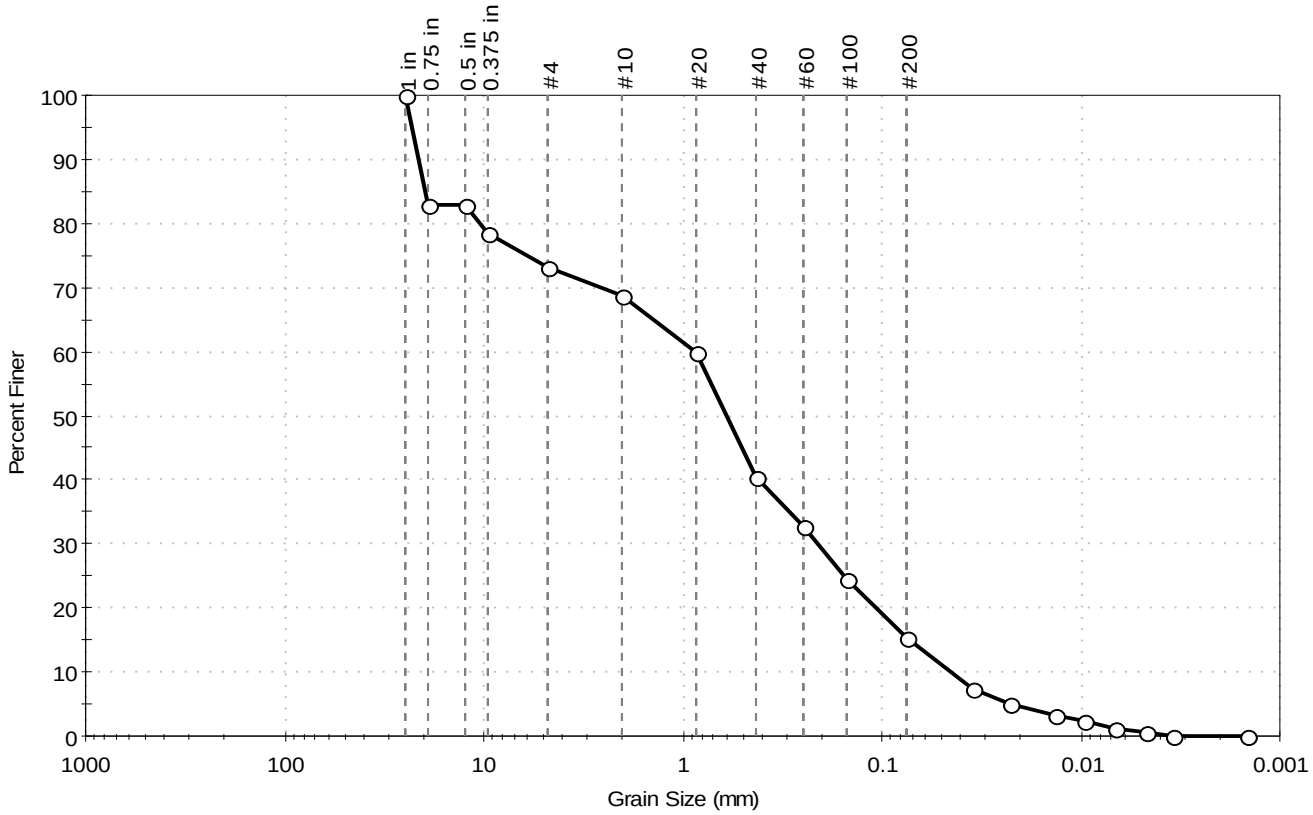
Dispersion Period : 1 minute

Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	bag	Tested By:	jbr
Sample ID:	GEO-17B (30-32) (Bag)	Test Date:	09/17/15	Checked By:	emm
Depth :	---	Test Id:	346395		
Test Comment:	---				
Visual Description:	Moist, brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D422



%Cobble	%Gravel	%Sand	%Silt & Clay Size
---	26.8	57.8	15.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	83		
0.5 in	12.50	83		
0.375 in	9.50	78		
#4	4.75	73		
#10	2.00	69		
#20	0.85	60		
#40	0.42	40		
#60	0.25	33		
#100	0.15	25		
#200	0.075	15		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0351	7		
---	0.0228	5		
---	0.0134	3		
---	0.0096	2		
---	0.0068	1		
---	0.0048	1		
---	0.0034	0		
---	0.0015	0		

Coefficients

D_{85} = 19.6182 mm
D_{30} = 0.2111 mm
D_{60} = 0.8583 mm
D_{15} = 0.0725 mm
D_{50} = 0.5971 mm
D_{10} = 0.0448 mm
C_u = 19.158
C_c = 1.159

Classification

ASTM — Silty sand with gravel (SM)

AASHTO — Stone Fragments, Gravel and Sand (A-1-b (0))

Sample / Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Dispersion Device : Apparatus A - Mech Mixer

Dispersion Period : 1 minute

Specific Gravity : 2.65

Separation of Sample: #200 Sieve

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	tube	Tested By:	cam
Sample ID:	GEO-2B (10-12) (Tube)	Test Date:	10/13/15	Checked By:	emm
Depth :	---	Test Id:	345956		
Test Comment:	---				
Visual Description:	Moist, olive silty gravel with sand				
Sample Comment:	---				

Atterberg Limits - ASTM D4318

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	GEO-2B (10-12) (Tube)	---	---	13	n/a	n/a	n/a	n/a	Silty gravel with sand (GM)

67% Retained on #40 Sieve

Dry Strength: MEDIUM

Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	tube	Tested By:	cam
Sample ID:	GEO-2B (18-20) (Tube)	Test Date:	09/16/15	Checked By:	emm
Depth :	---	Test Id:	345957		
Test Comment:	---				
Visual Description:	Moist, gray silt with sand				
Sample Comment:	---				

Atterberg Limits - ASTM D4318

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	GEO-2B (18-20) (Tube)	---	---	24	n/a	n/a	n/a	n/a	Silt with sand (ML)

0% Retained on #40 Sieve

Dry Strength: MEDIUM

Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	bag	Tested By:	cam
Sample ID:	GEO-2B (28-30) (Bag)	Test Date:	09/16/15	Checked By:	emm
Depth :	---	Test Id:	345984		
Test Comment:	---				
Visual Description:	Moist, grayish brown gravel with sand				
Sample Comment:	---				

Atterberg Limits - ASTM D4318

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	GEO-2B (28-30) (Bag)	---	---	8	n/a	n/a	n/a	n/a	Poorly graded gravel with sand (GP)

85% Retained on #40 Sieve

Dry Strength: LOW

Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	tube	Tested By:	cam
Sample ID:	GEO-7B (14-16) (Tube)	Test Date:	09/16/15	Checked By:	emm
Depth :	---	Test Id:	345958		
Test Comment:	---				
Visual Description:	Moist, gray silt				
Sample Comment:	---				

Atterberg Limits - ASTM D4318

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	GEO-7B (14-16) (Tube)	---	---	26	n/a	n/a	n/a	n/a	Silt (ML)

0% Retained on #40 Sieve

Dry Strength: MEDIUM

Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	bag	Tested By:	cam
Sample ID:	GEO-7B (22-24) (Bag)	Test Date:	09/16/15	Checked By:	emm
Depth :	---	Test Id:	345988		
Test Comment:	---				
Visual Description:	Moist, dark yellowish brown gravel with sand				
Sample Comment:	---				

Atterberg Limits - ASTM D4318

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	GEO-7B (22-24) (Bag)	---	---	8	n/a	n/a	n/a	n/a	Well-graded gravel with sand (GW)

94% Retained on #40 Sieve

Dry Strength: LOW

Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	bag	Tested By:	cam
Sample ID:	GEO-7B (28-28.5) (Bag)	Test Date:	09/16/15	Checked By:	emm
Depth :	---	Test Id:	345992		
Test Comment:	---				
Visual Description:	Moist, olive gray gravel with sand				
Sample Comment:	---				

