IN SITU INJECTION REPORT

FOR
FORMER DOWCRAFT FACILITY
NYSDEC SITE #907020
FALCONER, CHAUTAUQUA COUNTY, NEW YORK

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MAY 2015

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ACRONYM LIST

C&S	C&S ENGINEERS, INC.
JCC	JAMESTOWN CONTAINER COMPANIES
SITE	FORMER DOWCRAFT FACILITY
TCE	TRICHLOROETHENE
IRM	INTERIM REMEDIAL MEASURES
NYSDEC	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ROD	RECORD OF DECISION
CRA	CONESTOGA-ROVERS & ASSOCIATES
RI	REMEDIAL INVESTIGATION
SCO	SOIL CLEANUP OBJECTIVES
SVOC	SEMI-VOLATILE ORGANIC COMPOUNDS
VOC	VOLATILE ORGANIC COMPOUNDS

1 INTRODUCTION

C&S Engineers, Inc. (C&S) has prepared this In situ Injection Report on behalf of Jamestown Container Companies (JCC) for the former Dowcraft facility.

1.1 Background and Site Description

The Dowcraft Site is located at 65 South Dow Street in Falconer, New York and occupies approximately 2.2 acres of land situated immediately east of South Dow Street and approximately 100 feet south of the Chadakoin River ("Site"). The Jamestown Container manufacturing building is situated between the Site and the Chadakoin River.

The property was first developed in 1890 as a woolen mill until 1939 when it was converted into a factory which manufactured steel partitions used for offices. As part of this manufacturing process, a vapor degreaser was used which included the use of chemicals such as trichloroethene (TCE). This work continued until 1999 when the facility was closed, a portion of the Site was demolished, and the property was sold to JCC.

Figure 1 presents present and historic site features.

The Dowcraft Site was the subject of environmental investigations in the early 1990s, at which time contaminated groundwater was discovered on site. An interim remedial measure (IRM) was subsequently put in place in 1994 which consisted of groundwater extraction and treatment. In 2000, the use of additional groundwater remediation technologies was approved by the NYSDEC which involved in-situ chemical oxidation of TCE through the injection of potassium permanganate into the overburden groundwater. In 2003, a Record of Decision (ROD) was approved that selected the following remedy:

- In-situ groundwater treatment through chemical oxidation, by injection of potassium permanganate dissolved in water, through existing well points into the shallow overburden groundwater table;
- Overburden groundwater monitoring to verify the effectiveness of the treatment;
- Institutional controls to prevent the use of groundwater as a source of potable water; and
- Annual certification to NYSDEC to certify that institutional controls remain in place.

Conestoga-Rovers & Associates (CRA) conducted nine injection treatments between May 2000 and July 2006, totaling 21,500 pounds of potassium permanganate. Previous injection treatments were successful in oxidizing TCE in outer plume area; however, the concentrations of TCE in the source area remain high.

Figure 2 shows the monitoring well network.

1.2 Project Objectives

As stated in the 2003 ROD, the remedial goals selected for this Site are:

- Treat the source area of groundwater contamination by oxidation de-chlorination of the contaminants in place;
- Prevent exposure of human receptors to contaminated groundwater in the sand and gravel unit under Site;
- Prevent or mitigate, to the maximum extent practicable, COC migration via groundwater so that releases from the underlying sand and gravel unit to the Chadakoin River do not exceed applicable standards, criteria and guidance.

This report describes the results of recent injection events completed to reduce concentrations in the source area and subsequent groundwater sampling to evaluate the efficacy of the treatment.

2 ENGINEERING DESIGN CONSIDERATIONS

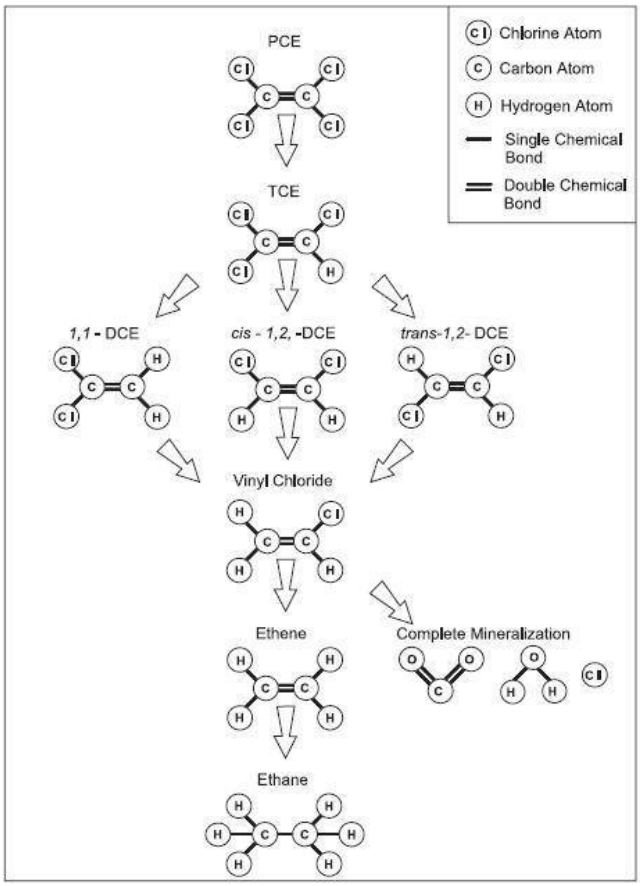
2.1 Contaminants of Concern

Chlorinated solvents, primarily, trichloroethene (TCE) and its daughter compounds, were identified as the contaminants of concern (COC) for this Site. TCE is a man-made volatile organic compound used for degreasing metal and electronic parts. Remedial considerations for TCE include its low solubility value and heavy molecular weight. TCE is in a class of chemicals called dense non-aqueous phase liquids (DNAPL) that sink through the water column until they encounter an impermeable barrier.

Groundwater contaminant plumes with TCE can undergo a process of reductive dechlorination, during which chlorine atoms are stripped from TCE and daughter compounds are produced. The rate of dechlorination can vary based on:

- Amount of TCE in the subsurface;
- Amount of organic material; and
- Type and concentration of electron acceptors available in the system.

The process of TCE reductive dechlorination is shown below:



2.2 Geology and Hydrogeology

Site geology consists of fill material overlying two sand/gravel layers separated by a silt/clay lens. Fill material consists of a mixed matrix of sand, cinders, silt, gavel, brick, concrete, coal, slag and metal. The fill unit ranges in thickness from 2 to over 14 feet with an average thickness of 8 feet.

The upper sand/gravel layer ranges from 10 to 20 feet in thickness. Underlying the upper sand/gravel layer is a silt/clay lens that ranges from 4 to 8 feet in thickness. The lower sand/gravel layer is 10 to 18 feet thick. Underlying the lower sand layer is a second silt/clay layer that starts approximately 43 feet below ground surface (BGS). This unit is estimated to be 60 feet in thickness according to regional geology.

The average depth to groundwater is 10 feet BGS within the upper sand/gravel layer. Groundwater flow within the upper sand/gravel layer is to the north-northeast at approximately 2.7 feet per year. Figure 3 shows the inferred groundwater flow direction in the upper sand/gravel layer. The silt/clay layer overlying the lower sand/gravel layer is acting as an aquitard for deeper groundwater and is creating a semi-confined aquifer.

2.3 Treatment Area

According to previous environmental reports, the area of former degreaser pit (area of groundwater monitoring wells PW-3 and PW-3R) is a likely source area for the COC plume. The plume originates from the degreaser area and has affected groundwater in the upper and lower sand/gravel layers. The plume extends from the degreaser area to the north, under the JCC building and up to the area of the Chadakoin River. This is an area of approximately one acre. The rate of movement is approximately 2 to 3 feet per year to the north. Sampling in the River has not shown any impact to date.

The primary treatment area consists of a portion of the COC plume that has total VOC concentrations ranging between 500 to 2,600 ug/L. The primary treatment area has the highest concentrations of TCE and its daughter compounds. The volume of the treatment area extends from the degreaser pits to the southern façade of the JCC building (approximate area of 5,000 square feet), then vertically down to the base of the second sand/gravel layer (43 feet BGS). A total treatment volume is approximately 8,333 cubic yards.

A secondary treatment area consists of the outer plume. The outer plume extends horizontally from the source area and under the JCC building (approximate area of 20,000 square feet), then vertically down to the base of the second sand/gravel layer (43 feet BGS). Concentrations of contaminants of concern are lower in the outer plume.

Figure 4 shows the primary and secondary treatment areas.

2.4 In situ Chemical Oxidizer (ISCO)

The remedial method for this site is chemical oxidation using potassium permanganate (KMnO4). Permanganate is a common oxidant and has demonstrated significant effectiveness in oxidizing chlorinated solvents such as TCE. By-products from the

reaction include carbon dioxide, manganese dioxide solids, potassium and chloride; these by-products are non-toxic at the levels produced.

Permanganate is more chemically stable and has a slower reaction rate (e.g., on the order of days or weeks) with TCE than other chemical oxidizers. Permanganate has the potential to be the most persistent oxidant within the subsurface and thus can travel with groundwater to reach areas not accessible via surface injection. The equation below describes the chemical oxidation reaction on TCE in the presence of potassium permanganate.

$$2KMnO_4 + CHCl_3 \longrightarrow 2CO_2 + 2MnO_2 + 2K^+ + 2Cl + HCl$$

The volume of liquid potassium permanganate used was calculated based on site specific data and professional experience. Carus Remediation Technologies provided an estimated spreadsheet for calculating volume of liquid potassium permanganate.