Atterberg Limits - ASTM D4318

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	GEO-7B (28-28.5) (Bag)	---	---	3	n/a	n/a	n/a	n/a	Poorly graded gravel with sand (GP)

91% Retained on #40 Sieve

Dry Strength: LOW

Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	tube	Tested By:	cam
Sample ID:	GEO-15B (13-15) (Tube)	Test Date:	10/13/15	Checked By:	emm
Depth :	---	Test Id:	345959		
Test Comment:	---				
Visual Description:	Moist, brown sand with silt and gravel				
Sample Comment:	---				

Atterberg Limits - ASTM D4318

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	GEO-15B (13-15) (Tube)	---	---	12	n/a	n/a	n/a	n/a	Well-graded sand with silt and gravel (SW-SM)

84% Retained on #40 Sieve

Dry Strength: MEDIUM

Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	bag	Tested By:	cam
Sample ID:	GEO-15B (19-21) (Bag)	Test Date:	09/16/15	Checked By:	emm
Depth :	---	Test Id:	345996		
Test Comment:	---				
Visual Description:	Wet, dark grayish brown sand with gravel				
Sample Comment:	---				

Atterberg Limits - ASTM D4318

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	GEO-15B (19-21) (Bag)	---	---	12	n/a	n/a	n/a	n/a	Well-graded sand with gravel (SW)

85% Retained on #40 Sieve

Dry Strength: LOW

Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	bag	Tested By:	cam
Sample ID:	GEO-15B (25-28.5) (Bag)	Test Date:	09/16/15	Checked By:	emm
Depth :	---	Test Id:	346000		
Test Comment:	---				
Visual Description:	Moist, light yellowish brown gravel with silt and sand				
Sample Comment:	---				

Atterberg Limits - ASTM D4318

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	GEO-15B (25-28.5) (Bag)	---	---	10	n/a	n/a	n/a	n/a	Poorly graded gravel with silt and sand (GP-GM)

74% Retained on #40 Sieve

Dry Strength: LOW

Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	tube	Tested By:	cam
Sample ID:	GEO-17B (14-16) (Tube)	Test Date:	09/16/15	Checked By:	emm
Depth :	---	Test Id:	345954		
Test Comment:	---				
Visual Description:	Moist, very dark gray sand with silt				
Sample Comment:	---				

Atterberg Limits - ASTM D4318

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	GEO-17B (14-16) (Tube)	---	---	15	n/a	n/a	n/a	n/a	Well-graded sand with silt (SW-SM)

73% Retained on #40 Sieve

Dry Strength: LOW

Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	tube	Tested By:	cam
Sample ID:	GEO-17B (20-22) (Tube)	Test Date:	10/16/15	Checked By:	emm
Depth :	---	Test Id:	345955		
Test Comment:	---				
Visual Description:	Moist, brown silty sand				
Sample Comment:	---				

Atterberg Limits - ASTM D4318

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	GEO-17B (20-22) (Tube)	---	---	10	n/a	n/a	n/a	n/a	Silty sand (SM)

49% Retained on #40 Sieve

Dry Strength: MEDIUM

Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Alpha Analytical				
Project:	L1520960				
Location:	---			Project No:	GTX-303663
Boring ID:	---	Sample Type:	bag	Tested By:	cam
Sample ID:	GEO-17B (30-32) (Bag)	Test Date:	09/16/15	Checked By:	emm
Depth :	---	Test Id:	345980		
Test Comment:	---				
Visual Description:	Moist, brown silty sand with gravel				
Sample Comment:	---				

Atterberg Limits - ASTM D4318

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	GEO-17B (30-32) (Bag)	---	---	9	n/a	n/a	n/a	n/a	Silty sand with gravel (SM)

60% Retained on #40 Sieve

Dry Strength: LOW

Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Appendix C

Geotechnical Usability Discussion

AECOM

Memorandum

To	Aerovox File (PN #60422003)	Page	1
CC	M. Wade		
Subject	REDUA of Bulk Density Measurements for Aerovox Soils		
From	Judith M. LeClair		
Date	January 14, 2015		

In August 2015, Jeff Harshman of AECOM mobilized to the site with Geosearch Environmental Contractors for the purpose of collecting samples for geotechnical testing. The purpose of the geotechnical sample collection was twofold: (1) to obtain soil bulk density values for site-specific soils for use in place of or in addition to literature values when calculating or modelling potential dense non-aqueous phase liquid (DNAPL) source zones, and (2) to obtain parameters necessary for the design of a barrier wall (regardless of the type). The geotechnical parameters collected for eventual barrier wall design included moisture content, specific gravity, grain size analysis and ASTM soil classification, and Atterburg Limits and Unconfined Unconsolidated strength testing for soils determined to be fine-grained. This memorandum specifically discusses the representativeness and usability of the bulk density measurements.

Soil samples collected for bulk density by American Society for Testing and Materials (ASTM) method D7263 requires the use of undisturbed soil samples. Collection of undisturbed soil samples is generally completed with a piston sampler or drilling rig equipped with Shelby tube sampling equipment. Since field characterization of soil samples and (limited) laboratory grain size analyses completed prior to the August 2015 drilling mobilization have indicated that site soils are variable sands, with minor amounts of silt, it was unknown if any undisturbed soil samples could be collected. AECOM Principal Engineer Gary M. Garfield was consulted relative to collection of the samples. It was decided that a Shelby tube would be deployed at each of the specific soil horizons that were identified prior to field mobilization. If a Shelby tube sample was retrieved, the Shelby tube was properly sealed and submitted to the laboratory for bulk density testing. If Shelby tube sampling was unsuccessful at collection of an undisturbed soil sample, a 3-inch outside diameter (1.5 inch inside diameter) split spoon was used to collect soil from the subsequent depth interval, and the split spoon was carefully opened with minimal disturbance. A specific (measured) length of the soil core was placed into a laboratory jar and sealed, with care to leave only a trace of soil from the depth interval in the split spoon. The laboratory was instructed to collect wet weight, dry weight, and container (tare) weight.

A total of six Shelby tube soil samples (GEO-2B 10-12, GEO-2B 18-20, GEO-7B 14-16, GEO-15B 13-15, GEO 17B 14-16, EO-17B 20-22) were collected from the site and analyzed by method ASTM D7263. Six additional samples were collected utilizing the split spoon

approach (GEO-2B 28-30, GEO-7B 22-24, GEO-7B 28-28.5, GEO-15B 19-21, GEO-15B 25-27, and GEO-17B 30-32). The analytical results for the laboratory-derived and the “field” derived (split spoon method) are attached. The Shelby tube analytical results are within the range of expected literature values. The values for the “field” estimated bulk density show considerable variation and some fall outside the values found in the literature. As these values are highly dependent upon soil type, collecting the entire mass of sample within the calculated volume (soil particles and water within pore spaces) is critical. Accurate collection of the entire mass within the spoon proved difficult to do under field conditions, resulting in underrepresentation of the soil mass when compared to undisturbed samples. As a result, these split spoon derived samplevalues should not be considered representative of true field conditions and those data should not be used for the purpose of site specific calculations. Therefore, only the following six geotech samples are considered representative of site-specific conditions and the geotechnical laboratory analytical data is considered usable for its intended purpose:

- GEO-2B 10-12
- GEO-2B 18-20
- GEO-7B 14-16
- GEO-15B 13-15
- GEO 17B 14-16
- GEO-17B 20-22

Attachment

Bulk Density by ASTM D7263
Aerovox Facility
740 Belleville Avenue, New Bedford, Massachusetts
RTN 4-0601

Sample ID (depth interval)	ASTM Description	Wet Bulk Density (lb/ft^3)	Moisture Content (%)	Dry Bulk Density (lb/ft^3)
GEO-2B (10-12)	Moist, olive silty gravel with sand	136.0	12.61	120.8
GEO-2B (18-20)	Moist, gray silt with sand	124.3	22.40	101.6
GEO-7V (14-16)	Moist, gray silt	128.8	24.89	103.2
GEO-15B (13-15)	Moist, brown sand with silt and gravel	125.8	11.78	112.5
GEO-17B (14-16)	Moist, very dark gray sand with silt	139.0	14.78	121.1
GEO-17B (20-22)	Moist, brown silty sand	119.5	10.42	108.2

Appendix D

MW-36B Boring Log

Project: Former Aerovox Facility
Project Location: New Bedford, Massachusetts
Project Number: 39744051

URS Corporation
Log of Boring MW-36B
Sheet 1 of 4

Date(s) Drilled and Installed	**11/16/15 - 11/19/15**	Water Surface Elevation	**NA**	Well Casing or Riser	**4-in permanent steel casing 0-49 ft bgs**
Logged By (URS)	**J. Harshman**	Surface Elevation	**NA**	Screen	**Open bedrock hole 49-74 ft bgs**
Drilling Contractor	**Geosearch**	Datum		Checked By	
Total Depth of Borehole	**74.0 ft**	Easting	Northing	Notes: Vac/Air-knife pre-clear 0 to 10 ft bgs	
Groundwater Level	**8.5 ft bgs**	Annular Fill: Open bedrock borehole 49-74 ft bgs, exterior of permanent casing grouted 1-49 ft bgs		Location: Located on the Coyne property adjacent to Precix	
Diameter of Borehole	**8.5 in**			Sampler Type: 2-ft Split Spoon	
Drilling Method	**Drive & Wash/ Casing/ Roller Bit/ Air Rotary w/ Air Hammer**			Hammer Data:	
				Well Type: Flush-mount open bedrock well	

Depth, feet	Sample Number	Sample Type	Recovery (in)	Blow Count per 6 in	Core RQD (%)	PID (ppm)	Headspace PID (ppm)	Graphic Log	Lithology USCS Code	MATERIAL DESCRIPTION	Well Construction	REMARKS
0										CONCRETE(0-0.5') Concrete at surface		Cemented flushmount road box 0 to 1 ft bgs
1									SW	(0.5-1') Fine to medium SAND, with little coarse sand and fine to medium gravel (loose to med. dense) (dry)		
									SW	No Impact Observed		
2									SP	(1-2') Dark brown fine to coarse SAND, some fine to coarse gravel (med. dense) (dry)		
										No Impact Observed		
3									SP	(2-3') Orange brown fine to medium poorly graded SAND, trace fine gravel (loose) (dry)		
										No Impact Observed		
4									SP	(3-4') Light brown fine to medium poorly graded SAND (loose) (dry)		
5									SP	No Impact Observed		
										(4-5') Light brown fine to medium poorly-graded SAND, trace coarse sand (loose) (dry)		
6										No Impact Observed		
7										(5-8') Light brown very fine to fine poorly-graded SAND, trace silt (loose) (dry)		
8									SP	No Impact Observed	▽	
										(8-10) Brown to yellowish brown fine to medium SAND, trace coarse sand and fine gravel (loose) (wet at 8.5 ft bgs)		
9										No Impact Observed		
10			17	1-2-5-3			0		SW	(10-12') Brown to light brown fine to coarse well-graded SAND , little fine gravel (loose) (wet)		4-in Permanent Steel Casing 1 to 49 ft bgs
11										No Impact Observed		
12			24	5-7-9-5			0		SW	(12-14') Brown to light brown fine to coarse SAND, with very coarse sand and fine gravel (loose) (wet)		
13										No Impact Observed		
14			12	8-6-9-11			0		SW	(14-16') Yellowish brown to gray fine to coarse well-graded SAND, some fine gravel (med. dense) (wet)		
15										No Impact Observed		
16			22	5-6-11-14			0		SW	(16-18') Brown to gray very fine to fine well-graded SAND, intervals of very coarse sand and fine gravel (med. dense) (wet)		
17										No Impact Observed		
18			14	8-9-7-7			0		SWG	(18-22') Gray fine to coarse well-graded SAND and GRAVEL, trace silt (med. dense) (wet)		
19										No Impact Observed		
20												

Report: AVX FINAL LOGS WITH WELL; File: AVX BORING LOGS.GPJ; 12/22/2015 MW-36B

URS

Project: Former Aerovox Facility
Project Location: New Bedford, Massachusetts
Project Number: 39744051

URS Corporation
Log of Boring MW-36B
Sheet 2 of 4

Depth, feet	Sample Number	Sample Type	Recovery (in)	Blow Count per 6 in	Core RQD (%)	PID (ppm)	Headspace PID (ppm)	Graphic Log	Lithology USCS Code	MATERIAL DESCRIPTION	Well Construction	REMARKS
20			9	5-7-5-9			0					
22			16	6-6-6-12			0		SWG	(22-24') Gray fine to very coarse SAND and GRAVEL, trace very fine sand and silt (med. dense) (wet) No Impact Observed		Grout backfill 1 to 49 ft bgs
24			8	8-12-12-5			0		SWG	(24-28') Gray fine to medium well-graded SAND and fine to coarse GRAVEL, trace silt (med. dense-dense) (wet) No Impact Observed		
26			8	4-4-10-5			0					
28			8	45-25-21-13			0		SW	(28-30') Gray fine to medium well-graded SAND, little coarse sand and fine to medium gravel (dense) (wet) No Impact Observed		
30			10	11-13-13-14			0		SW	(30-32') Gray fine to medium well-graded SAND, some fine to coarse gravel and little coarse sand (med. dense) (wet) No Impact Observed		
32			8	130-45-22-20			0		SW	(32-34') Gray fine to coarse well-graded fine to coarse SAND and GRAVEL (dense) (wet) No Impact Observed		
34			9	120-28-26-25			0		SWG	(34-38') Gray fine to coarse well-graded SAND and GRAVEL, trace silt (dense) (wet) No Impact Observed		
36			11	24-22-25-12			0					
38			13	60-44-36-38			0		TILL	(38-40.5') Brown to olive brown [GLACIAL TILL], with fine to medium sand and gravel (very dense) (wet) No Impact Observed		
40			5	35-150/1			0		BR	BEDROCK encountered at 40.5 ft bgs Air Hammer into Bedrock from 40.5 to 74 ft bgs No Sampling of Bedrock		
46												

Report: AVX FINAL LOGS WITH WELL; File: AVX BORING LOGS.GPJ; 12/22/2015 MW-36B

URS

Project: Former Aerovox Facility
Project Location: New Bedford, Massachusetts
Project Number: 39744051

URS Corporation
Log of Boring MW-36B
Sheet 3 of 4

Depth, feet	SAMPLES: Sample Number	Sample Type	Recovery (in)	Blow Count per 6 in	Core RQD (%)	PID (ppm)	Headspace PID (ppm)	Graphic Log	Lithology USCS Code	MATERIAL DESCRIPTION	Well Construction	REMARKS
47												
48												
49												
50										No Sampling of Bedrock		Open Borehole 49 to 74 ft bgs via air hammer
51												
52												
53												
54												
55												
56												
57												
58												
59												
60										No Sampling of Bedrock		
61												
62												
63												
64												
65												
66												
67												
68												
69												
70												
71												
72												
73												

URS

Project: Former Aerovox Facility
Project Location: New Bedford, Massachusetts
Project Number: 39744051

URS Corporation
Log of Boring MW-36B
Sheet 4 of 4

Depth, feet	SAMPLES: Sample Number	Sample Type	Recovery (in)	Blow Count per 6 in	Core RQD (%)	PID (ppm)	Headspace PID (ppm)	Graphic Log	Lithology USCS Code	MATERIAL DESCRIPTION	Well Construction	REMARKS
74										Bottom of Exploration at 74 ft bgs		