Carus Remediation Technologies provided potassium permanganate in two forms. RemOx S is a granulated crystalline that is mixed in water prior to subsurface injection. RemOx S was shipped in 73 55-pound plastic buckets. RemOx SR is potassium permanganate imbedded with paraffin wax and molded in the form of a cylinder that is 1.35 inch diameter and 18 inches long. RemOx SR was shipped to the site in seven corrugated boxes containing 12 RemOx SR cylinders each.

2.5 Injection Borings

A solution of potassium permanganate and water were directly injected into the soil in ten borings in the primary treatment area. A few borings were advanced adjacent to the monitoring wells listed below:

PW - 3R	ESI - 6
ESI - 2	ESI - 7

Injection borings are shown in Figure 4. The table below presents the depths that injection borings were advanced. Because the geology was undefined in these areas, borings were terminated between 30 to 35 feet below ground surface so as to not penetrate the confining layer.

Boring ID	*Depth (Below Ground Surface)*
IB-01	35
IB-02	35
IB-03	35
IB-04	30
IB-05	30
IB-06	30
IB-07	30
IB-08	30
IB-09	30
IB-10	35

Injection borings targeted TCE concentrations within the upper sand/gravel layer. The TCE present in deeper wells within the second sand/gravel layer (PW-3R and PW-2) was treated using a different remedial technology, as discussed in Section 2.6.

As stated in the work plan, a total of 7,740 pounds of potassium permanganate was proposed for each injection event. However, after further review of the subsurface conditions, it was determined that the proposed volume of ISCO solution might cause daylighting of potassium permanganate. The amount of RemOx S was therefore reduced to 4,024.12 pounds.

2.6 Treatment Fence

Within the lower sand/gravel layer, the area adjacent to PW-3R contains the highest concentrations of TCE. To address these concentrations, a treatment fence was installed to reduce source loading into downgradient groundwater zones. The treatment fence consisted of tubes of paraffin wax mixed with potassium permanganate installed in selected monitoring wells and in the subsurface.

These cylinders are a new treatment technology that has been used with success in multiple TCE spills throughout the U.S. and Canada. The cylinders provide a slow release of potassium permanganate over the course of 230 days. The advantages of these cylinders are they can be quickly and easily placed in the ground at a target depth within the plume using a direct-push drilling rig, or can be placed directly in wells.

Ten borings were advanced across a line immediately downgradient of the source area (PW-3R) and spaced four feet apart. This created a treatment “fence line” across the source area to oxidize TCE as it moves with groundwater flow through the rest of the Site.

The cylinders were installed to a maximum depth of approximately 40 feet below grade. Five cylinders were placed in series vertically in each boring: each cylinder is 1.5 feet long to result in a vertical treatment thickness of approximately 7.5 feet in each boring.

2.7 Treatment at Downgradient Boundary

To address reduce the potential for off-site migration of contamination, five cylinders of potassium permanganate were placed in each of the three monitoring wells inside the JCC building and along Chadakoin River (ESI-10, ESI-11, ESI-12) using the same approach as described in Section 2.6.

3 TREATMENT PROGRAM

3.1 Storage of ISCO Chemicals

ISCO products were shipped directly to the Site and stored in conditions in accordance with the manufacturer's specifications. All ISCO product was used for this treatment.

Decontamination of equipment, storage, personal protection, and other related safety concerns was completed in accordance with the Material Safety Data Sheets (MSDS) and vendor recommendations. Oxidant safety materials are presented in Appendix A.

3.2 Mixing of ISCO Chemicals

Nature's Way Environmental Consultants & Contractors, Inc. ("Nature's Way") was contracted to perform the in situ injections. Injections were conducted on December 1 through 9, 2014. RemOx S was mixed in steel, 55-gallon drums. Buckets of ISCO product were carried from JCC Building A to a trailer mounted mixing station. The ISCO solution was pumped from the mixing station to a truck mounted geo-probe and into the subsurface.

ISCO product and water was mixed according to manufacturer's specifications. Injection boring IB-1 received a 3% ISCO solution. After IB-1, the ISCO solution for all other injection borings was increased to 6% to reduce the amount of water being pumped into the subsurface but maintain the injected volume of ISCO.

3.3 ISCO Quantities

The work plan stated that 7,740 pounds of potassium permanganate would be injected into the subsurface. However, after further review of the subsurface conditions, it was determined that the volume of ISCO solution might cause daylighting of potassium permanganate. Based on this evaluation, the amount of RemOx S was reduced to 4,024.12 pounds.

Ten borings were each injected with approximately 33 gallons ISCO solution containing approximately 400 pounds of ISCO material. As ISCO solution was pumped into the subsurface, the drill rods were lifted at a rate designed to inject a consistent amount of materials between 5 and 30 feet below grade.

3.4 Treatment Fence

The treatment fence was shortened from the planned 50 feet to 36 feet due to the proximity of Building A and a water line that is located next to the northwest corner of the building. A total of ten borings were installed. Borings were advanced to 40 feet below grade. A cylinder was dropped down the drill casing and 4 feet of casing was removed allowing the bore hole to collapse and another cylinder was placed in series until a total of 5 cylinders were installed.

Figure 5 presents locations of borings used to place cylinders for the treatment fence.

4 BASELINE GROUNDWATER MONITORING

4.1 Field Sampling Program

Groundwater monitoring was conducted prior to the injections to provide a comparison to post-injection results and the ability to monitor the efficacy of the treatment.

4.1.1 Monitoring Well Array

The site contains a total of 23 monitoring wells installed in November 1990, November 1991, and April 1992. The monitoring wells below have been shown to be directly within the contaminant plume and were used to monitor ISCO effectiveness.

ESI - 1	ESI - 11
ESI - 2	ESI - 12
ESI - 3	ESI - 13R
ESI - 6	PW - 1
ESI - 7	PW - 3R
ESI - 10	

It should be noted that PW-2 is located within the contaminant plume and has been previously sampled by other consultants; however, during groundwater monitoring conducted by C&S on July 2, 2013, PW-2 could not be developed because piping was located in the well that could not be removed. Monitoring well ESI - 6 is located within six feet of PW-2 and was developed and sampled as a substitute for PW-2.

4.1.2 Groundwater Sampling

The groundwater monitoring activities included the collection of depth-to-water measurements at each monitoring well and the collection of groundwater samples for laboratory analysis. Pre-treatment sampling was conducted on October 21, 22 and 29, 2014 and post-treatment sampling was conducted on April 21 through 22, 2015. Groundwater sampling was conducted in accordance with the U.S. Environmental Protection Agency Low flow sample procedure. All equipment used for well purging and sampling was thoroughly washed with tap water and laboratory detergent, Alconox, prior to and after use.

4.1.3 Water Level Monitoring

Prior to purging and sampling each monitoring well was measured with an electronic water level indicator used to measure depth to water and total depth of each well. Measurements were referenced to the top of the well casing. All water levels and total depth measurements were taken to the nearest 0.01 foot.

4.1.4 Well Purging

Water quality parameters were tracked as groundwater was removed from monitoring wells. A ProActive Monsoon pump was used to purge monitoring wells until water quality parameters (temperature, specific conductivity, pH, oxygen reduction potential dissolved oxygen and turbidity) were stabilized. Purge water was transferred into five-gallon buckets. Collected purge water was treated through an activated carbon system prior to discharge on the ground surface.

Because the well casing for ESI-7 was broken underneath the bottom of the road box, a one-inch diameter polyethylene bailer was used to purge and sample ESI-7.

4.1.5 Groundwater Sample Collection and Analysis

Samples were collected from each well immediately after water quality parameters were stabilized. Samples were collected from polyethylene tubing into appropriate sample jars. The sample containers were chemically preserved by the laboratory prior to the field activities. Samples collected for volatile organics analysis were overfilled to form a convex meniscus and, after collection, the sample container was inverted to check for the presence of air bubbles in the sample. All samples were placed in coolers on ice to maintain samples at 4 degree Celsius. A chain–of–custody manifest was completed on-site and accompanied the samples to the lab. Samples were analyzed for:

Parameter	*EPA Method*
Volatile Organic Compounds	8260C
Dissolved Oxygen	360.1
Specific Conductance	120.1
pH	9040C

4.2 Groundwater Results

4.2.1 Laboratory Analysis

Samples were analyzed by TestAmerica on October 24 and 25, 2014 and November 10 and 11, 2014. The following presents observations associated with the samples:

- The lab confirmed that samples were obtained intact
- On ice and cooler temperature was acceptable
- Chain-of-custody was filled out with all pertinent information
- No discrepancy with sample ID and chain-of-custody
- Samples were received within holding times
- VOA sample vials did not have headspace or bubble is < 6mm in diameter
- Sample bottles were completely filled

4.2.2 Groundwater Elevations

Groundwater elevations are provided in Table 1 and shown on Figure 3. These elevations show that groundwater is generally flowing to the north and east.

4.2.3 Groundwater Analytical Results

The pre-treatment analytical results are summarized in Table 2 and on Figure 6. The groundwater results were compared to NYSDEC T.O.G.S 1.1.1 Ambient Water Quality Standards. Ten out of the eleven wells that were sampled contained groundwater that exceeded water quality standard for trichloroethene (5 ug/L). Analytical results for trichloroethene in these wells ranged from 8.9 ug/L to 200 ug/L. Other chlorinated compounds, including TCE daughter compounds (cis-1,2-dichloroethene, trans-1,2-dichloroethane and vinyl chloride) were detected in six of the eleven wells. The highest concentration of vinyl chloride was detected in PW-3R (2,500 ug/L).