Report: AVX FINAL LOGS WITH WELL; File: AVX BORING LOGS.GPJ; 12/22/2015 MW-36B

URS

Appendix E

Analytical Report for MW-36B Groundwater Sampling

ANALYTICAL REPORT

Lab Number:	L1533411
Client:	AECOM 1155 Elm Street Manchester, NH 03101
ATTN:	Judith LeClair
Phone:	(603) 893-0616
Project Name:	AEROVOX-MW36B
Project Number:	60422003
Report Date:	12/24/15

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: AEROVOX-MW36B
Project Number: 60422003

Lab Number: L1533411
Report Date: 12/24/15

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1533411-01	TRIP BLANK	WATER	NEW BEDFORD, MA	12/17/15 00:00	12/17/15
L1533411-02	AX-GW-MW36B-121715	WATER	NEW BEDFORD, MA	12/17/15 10:05	12/17/15

Project Name: AEROVOX-MW36B **Lab Number:** L1533411

Project Number: 60422003 **Report Date:** 12/24/15

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A through F is required for "Presumptive Certainty" status		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

Please note that sample matrix information is located in the Sample Results section of this report.

Project Name: AEROVOX-MW36B **Lab Number:** L1533411
Project Number: 60422003 **Report Date:** 12/24/15

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	AEROVOX-MW36B	**Lab Number:**	L1533411
Project Number:	60422003	**Report Date:**	12/24/15

Case Narrative (continued)

MCP Related Narratives

Volatile Organics

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 12/24/15

ORGANICS

VOLATILES

Project Name: AEROVOX-MW36B **Lab Number:** L1533411

Project Number: 60422003 **Report Date:** 12/24/15

SAMPLE RESULTS

Lab ID: L1533411-01
Client ID: TRIP BLANK
Sample Location: NEW BEDFORD, MA
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 12/24/15 04:46
Analyst: MM

Date Collected: 12/17/15 00:00
Date Received: 12/17/15
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Tetrachloroethene	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	110		70-130

Project Name: AEROVOX-MW36B **Lab Number:** L1533411

Project Number: 60422003 **Report Date:** 12/24/15

SAMPLE RESULTS

Lab ID: L1533411-02
Client ID: AX-GW-MW36B-121715
Sample Location: NEW BEDFORD, MA
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 12/24/15 05:18
Analyst: MM

Date Collected: 12/17/15 10:05
Date Received: 12/17/15
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Tetrachloroethene	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	100		ug/l	1.0	--	1
cis-1,2-Dichloroethene	30		ug/l	1.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	110		70-130

Project Name: AEROVOX-MW36B
Project Number: 60422003
Lab Number: L1533411
Report Date: 12/24/15

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 12/24/15 04:15
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-02 Batch: WG852779-3					
Tetrachloroethene	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	108		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: AEROVOX-MW36B

Project Number: 60422003

Lab Number: L1533411

Report Date: 12/24/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02 Batch: WG852779-1 WG852779-2								
Methylene chloride	102		97		70-130	5		20
1,1-Dichloroethane	109		103		70-130	6		20
Chloroform	103		99		70-130	4		20
Carbon tetrachloride	75		80		70-130	6		20
1,2-Dichloropropane	99		94		70-130	5		20
Dibromochloromethane	72		73		70-130	1		20
1,1,2-Trichloroethane	95		89		70-130	7		20
Tetrachloroethene	100		96		70-130	4		20
Chlorobenzene	97		92		70-130	5		20
Trichlorofluoromethane	112		107		70-130	5		20
1,2-Dichloroethane	107		101		70-130	6		20
1,1,1-Trichloroethane	101		102		70-130	1		20
Bromodichloromethane	92		92		70-130	0		20
trans-1,3-Dichloropropene	**61**	Q	**63**	Q	70-130	3		20
cis-1,3-Dichloropropene	77		77		70-130	0		20
1,1-Dichloropropene	107		101		70-130	6		20
Bromoform	**65**	Q	**69**	Q	70-130	6		20
1,1,2,2-Tetrachloroethane	90		85		70-130	6		20
Benzene	103		98		70-130	5		20
Toluene	102		96		70-130	6		20
Ethylbenzene	103		98		70-130	5		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: AEROVOX-MW36B

Project Number: 60422003

Lab Number: L1533411

Report Date: 12/24/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02 Batch: WG852779-1 WG852779-2								
Chloromethane	98		91		70-130	7		20
Bromomethane	76		85		70-130	11		20
Vinyl chloride	112		106		70-130	6		20
Chloroethane	113		113		70-130	0		20
1,1-Dichloroethene	106		104		70-130	2		20
trans-1,2-Dichloroethene	103		97		70-130	6		20
Trichloroethene	103		100		70-130	3		20
1,2-Dichlorobenzene	93		88		70-130	6		20
1,3-Dichlorobenzene	94		89		70-130	5		20
1,4-Dichlorobenzene	93		89		70-130	4		20
Methyl tert butyl ether	113		108		70-130	5		20
p/m-Xylene	104		100		70-130	4		20
o-Xylene	101		97		70-130	4		20
cis-1,2-Dichloroethene	99		95		70-130	4		20
Dibromomethane	107		103		70-130	4		20
1,2,3-Trichloropropane	93		89		70-130	4		20
Styrene	99		95		70-130	4		20
Dichlorodifluoromethane	114		108		70-130	5		20
Acetone	109		106		70-130	3		20
Carbon disulfide	114		107		70-130	6		20
2-Butanone	113		107		70-130	5		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: AEROVOX-MW36B

Project Number: 60422003

Lab Number: L1533411

Report Date: 12/24/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02 Batch: WG852779-1 WG852779-2								
4-Methyl-2-pentanone	96		93		70-130	3		20
2-Hexanone	106		101		70-130	5		20
Bromochloromethane	97		96		70-130	1		20
Tetrahydrofuran	109		100		70-130	9		20
2,2-Dichloropropane	89		93		70-130	4		20
1,2-Dibromoethane	122		113		70-130	8		20
1,3-Dichloropropane	99		94		70-130	5		20
1,1,1,2-Tetrachloroethane	73		73		70-130	0		20
Bromobenzene	90		87		70-130	3		20
n-Butylbenzene	101		94		70-130	7		20
sec-Butylbenzene	101		95		70-130	6		20
tert-Butylbenzene	102		97		70-130	5		20
o-Chlorotoluene	100		94		70-130	6		20
p-Chlorotoluene	98		93		70-130	5		20
1,2-Dibromo-3-chloropropane	82		85		70-130	4		20
Hexachlorobutadiene	82		77		70-130	6		20
Isopropylbenzene	102		98		70-130	4		20
p-Isopropyltoluene	100		94		70-130	6		20
Naphthalene	97		93		70-130	4		20
n-Propylbenzene	104		98		70-130	6		20
1,2,3-Trichlorobenzene	92		89		70-130	3		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: AEROVOX-MW36B

Project Number: 60422003

Lab Number: L1533411

Report Date: 12/24/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02 Batch: WG852779-1 WG852779-2								
1,2,4-Trichlorobenzene	91		87		70-130	4		20
1,3,5-Trimethylbenzene	99		93		70-130	6		20
1,2,4-Trimethylbenzene	99		93		70-130	6		20
Ethyl ether	97		93		70-130	4		20
Isopropyl Ether	104		98		70-130	6		20
Ethyl-Tert-Butyl-Ether	107		104		70-130	3		20
Tertiary-Amyl Methyl Ether	101		97		70-130	4		20
1,4-Dioxane	94		105		70-130	11		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	111		110		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	101		100		70-130
Dibromofluoromethane	103		104		70-130