5 POST – TREATMENT GROUNDWATER MONITORING

5.1 Groundwater Results

5.1.1 Laboratory Analysis

Samples were analyzed by TestAmerica on April 29 and 30, 2015. The Lab report is number 480-79037-1. The following presents observations associated with the samples:

- The lab confirmed that the samples were obtained intact
- On ice and cooler temperature was acceptable
- Chain-of-custody was filled out with all pertinent information
- No discrepancy with sample ID and chain-of-custody
- Samples were received within holding times
- VOA sample vials did not have headspace or bubble is < 6mm in diameter
- Sample bottles were completely filled

5.1.2 Groundwater Elevations

Groundwater elevations are provided in Table 1 and Figure 7 shows the post-treatment water levels. The inferred groundwater flow directions are similar to those observed prior to injection: flow is to the north and east.

5.1.3 Groundwater Analytical Results

Groundwater results were compared to NYSDEC T.O.G.S 1.1.1 Ambient Water Quality Standards. Nine out of the eleven wells that were sampled exceeded water quality standard for trichloroethene (5 ug/L) and its daughter compounds. Analytical results for trichloroethene ranged from 0.79 ug/L to 810 ug/L. Other chlorinated compounds, including TCE daughter compounds (cis-1,2-dichloroethene, trans-1,2-dichloroethane and vinyl chloride), were detected in five of the eleven wells. Total VOC concentrations are presented on Figure 8.

Additional parameters were monitored, including specific conductance, pH, chloride and dissolved oxygen. Overall, specific conductance and pH levels remained consistent within all the monitoring wells before and after treatment. In ten of the eleven monitoring wells, dissolved oxygen increased as potassium permanganate oxidized TCE and the other chlorinated compounds. Only two monitoring wells were sampled for chloride during pre-treatment sampling. Comparison of chloride levels to post-treatment results in ESI-1 and ESI-2 indicate a slight increase in chloride.

6 FINDINGS AND RECOMMENDATIONS

6.1 Treatment Effectiveness

Potassium permanganate was used to treat TCE and other chlorinated volatile organic compounds within a plume that extends adjacent and partially underneath the JCC building. Two methods were implemented in treating the contaminated groundwater. The first method included the injection of a solution of potassium permanganate in ten borings. The second method included the placement of potassium permanganate cylinders as a treatment adjacent to PW-3R and installation of cylinders in monitoring wells inside the JCC building.

Generally, contaminant concentrations appeared to have deceased, although some increases were also observed. The table below presents a comparison of total VOC concentrations from each monitoring well and the percent change from pre-treatment and post-treatment groundwater monitoring. The change in total VOC concentrations is presented in Figure 9.

Monitoring Well	*Total VOC Concentration (ug/L)*		*Percent Change*
	Pre-Treatment	*Post-Treatment*	
PW-1	16.9	12.1	-28%
PW-3R	2,609.3	147.71	-94%
ESI-1	8.9	19.4	+118%
ESI-2	816.08	987.9	+21%
ESI-3	4.8	2.5	-48%
ESI-6	575.22	2,020	+251%
ESI-7	208.39	103	-51%
ESI-10	352.11	8.5	-98%
ESI-11	157	3.9	-98%
ESI-12	221.48	11.74	-95%
ESI-13R	40	64	+60%

Out of eleven monitoring wells, seven wells show a decrease in TCE and other chlorinated compounds. Four of the monitoring wells show a decrease of 94% or greater. The most significant decrease in TCE was observed in the groundwater collected from monitoring wells that were treated with cylinders PW-3R (source area) and ESI-10, 11 and 12 (inside the JCC Building). No TCE or other chlorinated compounds were detected in post-treatment samples from ESI-10 and ESI-11. Samples from these wells had only minor detections of acetone below NYSDEC standards. ESI-12 had a 93% reduction of TCE, reduced from 150 ug/L to 10 ug/L, although the reduced concentration still exceeds NYSDEC standards.

Monitoring wells within the area treated with injection borings still contain elevated levels of TCE (ESI-1, ESI-2, ESI-6 and ESI-13R). These monitoring wells have increased levels of daughter compounds of TCE indicating that reductive dechlorination

of TCE is taking place as a result of the potassium permanganate treatment. Additional time may be required to show additional contaminant concentration decreases in these wells.

Additionally, post-treatment samples collected from ESI-1, ESI-6 and ESI-13R show increases in TCE concentration. The reason for this observation is not clear, although a possible explanation is the injections displaced groundwater with higher concentrations that moved towards certain monitoring wells, or the ISCO materials mobilized the contaminants. Future monitoring events will provide additional information regarding this situation.

Chloride concentrations appeared to have increased in the two wells for which pre- and post-treatment monitoring results exist. Future monitoring rounds will include chloride in all sampled wells, so trends of chloride concentrations will be available during future monitoring events.

6.2 Recommendations

The first round of post-treatment sampling suggests that the potassium permanganate injections and cylinders appear to be effective in treating the groundwater contaminants in many wells and less effective in others. However, this conclusion is based on only one data set, and future data sets will be necessary to truly evaluate the efficacy of the treatment methods. Both the injected and placed materials will remain active for a period following the first sampling event, so additional decreases in concentration are expected.

As outlined in the remedial work plan, groundwater sampling will be conducted semi-annually for two years. After two years of monitoring, a full assessment of the remedial approach will be conducted and options for future work, if any, will be evaluated.

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TABLES

Table 1: Groundwater Elevations
Former Dowcraft Facility
Falconer, New York

Pre-Treatment Groundwater Monitoring
October 2014

Monitoring Well	*Depth to Water*	*Boring Depth*	*Casing Elevation*	*Groundwater Elevation*
ESI-1	9.05	13.6	1264.17	1255.12
ESI-10	10.2	14.7	1265.08	1254.88
ESI-11	10.1	15.4	1265.09	1254.99
ESI-12	9.45	15	1264.95	1255.5
ESI-13R	8.6	15	1263.31	1254.71
ESI-2	9.4	13.65	1264.6	1255.2
ESI-3	9.55	14	1264.89	1255.34
ESI-6	9.65	13.5	1264.66	1255.01
ESI-7	9.7	13.8	1264.93	1255.23
PW-1	9.5	19.6	1264.6	1255.1
PW-3R	9.55	36.8	1265.04	1255.49

Post-Treatment Groundwater Monitoring
April 2015

Monitoring Well	*Depth to Water*	*Boring Depth*	*Casing Elevation*	*Groundwater Elevation*
ESI-1	8.35	14.45	1264.17	1255.82
ESI-10	10.15	15	1265.08	1254.93
ESI-11	9.7	15.6	1265.09	1255.39
ESI-12	9.35	15.2	1264.95	1255.6
ESI-13R	8.8	15.25	1263.31	1254.51
ESI-2	9.1	14.8	1264.6	1255.5
ESI-3	8.8	14.3	1264.89	1256.09
ESI-6	9.6	13.75	1264.66	1255.06
ESI-7	8.85	13.9	1264.93	1256.08
PW-1	8.8	20.4	1264.6	1255.8
PW-3R	8.95	38.1	1265.04	1256.09

TABLE 2: GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
FORMER DOWCRAFT FACILITY
FALCONER, NEW YORK

Sample Location	NYSDEC Standards & Guidance Values	PW - 1	PW - 1	PW - 3R	PW - 3R	ESI - 1	ESI - 1	ESI - 2	ESI - 2	ESI - 3	ESI - 3	ESI - 6	ESI - 6
Sample Date		21-Oct-14	21-Apr-15	29-Oct-14	22-Apr-15	21-Oct-14	21-Apr-15	29-Oct-14	22-Apr-15	21-Oct-14	21-Apr-15	29-Oct-14	22-Apr-15
Matrix		Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Contaminant													
Volatile Organic Compounds													
Acetone	50			12	16								
Benzene	1			0.61 J	0.53 J								
Carbon disulfide	N/S			1.0	0.38 J							0.32 J	
1,1-Dichloroethane	5			5.1									
1,2-Dichloroethane	0.6				1.2								
1,1-Dichloroethene	5							1.1				1.6	
cis-1,2-Dichloroethene	5	1.9	8.8	21	1.6		4.4	550	740			210	1100
trans-1,2-Dichloroethene	5			39				4.5				2.2	
1,2-Dichloropropane	1			1.4									
Ethylbenzene	5												
Methylene Chloride	5								7.9 J				10 J
4-Methyl-2-pentanone	N/S												
Tetrachloroethene	5			18				0.48 J				1.1	
1,1,2-Trichloroethane	1												
Trichloroethene	5	15	3.3	0.79 J		8.9	15	120	110	4.8	2.5	200	810
Toluene	5			8.1	6.9								
Vinyl chloride	2			2500	120 E			140	130			160	100
Xylene (total)	5			2.3	1.1 J								
Total VOCs		**16.9**	**12.1**	**2609.3**	**147.71**	**8.9**	**19.4**	**816.08**	**987.9**	**4.8**	**2.5**	**575.22**	**2020**
Specific Conductance	N/S	1260	1230	1110	1540	1450	1460	1150	1200	1260	1160	1200	1280
Chloride	N/S		222 B		281 B	249 B	337 B	215 B	219 B		242 B		242 B
pH	N/S	6.86 HF	6.92 HF	6.4 HF	6.4 HF	6.58 HF	6.92 HF	7.06 HF	7.12 HF	6.9 HF	7.12 HF	7.05 HF	7.05 HF
Dissolved Oxygen	N/S	6.9 HF	9.5 HF	3.3 HF	0.96 HF	6.1 HF	7.9 HF	2.1 HF	10 HF	7.4 HF	10 HF	2.7 HF	2.7 HF

Notes

1) Shaded areas indicate concentration exceeds NYSDEC T.O.G.S 1.1.1 Ambient Water Quality Standards

2) < = not detected - below Method Detection Limit.

3) J = The analyte was positively identified but, the number indicates an estimated value. Detected concentration is less than the contract required quanititation limit but is greater than zero.

4) B = Compound was found in the blank and sample.

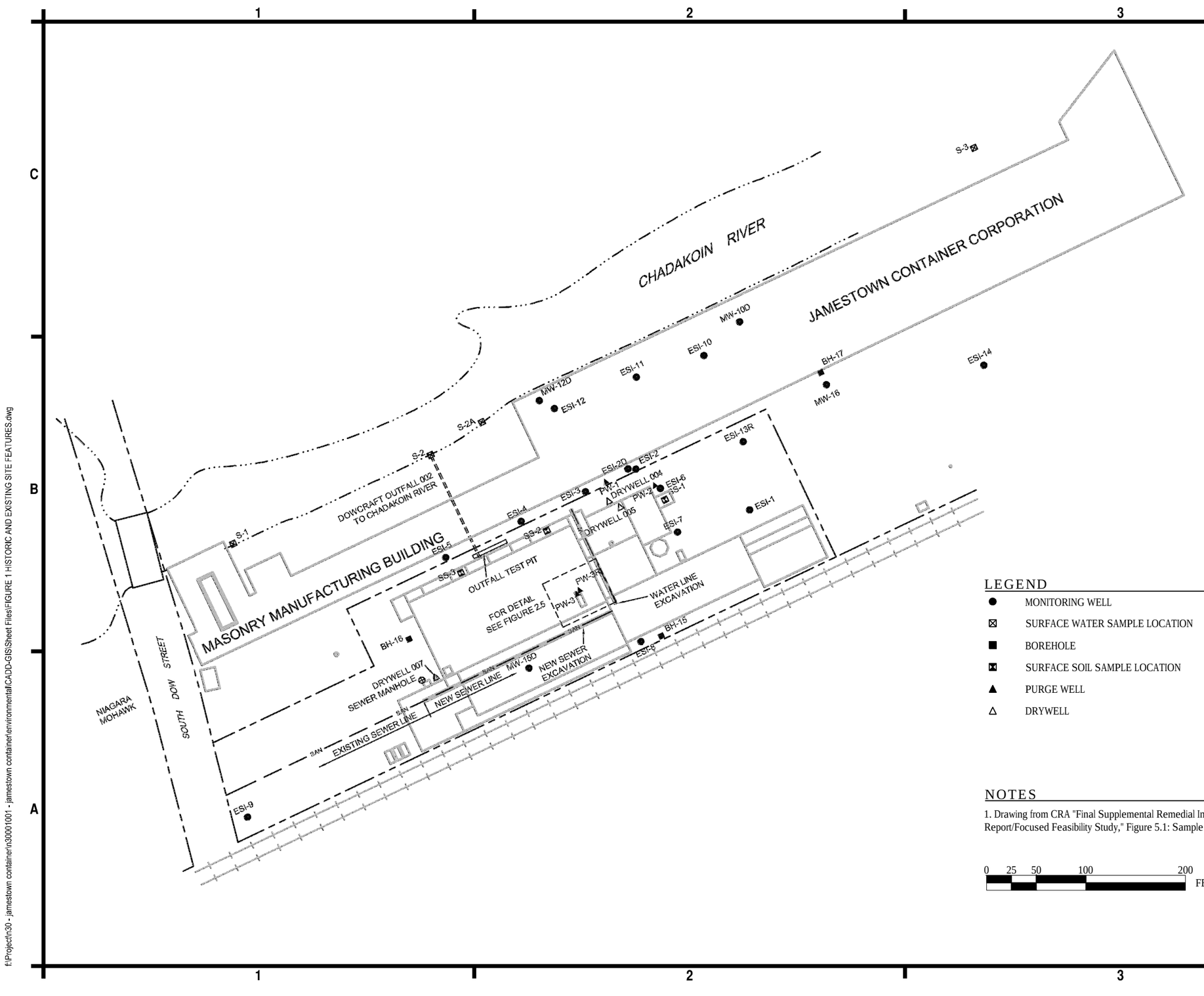
5) HF = Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

6) N/S = No Standard

TABLE 2: GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
FORMER DOWCRAFT FACILITY
FALCONER, NEW YORK

Sample Location	NYSDEC Standards & Guidance Values	ESI - 7		ESI - 7		ESI - 10		ESI - 10		ESI - 11		ESI - 11		ESI - 12		ESI - 12		ESI - 13R		ESI - 13R	
Sample Date		21-Oct-14		21-Apr-15		29-Oct-14		22-Apr-15		29-Oct-14		22-Apr-15		22-Oct-14		22-Apr-15		21-Oct-14		21-Apr-15	
Matrix		Water		Water		Water		Water		Water		Water		Water		Water		Water		Water	
Units		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Contaminant																					
Volatile Organic Compounds																					
Acetone	50							8.5	J			3.9	J								
Benzene	1																				
Carbon disulfide	N/S																				
1,1-Dichloroethane	5																				
1,2-Dichloroethane	0.6																				
1,1-Dichloroethene	5					0.61	J														
cis-1,2-Dichloroethene	5	78		25		250				76				71		1.2		18		18	
trans-1,2-Dichloroethene	5					2.5				2											
1,2-Dichloropropane	1																				
Ethylbenzene	5																				
Methylene Chloride	5																				
4-Methyl-2-pentanone	N/S																				
Tetrachloroethene	5	0.39	J											0.48	J	0.54	J				
1,1,2-Trichloroethane	1																				
Trichloroethene	5	130		78		62				55				150		10		22		46	
Toluene	5																				
Vinyl chloride	2					37				24											
Xylene (total)	5																				
Total VOCs		**208.39**		**103**		**352.11**		**8.5**		**157**		**3.9**		**221.48**		**11.74**		**40**		**64**	
Specific Conductance	N/S	1150		1450		953		987		896		1020		951		1040		1760		1530	
Chloride	N/S			331	B			164	B			165	B			175	B			357	B
pH	N/S	6.87	HF	6.88	HF	6.58	HF	6.69	HF	6.93	HF	6.76	HF	6.91	HF	7.04	HF	6.54	HF	6.66	HF
Dissolved Oxygen	N/S	7.3	HF	8.5	HF	1.8	HF	2.9	HF	1.8	HF	3.1	HF	5.4	HF	7.6	HF	3.7	HF	6.7	HF

FIGURES



LEGEND

- MONITORING WELL
- SURFACE WATER SAMPLE LOCATION
- BOREHOLE
- SURFACE SOIL SAMPLE LOCATION
- PURGE WELL
- DRYWELL

NOTES

1. Drawing from CRA "Final Supplemental Remedial Investigation Report/Focused Feasibility Study," Figure 5.1: Sample Locations, 2001.

0 25 50 100 200 FEET

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FORMER DOWCRAFT FACILITY
GROUNDWATER REMEDIATION
FALCONER, NEW YORK

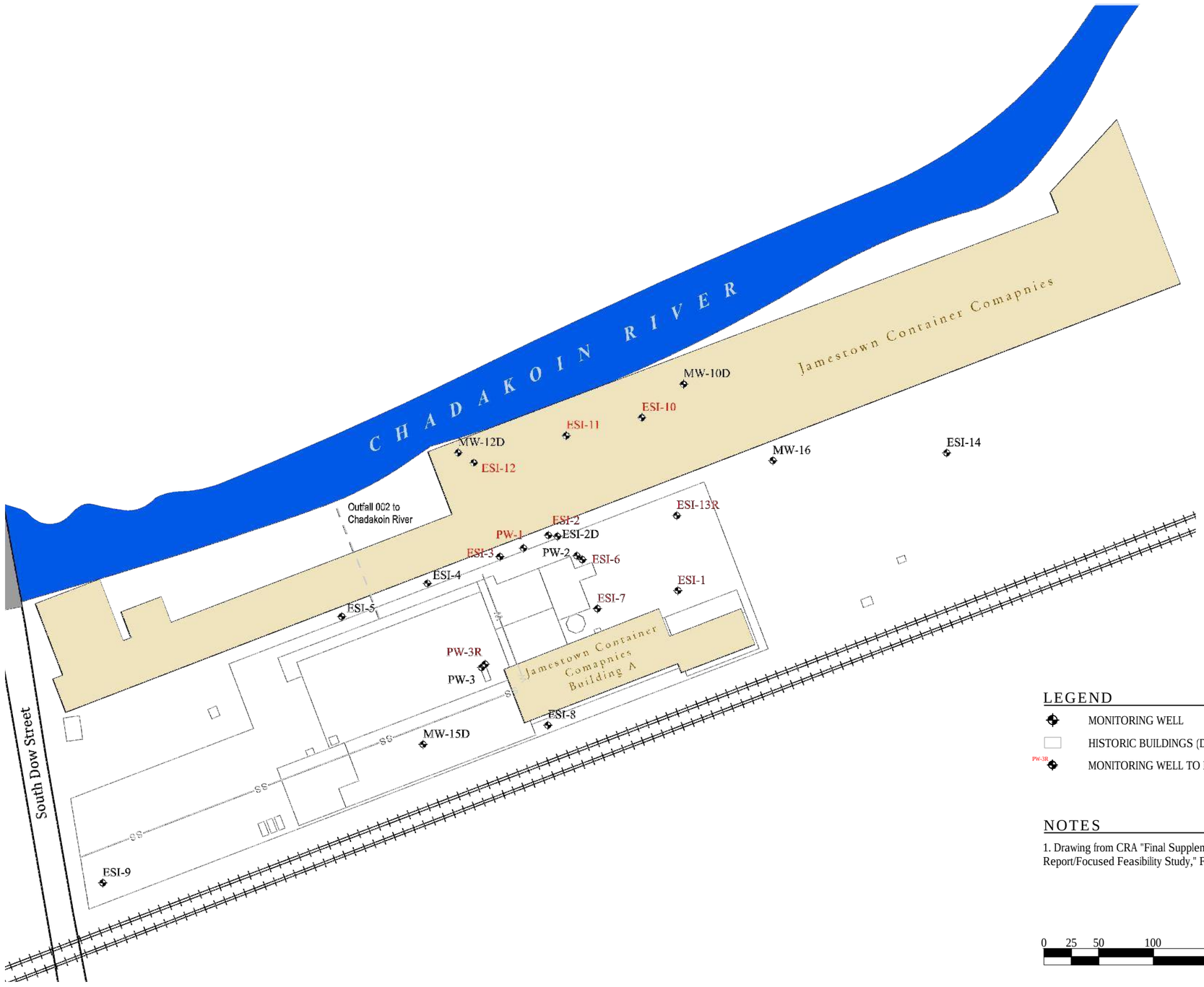
MARK	DATE	DESCRIPTION
REVISIONS		

PROJECT NO:	N30.001.001
DATE:	MAY 28, 2015
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	M. COLMERAUER