Project Name: AEROVOX-MW36B
Project Number: 60422003

Lab Number: L1533411
Report Date: 12/24/15

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1533411-01A	Vial HCl preserved	A	N/A	3.2	Y	Absent	MCP-8260-CHLR-10(14)
L1533411-01B	Vial HCl preserved	A	N/A	3.2	Y	Absent	MCP-8260-CHLR-10(14)
L1533411-02A	Vial HCl preserved	A	N/A	3.2	Y	Absent	MCP-8260-CHLR-10(14)
L1533411-02B	Vial HCl preserved	A	N/A	3.2	Y	Absent	MCP-8260-CHLR-10(14)
L1533411-02C	Vial HCl preserved	A	N/A	3.2	Y	Absent	MCP-8260-CHLR-10(14)

*Values in parentheses indicate holding time in days

Project Name:	AEROVOX-MW36B	**Lab Number:**	L1533411
Project Number:	60422003	**Report Date:**	12/24/15

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

Report Format: Data Usability Report

Project Name:	AEROVOX-MW36B	**Lab Number:**	L1533411
Project Number:	60422003	**Report Date:**	12/24/15

Data Qualifiers

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: AEROVOX-MW36B
Project Number: 60422003
Lab Number: L1533411
Report Date: 12/24/15

REFERENCES

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 524.2: 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, m/p-xylene, o-xylene
EPA 624: 2-Butanone (MEK), 1,4-Dioxane, tert-Amylmethyl Ether, tert-Butyl Alcohol, m/p-xylene, o-xylene
EPA 625: Aniline, Benzoic Acid, Benzyl Alcohol, 4-Chloroaniline, 3-Methylphenol, 4-Methylphenol.
EPA 1010A: NPW: Ignitability
EPA 6010C: NPW: Strontium; SCM: Strontium
EPA 8151A: NPW: 2,4-DB, Dicamba, Dichloroprop, MCPA, MCPP; SCM: 2,4-DB, Dichloroprop, MCPA, MCPP
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene, Isopropanol; SCM: Iodomethane (methyl iodide), Methyl methacrylate (soil); 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Pentachloronitrobenzene, 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Pentachloronitrobenzene, 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 9010: NPW: Amenable Cyanide Distillation, Total Cyanide Distillation
EPA 9038: NPW: Sulfate
EPA 9050A: NPW: Specific Conductance
EPA 9056: NPW: Chloride, Nitrate, Sulfate
EPA 9065: NPW: Phenols
EPA 9251: NPW: Chloride
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
EPA 8270D: NPW: Biphenyl; SCM: Biphenyl
EPA 2540D: TSS
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water
EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7**: Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

Non-Potable Water
EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;
EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;
EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

Serial_No:12241510:46

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 12/17/15

ALPHA Job #: L1533411

Client Information

Client: AECOM
Address: 1155 Elm St, Suite 401, Manchester, NH 03101
Phone: (603) 606-4818
Email: judy.leclair@aecom.com

Project Information

Project Name: Aerovox - MW36B
Project Location: New Bedford, MA
Project #: 60422003
Project Manager: J. LeClair / M. Wade
ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods
☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program ______ Criteria ______

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Additional Project Information:

VOC list: PCE, TCE, cis-1,2-DCE, trans 1,2-DCE, vinyl chloride ONLY

ANALYSIS: VOC: ☒ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO: Filtration ☐ Field ☐ Lab to do; Preservation ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC 8260	Sample Comments	TOTAL # BOTTLES
33411-01	TRIP BLANK	12/17/15		TB		2		2
-02	AX-GW-MW36B-121715	12/17/15	1005	GW	JRH	3		3

	VOC 8260
Container Type	V
Preservative	B

Container Type: P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H = $Na_2S_2O_3$, I= Ascorbic Acid, J = NH_4Cl, K= Zn Acetate, O= Other

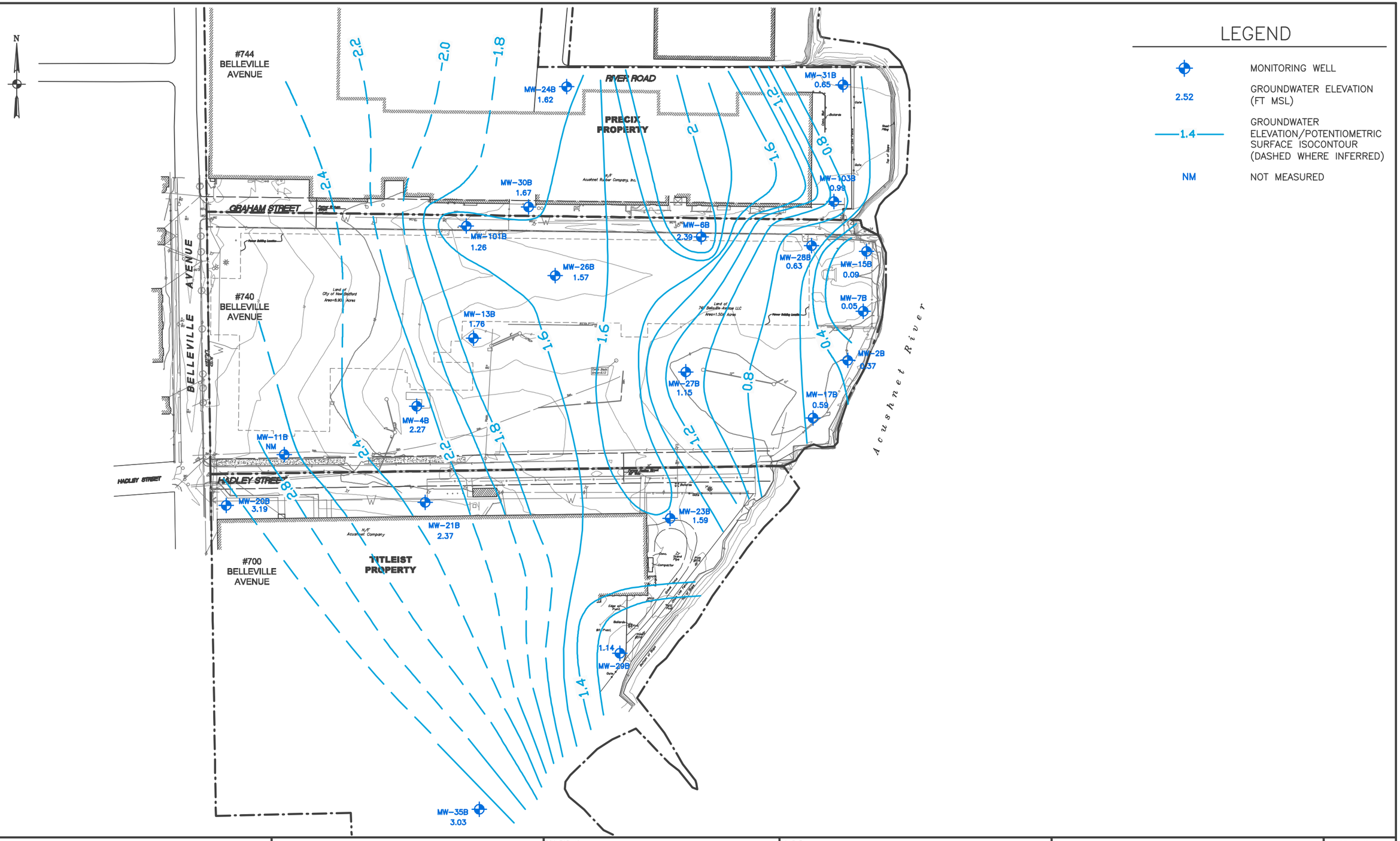
Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	12/17/15 1218	[signature] AAL	12/17/15 1218

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

Appendix F

Bedrock Groundwater Potentiometric Map (December 21, 2015)



LEGEND

⊕	MONITORING WELL
2.52	GROUNDWATER ELEVATION (FT MSL)
1.4	GROUNDWATER ELEVATION/POTENTIOMETRIC SURFACE ISOCONTOUR (DASHED WHERE INFERRED)
NM	NOT MEASURED

AECOM
1155 ELM ST, SUITE 401
MANCHESTER, NH 03101-1508
Tel: 603.606.4800
Fax: 603.606.4801
www.aecom.com

0 150 300
SCALE IN FEET

PROJECT NO:	60422003		
DESIGN:	ARP	SCALE:	AS SHOWN
APPROVED:	MW	DATE:	JAN 2016
DRAWN:	FS	FILE NO:	GW Flow Maps - 12-21-2015

CLIENT: AVX CORPORATION

PROJECT: 740 BELLEVILLE AVENUE NEW BEDFORD, MA

TITLE: GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR MAP BEDROCK DECEMBER 21, 2015 (LOW TIDE)

FIGURE NO.: F-1

Appendix G

Manifests for IDW Shipments

Clean Harbors Grassy Mountain LLC
3 Miles East 7 Miles North of Knolls
Grantsville UT, 84029
UTD991301748
(435) 884-8900

CERTIFICATE OF DISPOSAL

Generator Facility Name:	New Bedford City of	Sales Order#:	1502455462
Generator Address:	133 William Street Room 304	Date Received:	9/18/2015
	New Bedford, MA, 02740		
Generator Contact Name:			

Generator EPA ID:	MAD062319777	Load #:	15008625
		Manifest #:	008044635FLE

Original CH ID #	Date Removed From Service	Unit Type	Serial # / Customer ID	Material Description	Disposal Date	Method of Disposal	Disposal Facility
46634954	8/13/2015	DM	DM-001-4599 /	PCB Solids For Landfill	9/21/2015	Landfill	Grassy Mountain, UT Facility
46634955	8/13/2015	DM	DM-002-4599 /	PCB Solids For Landfill	9/21/2015	Landfill	Grassy Mountain, UT Facility
46634956	8/13/2015	DM	DM-003-4599 /	PCB Solids For Landfill	9/21/2015	Landfill	Grassy Mountain, UT Facility
46634957	8/13/2015	DM	DM-004-4599 /	PCB Solids For Landfill	9/21/2015	Landfill	Grassy Mountain, UT Facility
46634958	8/13/2015	DM	DM-005-4599 /	PCB Solids For Landfill	9/21/2015	Landfill	Grassy Mountain, UT Facility
46634959	8/13/2015	DM	DM-006-4599 /	PCB Solids For Landfill	9/21/2015	Landfill	Grassy Mountain, UT Facility
46634960	8/13/2015	DM	DM-007-4599 /	PCB Solids For Landfill	9/21/2015	Landfill	Grassy Mountain, UT Facility
46634961	8/13/2015	DM	DM-008-4599 /	PCB Solids For Landfill	9/21/2015	Landfill	Grassy Mountain, UT Facility
46634962	8/13/2015	DM	DM-009-4599 /	PCB Solids For Landfill	9/21/2015	Landfill	Grassy Mountain, UT Facility
46634963	8/13/2015	DM	DM-010-4599 /	PCB Solids For Landfill	9/21/2015	Landfill	Grassy Mountain, UT Facility
46634964	8/13/2015	DM	DM-011-4599 /	PCB Solids For Landfill	9/21/2015	Landfill	Grassy Mountain, UT Facility

Under Civil and Criminal Penalties of Law for the making or submission of false or fraudulent statements or representations (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate, and complete.

Shane B. Whitney
Authorized Agent

Thursday, September 24, 2015
Date

Spring Grove Resource Recovery Inc.
4879 Spring Grove Avenue
Cincinnati OH, 45232
OHD000816629
(513) 681-5738

CERTIFICATE OF DISPOSAL

Generator Facility Name:	New Bedford City of	Sales Order#:	1501995867
Generator Address:	133 William Street Room 304	Date Received:	8/19/2015
	New Bedford, MA, 02740		
Generator Contact Name:			

Generator EPA ID: MAD062319777

Load #:

Manifest #: 008044636FLE

Original CH ID #	Date Removed From Service	Unit Type	Serial # / Customer ID	Material Description	Disposal Date	Method of Disposal	Disposal Facility
46635132	8/13/2015	DF	none / 4636-001	PCB Lean Water For Incin	10/3/2015	Incineration	Deer Park, TX Facility

Under Civil and Criminal Penalties of Law for the making or submission of false or fraudulent statements or representations (18 U.S.C. 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true, accurate, and complete.

Authorized Agent

Monday, October 05, 2015
Date

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) RI 1504129991-001 SC PPW 12/4/2015 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
MAD062319777	1	(800) 483-3718	009024514 FLE

GENERATOR

5. Generator's Name and Mailing Address
New Bedford City of
133 William Street Room 304
New Bedford, MA 02740
Generator's Phone: (508) 979-1493

Generator's Site Address (if different than mailing address)
Aerovox Facility 21E/MCP 740 Belleville Avenue
New Bedford, MA 02745

6. Transporter 1 Company Name
Clean Harbors Environmental Service, Inc

U.S. EPA ID Number
MAD039322260

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
Spring Grove Resource Recovery Inc.
4979 Spring Grove Avenue
Cincinnati, OH 45232
Facility's Phone: (513) 681-5738

U.S. EPA ID Number
OHD000816629

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NA3082, HAZARDOUS WASTE, LIQUID, N.O.S., (TRICHLOROETHYLENE), 9, PG III	0001	DF	5	G	D040	MA02	
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1. CH075166 ERG# 171
Out of Service

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Ryan Hilgeger for NJB Corp
Signature:
Month: 12 Day: 21 Year: 15

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Jeffrey P. Craig
Signature:
Month: 12 Day: 21 Year: 15

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H141			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name
Signature
Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

GENERATOR'S INITIAL COPY

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

RI 1804129991-001 SC PPW 12/4/2015

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

GENERATOR

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number: MAD062319777	2. Page 1 of 1	3. Emergency Response Phone: (800) 483-3718	4. Manifest Tracking Number: 009024512 FLE

5. Generator's Name and Mailing Address
New Bedford City of
133 William Street Room 304
New Bedford, MA 02740
Generator's Phone: (508) 979-1603

Generator's Site Address (if different than mailing address)
Aerovox Facility 21E/MCP 740 Belleville Avenue
New Bedford, MA 02745

6. Transporter 1 Company Name	U.S. EPA ID Number
Clean Harbors Environmental Service, Inc.	MAD039322250
7. Transporter 2 Company Name	U.S. EPA ID Number
8. Designated Facility Name and Site Address	U.S. EPA ID Number
Clean Harbors Grassy Mountain LLC 3 Miles East 7 Miles North of Knolls Grantsville, UT 84029 Facility's Phone: (435) 884-8900	UTD991301748

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON DOT REGULATED MATERIAL, (SOIL)	002	DM	800	K	MA02
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.CH769871
Unique ID's – 4512-1
4512-2
OUT OF Service –

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
K. Ribeiro for City of New Bedford	[signature]	12	21	15

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

	Printed/Typed Name	Signature	Month	Day	Year
Transporter 1	Jeffrey P. Craig	[signature]	12	21	15
Transporter 2					

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name	Signature	Month	Day	Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. GENERATOR'S INITIAL COPY

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) RI 1504129991-001 SC PPW 12/4/2015

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	MAD062919777	1	(800) 483-3718	009024510 FLE

5. Generator's Name and Mailing Address
New Bedford City of
133 William Street Room 304
New Bedford, MA 02740
Generator's Phone: (508) 979-1603

Generator's Site Address (if different than mailing address)
Aerovox Facility 21E/MCP 740 Belleville Avenue
New Bedford, MA 02745

6. Transporter 1 Company Name
Clean Harbors Environmental Service, Inc.
U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors of Braintree Inc
1 Hill Avenue
Braintree, MA 02184
Facility's Phone: (781) 380-7100
U.S. EPA ID Number: MAD053452637

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. ~~NON DOT REGULATED MATERIAL, (SOIL)~~					~~MA02~~
	2. NON DOT REGULATED MATERIAL, (WATER AND DRILLING FLUIDS)	006	DM	300	G	MA99
	3.					
	4.					