HISTORIC AND EXISTING SITE FEATURES

FIGURE 1

f:\Project\n30 - jamestown container\n30001001 - jamestown container\environmental\CADD-GIS\Sheet Files\FIGURE 1 HISTORIC AND EXISTING SITE FEATURES.dwg



LEGEND

- MONITORING WELL
- HISTORIC BUILDINGS (DEMOLISHED)
- PW-3R MONITORING WELL TO BE SAMPLED

NOTES

1. Drawing from CRA "Final Supplemental Remedial Investigation Report/Focused Feasibility Study," Figure 5.1: Sample Locations, 2001.

0 25 50 100 200 FEET

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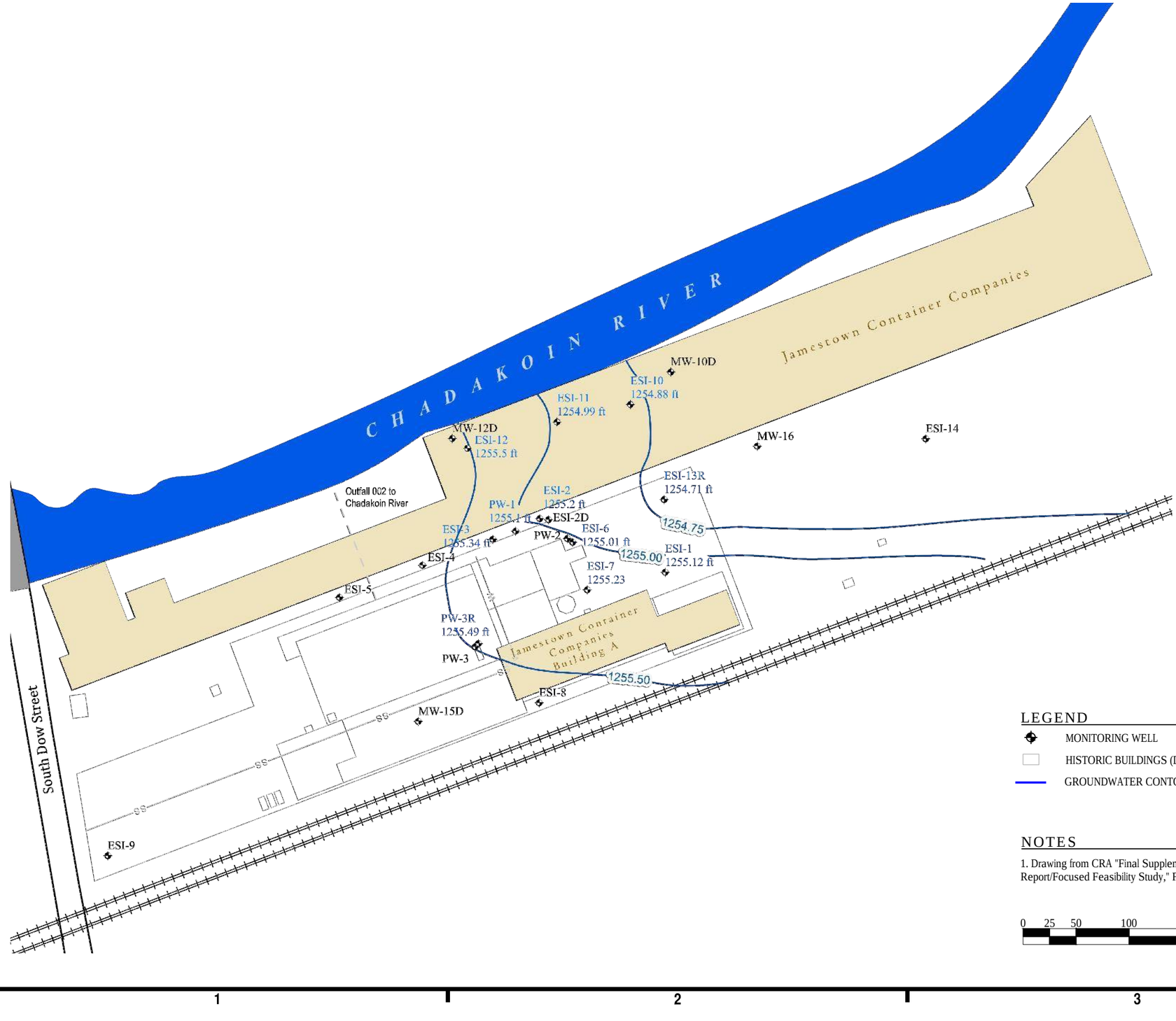
GROUNDWATER MONITORING

FIGURE 2

f:\Projects\n30 - jamestown container\n30001001 - jamestown container\environmental\CADD-GIS\Sheet Files\FIGURE 2 GROUNDWATER MONITORING.dwg



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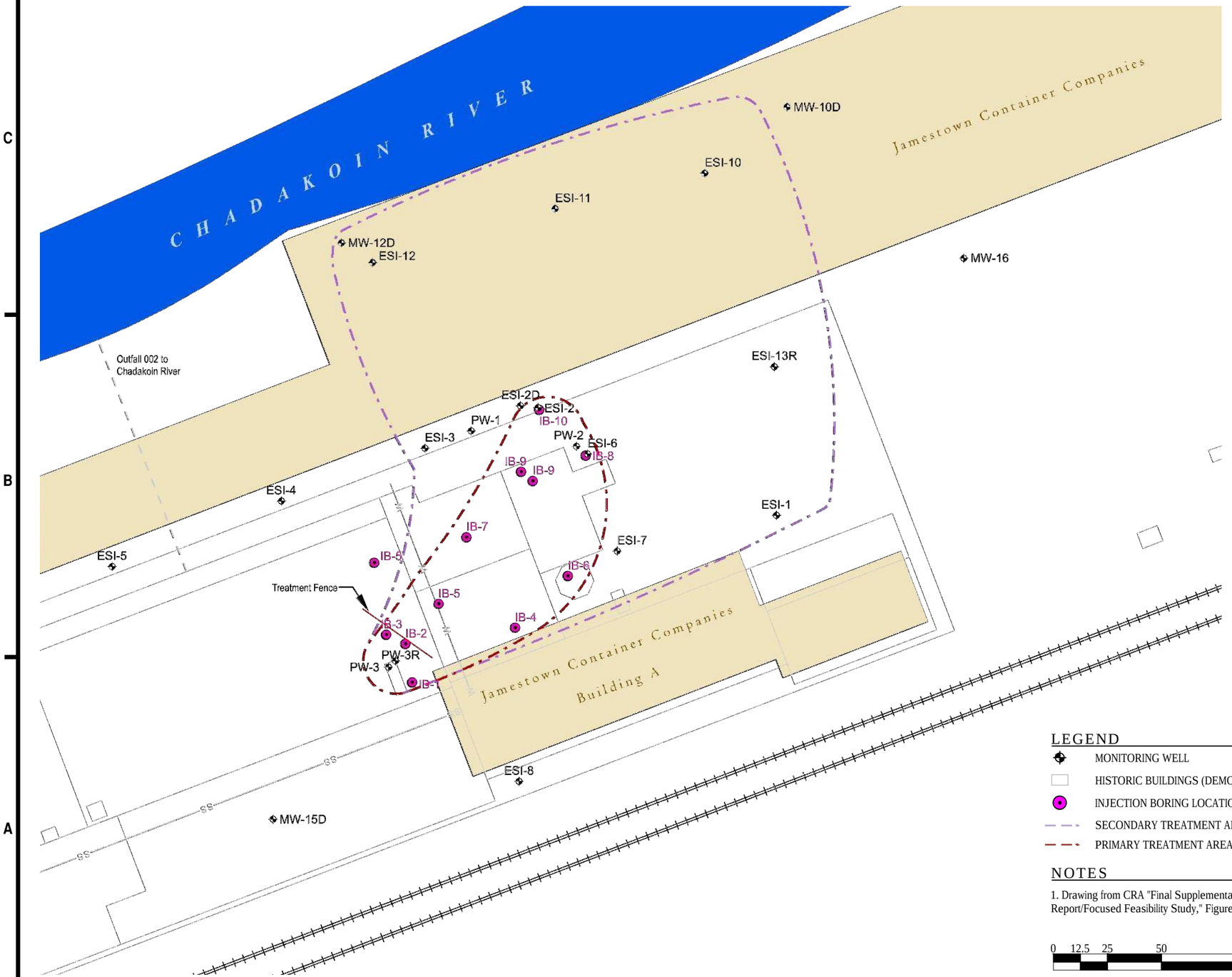
PRE-TREATMENT GROUNDWATER CONTOUR MAP