14. Special Handling Instructions and Additional Information
~~1. [illegible]~~
2. CH763686

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: [illegible handwriting] Signature: [signature] Month 12 Day 21 Year 15

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Jeffrey P Craig Signature: [signature] Month 12 Day 21 Year 15
Transporter 2 Printed/Typed Name: Signature: Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H141	H141		

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name Signature Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

GENERATOR'S INITIAL COPY

RI 1502828395-001 SC PPW 8/12/2015 Truck #5181

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
MAD062319777	3	(800) 483-3718	008044704 FLE

GENERATOR

5. Generator's Name and Mailing Address
New Bedford City of
133 William Street Room 304
New Bedford, MA 02740
(508) 979-1603
Generator's Phone:

Generator's Site Address (if different than mailing address)
Aerovox Facility 21E/MCP 740 Belleville Avenue
New Bedford, MA 02745

6. Transporter 1 Company Name: Clean Harbors Environmental Service, Inc.
U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: Safety Kleen
U.S. EPA ID Number: TXR 000081205

8. Designated Facility Name and Site Address
Clean Harbors Grassy Mountain LLC
3 Miles East 7 Miles North of Knolls
Grantsville, UT 84029
Facility's Phone: (435) 884-8900
U.S. EPA ID Number: UTD991301748

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON DOT REGULATED MATERIAL, (SOIL)	007	DM	1,750	K	MA02
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. CH763671
7X55
Unique ID #
Refer to attached TSCA form. out of service Date - 09-09-15

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Kay Halberger for the City of New Bedford
Signature:
Month: 9 Day: 9 Year: 15

INT'L

16. International Shipments ☒ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Gregory Luna
Signature:
Month: 09 Day: 09 Year: 15

Transporter 2 Printed/Typed Name: Dave Carlile
Signature:
Month: 9 Day: 9 Year: 2015

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			2015004492

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Matt Hamilton
Signature:
Month: 10 Day: 8 Year: 15

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: MAD062959777

22. Page: 2/3

23. Manifest Tracking Number: 007045704FLE

24. Generator's Name: New Bedford City of

25. Transporter 3 Company Name: Clean Harbors Environmental Services — U.S. EPA ID Number: MAD039322250

26. Transporter 4 Company Name: CleanHarborsEnvSvcsInc — U.S. EPA ID Number: MAD039322250

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes
	TPO					

32. Special Handling Instructions and Additional Information

GENERATOR

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials

Printed/Typed Name: [illegible] Signature: [illegible] Month 9 Day 23 Year 15

34. Transporter 4 Acknowledgment of Receipt of Materials

Printed/Typed Name: Jessica Eggli Signature: Jessica Eggli Month 9 Day 24 Year 15

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO GENERATOR

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: MAD062319777

22. Page: 3

23. Manifest Tracking Number: 008044704 FLE

24. Generator's Name: Newbedford City of.

25. Transporter 5 Company Name: SLT — U.S. EPA ID Number: AZR000518770

26. Transporter 6 Company Name: Clean Harbors Env. Svc. Inc. — U.S. EPA ID Number: MAD039322210

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		
	T P O							

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 5 Acknowledgment of Receipt of Materials

Printed/Typed Name: DAVID M CARNEY — Signature: [signature] — Month: 10 Day: 01 Year: 15

34. Transporter 6 Acknowledgment of Receipt of Materials

Printed/Typed Name: [illegible] — Signature: [signature] — Month: 10 Day: 2 Year: 15

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

TW-CH # 5181

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) RI 1502455462-002 SC PPW 7/4/2015 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	MAD062319777	3 2	(800) 483-3718	008044635 FLE

GENERATOR

5. Generator's Name and Mailing Address
New Bedford City of
133 William Street Room 304
New Bedford, MA 02740
Generator's Phone: (508) 979-1603

Generator's Site Address (if different than mailing address)
Aerovox Facility 21E/MCP 740 Belleville Avenue
New Bedford, MA 02745

6. Transporter 1 Company Name: Clean Harbors Environmental Services Inc — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: Safety Kleen — U.S. EPA ID Number: TXR000081205

8. Designated Facility Name and Site Address
Clean Harbors Grassy Mountain LLC
3 Miles East 7 Miles North of Knolls
Grantsville, UT 84029
Facility's Phone: (435) 884-8900
U.S. EPA ID Number: UTD991301748

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. NON DOT REGULATED MATERIAL, (SOIL)	011	DM	1,515	K	MA02		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1. CH763671
11 X 55
See attached TSCA Form End of service date. 8-13-15

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: CITY OF NEW BEDFORD - WAYNE PERRY (AGENT) — Signature: City of New Bedford Wayne Perry - AGENT — Month: 08 Day: 13 Year: 15

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Gregor Luna — Signature: [signature] — Month: 08 Day: 13 Year: 15
Transporter 2 Printed/Typed Name: Dave Carlile — Signature: [signature] — Month: 8 Day: 14 Year: 15

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			2015008625

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Wendy Riddle — Signature: Wendy Riddle — Month: 09 Day: 17 Year: 15

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO GENERATOR

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number: MAD062397770

22. Page: 2 of 3

23. Manifest Tracking Number: 001804163 FLE

24. Generator's Name: New Bedford City of

25. Transporter 5 Company Name: Clean Harbors Env — U.S. EPA ID Number: MAD039322250

26. Transporter 6 Company Name: SLT — U.S. EPA ID Number: AZD005137770

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		
		20						

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials
Printed/Typed Name: Troy Hill — Signature: [signature] — Month: 8 — Day: 22 — Year: 15

34. Transporter 4 Acknowledgment of Receipt of Materials
Printed/Typed Name: Marvin McCoy — Signature: [signature] — Month: 8 — Day: 25 — Year: 15

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number	22. Page	23. Manifest Tracking Number
MAD062319777	3	008044635FLE

24. Generator's Name: New Bedford City of

25. Transporter 2 Company Name: Clean Harbors Environmental Services — U.S. EPA ID Number: MAD039322250

26. Transporter _____ Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		
	TPO							

GENERATOR

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 2 Acknowledgment of Receipt of Materials
Printed/Typed Name: Cathy Soffel — Signature: [signature] — Month: 9 Day: 8 Year: 15

34. Transporter _____ Acknowledgment of Receipt of Materials
Printed/Typed Name — Signature — Month: Day: Year:

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

Appendix H

Cap Repair Summary Memo and Photolog

AECOM
Address Line 1
Address Line 2
Address Line 3
www.aecom.com

000 000 0000 tel
000 000 0000 fax

Memorandum

To	Marilyn Wade	Page	1
CC	Judith LeClair		
Subject	Aerovox Cap Repairs – August 2015		
From	Jeff Harshman		
Date	January 29, 2016		

Between August 10-13, 2015, Clean Harbors Environmental Services (CHES) performed and completed various maintenance and repair activities associated with the Aerovox cap. These cap repairs were necessitated as a result of the June 5, 2015 annual cap and containment barrier inspection conducted by AECOM as required by the Monitoring and Maintenance (MM) Plan. The June 5, 2015 inspection identified numerous cracks within the HAC cap (waterfront area and along the northern portion of the Site) which required filling/sealing. In addition, approximately eight (8) small areas of asphalt degradation were identified which would require removal and replacement. These small areas, each <5 square feet, were located in the vicinity of MW-17D/MW-17B (3 areas), between the southern drainage ditch and the low point in the HAC cap east of the former building (3 areas); adjacent to the north section of the sheet pile wall (1 area); and,along the northern perimeter fence (1 area). Cracks and pavement deterioration in these eight areas would not be sufficiently addressed through sealing alone, and pavement replacement was required. Lastly, seasonal growth of weeds protruding through the cap would require removal as part of the annual maintenance to preserve the structural integrity of the cap.