FIGURE 3

f:\Projectvn30 - jamestown container\n30001001 - jamestown container\environmental\CADD-GIS\Sheet Files\FIGURE 3 GROUNDWATER ELEVATION.dwg



f:\Project\n30 - jamestown container\n300010001 - jamestown container\environmental\CADD-GIS\Sheet Files\FIGURE 4 INJECTION BORINGS.dwg

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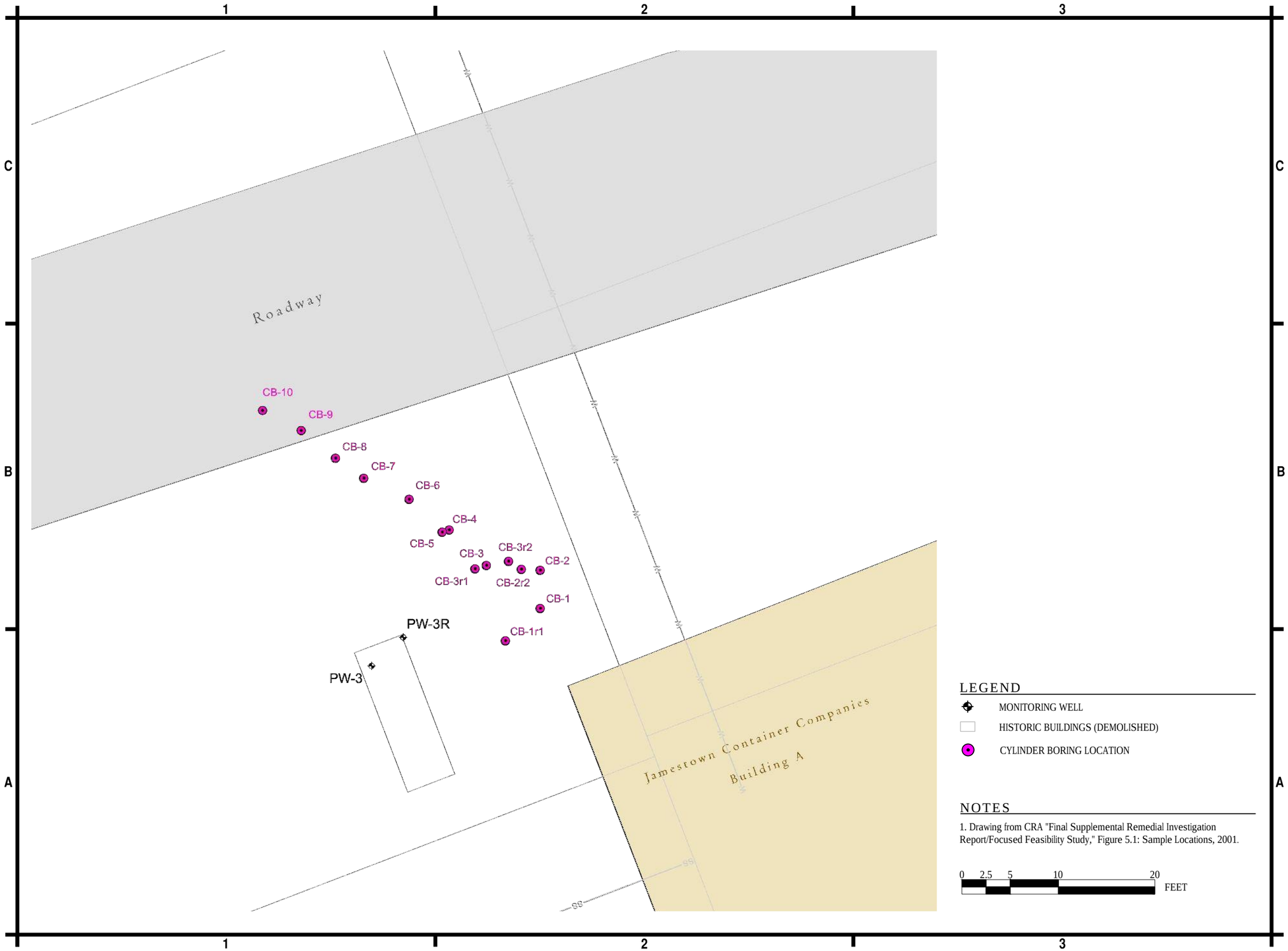
INJECTION BORINGS

FIGURE 4



LEGEND

- MONITORING WELL
- HISTORIC BUILDINGS (DEMOLISHED)
- CYLINDER BORING LOCATION

NOTES

1. Drawing from CRA "Final Supplemental Remedial Investigation Report/Focused Feasibility Study," Figure 5.1: Sample Locations, 2001.

0 2.5 5 10 20 FEET

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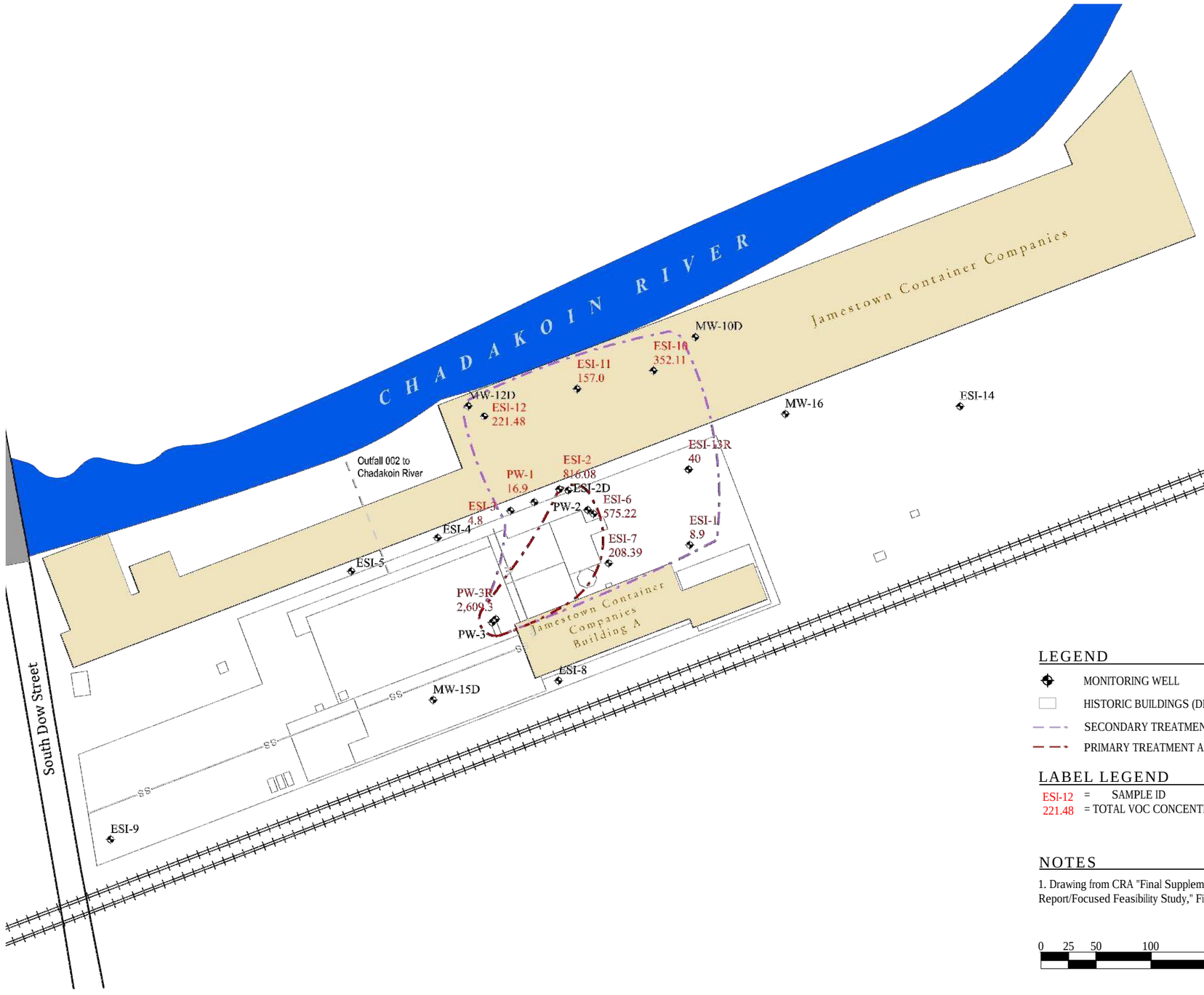
TREATMENT FENCE

FIGURE 5



LEGEND

- MONITORING WELL
- HISTORIC BUILDINGS (DEMOLISHED)
- SECONDARY TREATMENT AREA
- PRIMARY TREATMENT AREA

LABEL LEGEND

ESI-12 = SAMPLE ID
221.48 = TOTAL VOC CONCENTRATION (UG/L)

NOTES

1. Drawing from CRA "Final Supplemental Remedial Investigation Report/Focused Feasibility Study," Figure 5.1: Sample Locations, 2001.