On August 10, 2015, CHES personnel began the cap maintenance activities by initiating weed removal from the cap. In general, weeds which were observed protruding through the cap were removed by hand and placed into 55-gallon drums for off-site disposal. A majority of the weed growth occurs in existing cracks within the cap which allows the weeds to become established and protrude above the cap surface. Removal of the root systems was also conduct, where possible, to potentially eliminate re-growth. Weed removal was preceded by an application of glysophate on June 16, 2015 by a licensed applicator.

On August 11, 2015, CHES personal initiated sawcutting of the eight asphalt areas requiring removal and replacement. Using a circular asphalt saw, the edges of the degraded asphalt were scored in preparation for removal. However, due to a heavy rain event which occurred on this day, the degraded asphalt was not removed to avoid rain water from entering an open excavation. CHES also completed removal of the weed growth from the cap.

On August 12, 2015, the weather was appropriate to begin removal of the degraded asphalt. Using a jackhammer, the degraded asphalt was removed and placed into 55-gallon drums for off-site disposal. Hot top asphalt was delivered to the Site where it was placed and compacted into the eight identified areas. CHES personnel also initiated filling and sealing of cracks using commercial-grade filling material.

AECOM

On August 13, 2015, all crack filling activities were completed by CHES personnel, completing the 2015 cap repair and maintenance activities. 10 drums of IDW (i.e., weeds, degraded asphalt, PPE) were generated during the cap repair activities. These drums were later removed from the Site during a scheduled pickup by CHES. The attached photographic log provides additional documentation of the 2015 cap repair activities.

Attachment

URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AVX Corporation	Former Aerovox Property, New Bedford, MA	60422003

Photo No.	Date:
1	Aug. 2015

Direction Photo Taken:

East

Description:

Asphalt repair southeast corner of Site; near MW-17D/17B.

Photo No.	Date:
2	Aug. 2015

Direction Photo Taken:

North

Description:

Crack sealing of southeast portion of HAC cap.

URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AVX Corporation	Former Aerovox Property, New Bedford, MA	60422003

Photo No.	Date:
3	Aug. 2015

Direction Photo Taken:

East

Description:

Crack sealing southeast portion of HAC cap.

Photo No.	Date:
4	Aug. 2015

Direction Photo Taken:

North

Description:

Crack filling along waterfront area.

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AVX Corporation	Former Aerovox Property, New Bedford, MA	60422003

Photo No.	Date:
5	Aug. 2015

Direction Photo Taken:

North

Description:

Crack sealing of waterfront area.

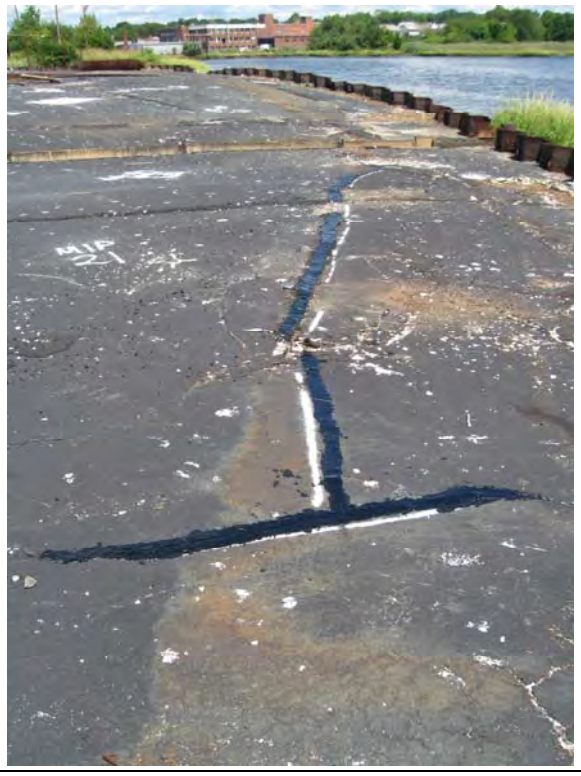
Photo No.	Date:
6	Aug. 2015

Direction Photo Taken:

North

Description:

Crack sealing of waterfront area.



PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AVX Corporation	Former Aerovox Property, New Bedford, MA	60422003

Photo No.	Date:
7	Aug. 2015

Direction Photo Taken:

East

Description:

Asphalt repair and crack sealing in waterfront area.

Photo No.	Date:
8	Aug. 2015

Direction Photo Taken:

Northeast

Description:

Asphalt repair and crack sealing in waterfront area.

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AVX Corporation	Former Aerovox Property, New Bedford, MA	60422003

Photo No.	Date:
9	Aug. 2015

Direction Photo Taken:

Description:

Crack sealing

Photo No.	Date:
10	Aug. 2015

Direction Photo Taken:

South

Description:

Overview of waterfront area of the HAC.

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AVX Corporation	Former Aerovox Property, New Bedford, MA	60422003

Photo No.	Date:
11	Aug. 2015

Direction Photo Taken:

North

Description:

Asphalt repair and crack sealing of Northeastern corner of site.

Photo No.	Date:
12	Aug. 2015

Direction Photo Taken:

North

Description:

Crack sealing near MW-4/4A.

URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AVX Corporation	Former Aerovox Property, New Bedford, MA	60422003

Photo No.	Date:
13	Aug. 2015

Direction Photo Taken:

North

Description:

Asphalt repair along north section of sheet pile wall.

Photo No.	Date:
14	Aug. 2015

Direction Photo Taken:

North

Description:

Crack sealing along north section of sheet pile wall.

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AVX Corporation	Former Aerovox Property, New Bedford, MA	60422003

Photo No.	Date:
15	Aug. 2015

Direction Photo Taken:

West

Description:

Crack sealing along northern property line.

Photo No.	Date:
16	Aug. 2015

Direction Photo Taken:

North

Description:

Crack sealing along northern property line.

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AVX Corporation	Former Aerovox Property, New Bedford, MA	60422003

Photo No.	Date:
17	Aug. 2015

Direction Photo Taken:

North

Description:

Crack sealing along northern property line.

Photo No.	Date:
18	Aug. 2015

Direction Photo Taken:

North

Description:

Crack sealing along northern property line.

URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AVX Corporation	Former Aerovox Property, New Bedford, MA	60422003

Photo No.	Date:
19	Aug. 2015

Direction Photo Taken:

North

Description:

Crack sealing along northern property line.

Photo No.	Date:
20	Aug. 2015

Direction Photo Taken:

North

Description:

Crack sealing along northern property line.

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AVX Corporation	Former Aerovox Property, New Bedford, MA	60422003

Photo No.	Date:
21	Aug. 2015

Direction Photo Taken:

North

Description:

Crack sealing along northern property line.

Photo No.	Date:
22	Aug. 2015

Direction Photo Taken:

West

Description:

Crack sealing along northern property line.

URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AVX Corporation	Former Aerovox Property, New Bedford, MA	60422003

Photo No.	Date:
23	Aug. 2015

Direction Photo Taken:

East

Description:

Crack sealing along northern property line.

Photo No.	Date:
24	Aug. 2015

Direction Photo Taken:

North

Description:

Crack sealing along northern property line.