0 25 50 100 200 FEET

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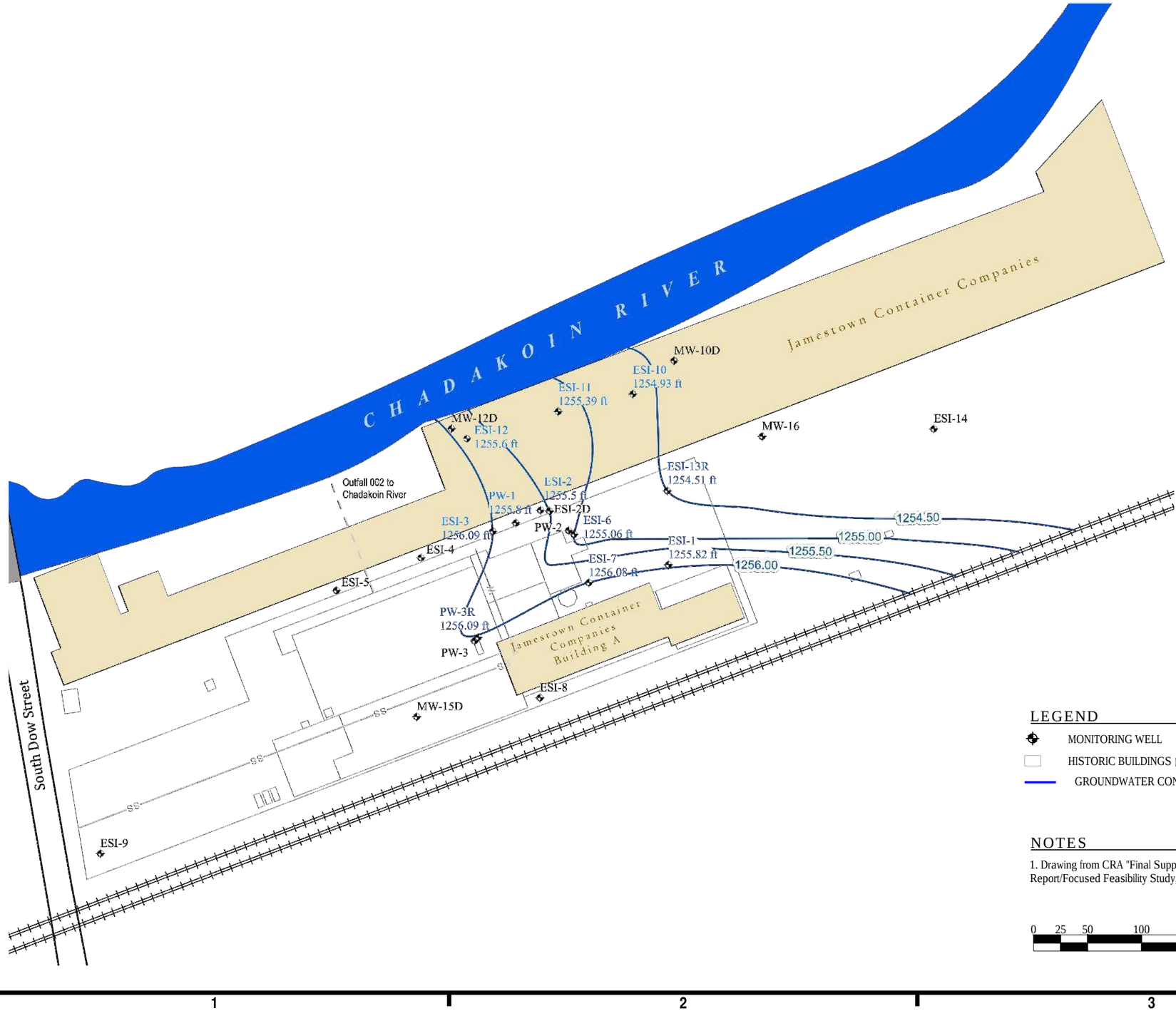
PRE-TREATMENT GROUNDWATER RESULTS

FIGURE 6

f:\Projects\n30 - jamestown container\n30001001 - jamestown container\environmental\CADD-GIS\Sheet Files\FIGURE 4 PRE-TREATMENT GROUNDWATER RESULTS.dwg



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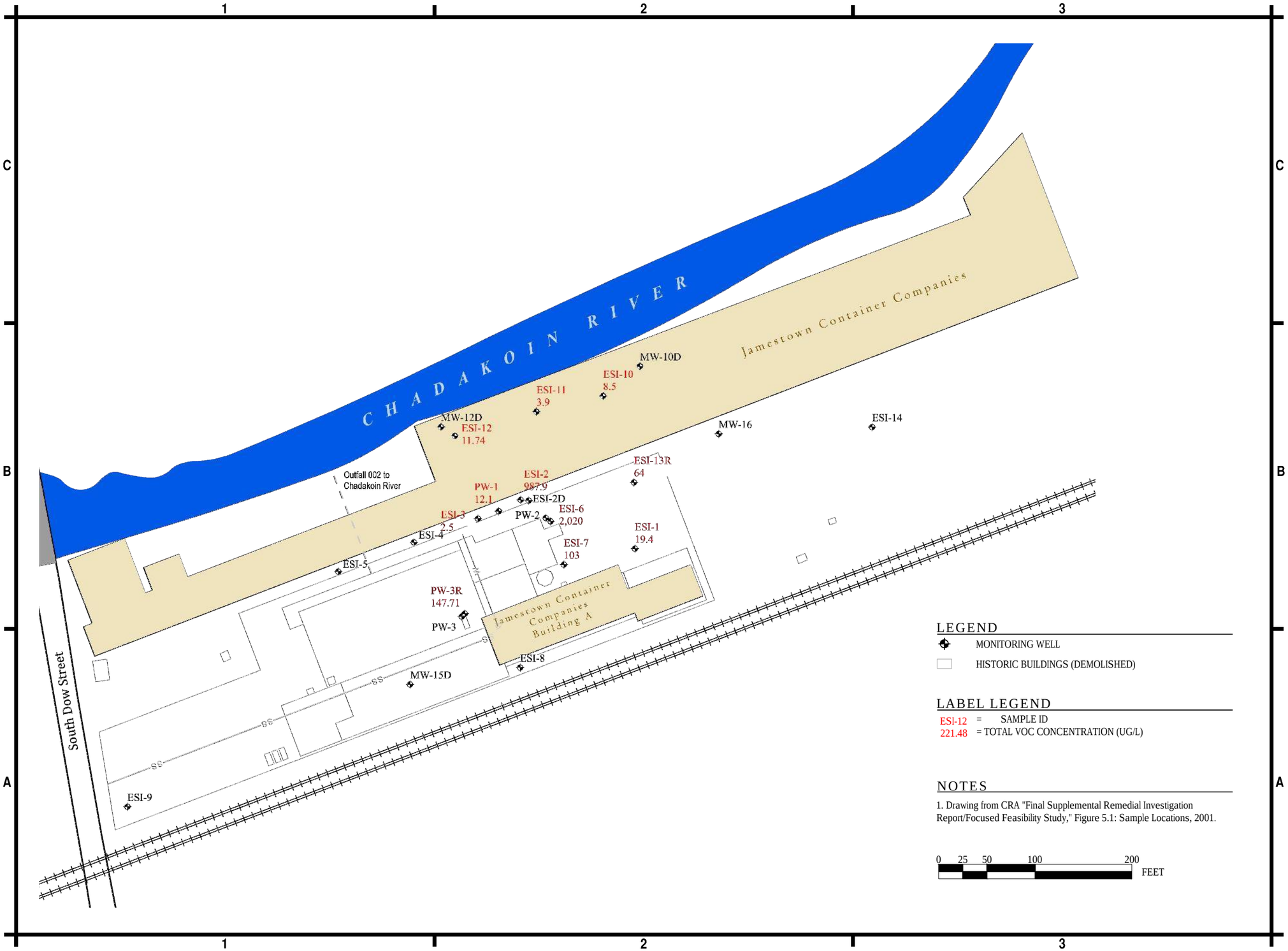
POST-TREATMENT GROUNDWATER CONTOUR MAP

FIGURE 7

f:\Project\n30 - jamestown container\n30001001 - jamestown container\environmental\CADD-GIS\Sheet Files\FIGURE 5 POST-TREATMENT GROUNDWATER ELEVATIO.dwg



LEGEND

- MONITORING WELL
- HISTORIC BUILDINGS (DEMOLISHED)

LABEL LEGEND

ESI-12 = SAMPLE ID
221.48 = TOTAL VOC CONCENTRATION (UG/L)

NOTES

1. Drawing from CRA "Final Supplemental Remedial Investigation Report/Focused Feasibility Study," Figure 5.1: Sample Locations, 2001.

0 25 50 100 200 FEET

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PROJECT NO:	N30.001.001
DATE:	MAY 28, 2015
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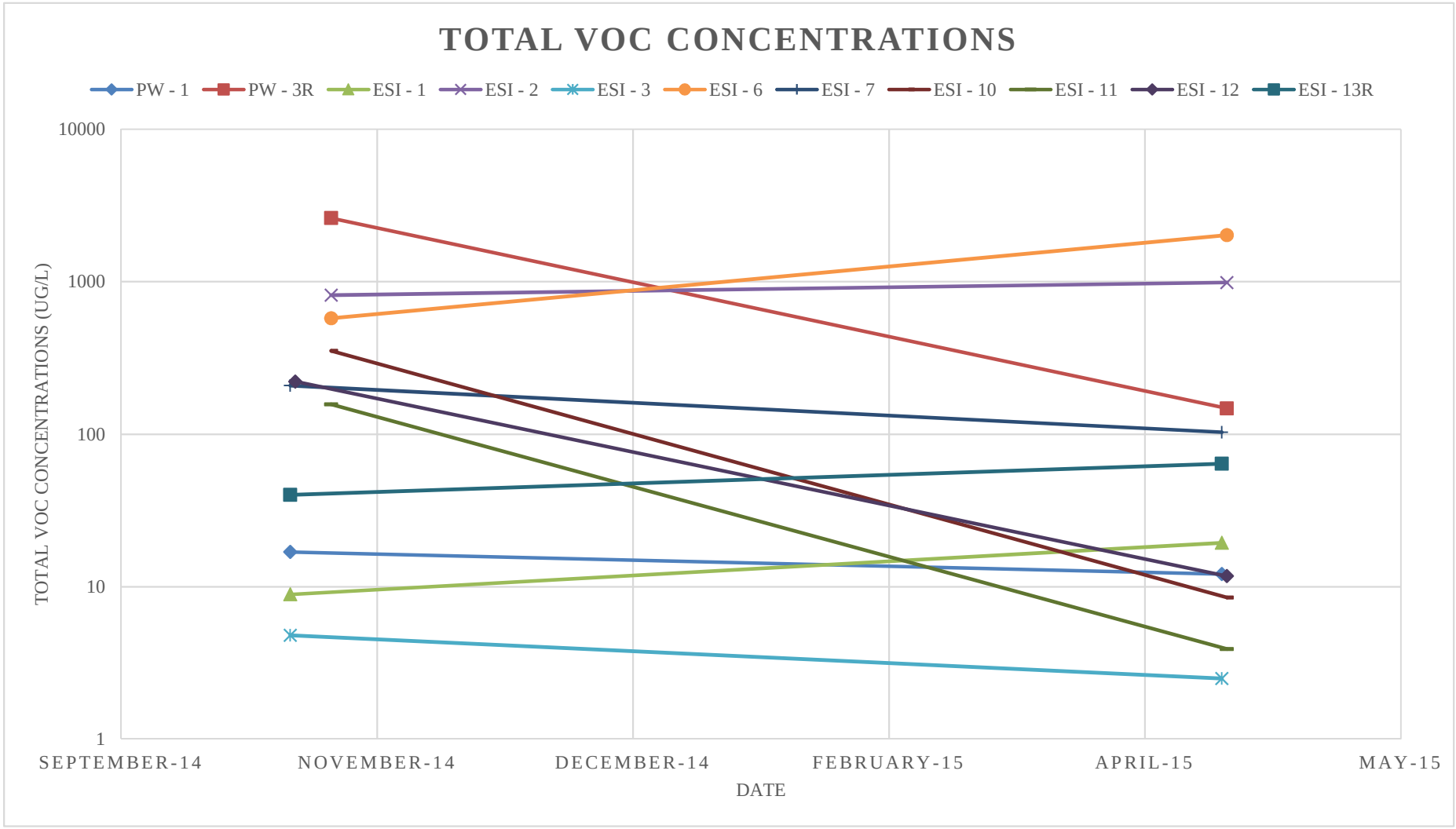
POST-TREATMENT GROUNDWATER RESULTS

FIGURE 8

FORMER DOWCRAFT FACILITY
FALCONER, NEW YORK
GROUNDWATER REMEDIATION

FIGURE 9



APPENDICES

APPENDIX A
MATERIAL SAFETY DATA SHEETS

CARUS
REMEDIATION



CAS Registry No. 7722-64-7
EINECS No. 231-760-3

RemOx® S ISCO Reagent

FACT SHEET

RemOx® S ISCO reagent has been specifically manufactured for environmental applications such as remediation of soils and associated groundwater. This product can be used to degrade a variety of contaminants including chlorinated solvents, polyaromatic hydrocarbons, phenolics, organo-pesticides, and substituted aromatics. RemOx S is shipped with a certificate of analysis to document assay and trace metals.

REMEDIATION GRADE

Assay

≥ 98.8% as $KMnO_4$

Trace Metals

(see Table 1)

CHEMICAL/PHYSICAL DATA

Formula	$KMnO_4$
Formula Weight	158.0 g/mol
Form	Granular Crystalline
Specific Gravity	
Solid	2.703 g/cm3
3% Solution	1.020 g/mL by weight, 20° C/ 4° C
Bulk Density	Approximately 100 lb/ft3

Decomposition may start at 150° C/ 302° F

SOLUBILITY IN DISTILLED WATER

Temperature		Solubility	
°C	°F	g/L	oz/gal
0	32	27.8	3.7
20	68	65.0	8.6
40	104	125.2	16.7
60	140	230.0	30.7
70	158	286.4	38.3
75	167	323.5	43.2

SHIPPING CONTAINERS

25-kg pail (55.125-lb) net, with handle, made of high-density polyethylene (HDPE), weighs 3.1 lbs (1.4 kg). It is tapered to allow nested storage of empty pails, stands approximately 15.5 in (39.4 cm) high and has a maximum diameter of 12 in (30.5 cm). (Domestic and international)

150-kg drum (330.75-lb) net, made of 12-gauge steel, weighs 25.3 lbs (11.5 kg). It stands approximately 28.4 in (72.4 cm) high and with approximately 18.25 in (46.4 cm) inside diameter. (Domestic and international)

SHIPPING CONTAINERS

907-kg FIBC (Flexible Intermediate Bulk Container) (2000-lb) net, (UN13H4/Y/0909), made of woven plastic, coated with inner poly liner. Dimensions are 30 in (76.2 cm) high, 30 in (76.2 cm) long, and 48 in (121.9 cm) wide. The spout diamater is 14 in (35.6 cm) and extends 18 in (45.7 cm) in length. (Domestic only)

1000-MT FIBC (Flexible Intermediate Bulk Container) (2205-lb) net, made of woven plastic, coated with inner poly liner. Dimensions are 30 in high (76.2 cm), 30 in (76.2 cm) long, and 48 in (121.9 cm) wide. The spout diamater is 14 in (35.6-cm) and extends 18 in (45.7-cm) in length. (International only)

Special Packages will be considered upon request.

Packaging meets UN performance-oriented packaging requirements.

DESCRIPTION

Crystals or granules are dark purple with a metallic sheen, sometimes with a dark bronze-like appearance. RemOx S has a sweetish, astringent taste and is odorless.

HANDLING, STORAGE, AND INCOMPATIBILITY

Protect containers against physical damage. When handling RemOx S, European Community (CE) approved respirators should be worn to avoid irritation of, or damage to, mucous membranes. Eye protection should also be worn when handling RemOx S as a solid or in solution.

Store in accordance with NFPA 30 requirements in the United States or the European Fire Protection Association in Europe for Class II oxidizers. Additional regulations in Europe are REACH (Regulation for Registration, Evaluation, Authorisation and Restriction of Chemicals), and CLP (Classification, Labeling, Packaging). REACH is a regulation that increases the responsibility of the industry to manage the risks that the chemical may pose. For REACH registration numbers refer to the eSDS. Check local regulations to ensure proper storage.

RemOx S is stable and will keep indefinitely if stored in a cool, dry area in closed containers. Concrete floors are preferred to wooden decks. To clean up spills and leaks, follow the steps recommended in the MSDS or eSDS. Be sure to use goggles, rubber gloves, and respirator when cleaning up a spill or leak.

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OUR COMMITMENT TO SUSTAINABILITY

CARUS®

CARUS REMEDIATION



CAS Registry No. 7722-64-7
EINECS No. 231-760-3

RemOx® S ISCO Reagent

FACT SHEET

HANDLING, STORAGE, AND INCOMPATIBILITY

Avoid contact with acids, peroxides, and all combustible organic or readily oxidizable materials including inorganic oxidizable materials and metal powders. With hydrochloric acid, chlorine gas is liberated. RemOx® S ISCO reagent is not combustible, but it will support combustion. It may decompose if exposed to intense heat. Fires may be controlled and extinguished by using large quantities of water. Refer to the MSDS or eSDS for more information.

SHIPPING

RemOx S is classified by the Hazardous Materials Transportation Board (HMTB) and The European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), as an oxidizer. It is shipped under Interstate Commerce Commission's (ICC) Tariff 19.

Proper Shipping Name: Potassium Permanganate (RQ-100/45.4)
Hazard Class: Oxidizer, Class 5.1
Identification Number: UN 1490
Division/ADR/RID Class: 5.1
Label Requirements: Oxidizer, 5.1
Packaging Group: II
Packaging Requirements: 49 CFR Parts 100 to 199
Sections: 173.152, 173.153, 173.194
Shipping Limitations:
Minimum quantities:
Rail car: See Tariff for destination
Truck: No minimum
H.S. Code 28.41.61.00

SHIPPING

Postal regulations:

Information applicable to packaging of oxidizers for shipment by the U.S. Postal Service to domestic and foreign destinations is readily available from the local postmaster. United Parcel Service accepts 25 lbs (11.3 kg) as largest unit quantity properly packaged; (consult United Parcel Service). According to ADR Regulation, transportation should not exceed 1.1.3.6. LIMITS, transport category 2, maximum authorized per transport unit, 333 kg. Regulations concerning shipping and packing should be consulted regularly due to frequent changes.

CORROSIVE PROPERTIES

RemOx S is compatible with many metals and synthetic materials. Natural rubbers and fibers are often incompatible. Solution pH and temperature are also important factors. The material must be compatible with either the acid or alkali also being used.

In neutral and alkaline solutions, RemOx S is not corrosive to iron, mild steel, or stainless steel; however, chloride corrosion of metals may be accelerated when an oxidant such as permanganate is present in solution. Plastics such as polypropylene, polyvinyl chloride Type I (PVC I), epoxy resins, fiberglass reinforced plastic (FRP), Penton, Lucite, Viton A, and Hypalon are suitable. Teflon FEP and TFE, and Tefzel ETFE are best. Refer to Material Compatibility Chart.

Aluminum, zinc, copper, lead, and alloys containing these metals may be (slightly) affected by RemOx S solutions. Actual studies should be made under the conditions in which permanganate will be used.

Table 1: Typical Trace Metal Content and Specifications

Element	Typical Analysis (mg/kg)	Specifications (mg/kg)	DL* (mg/kg)	Element	Typical Analysis (mg/kg)	Specifications (mg/kg)	DL* (mg/kg)
Ag	BDL	0.40	0.048	Hg	BDL	0.05	0.004
Al	55.85	115.00	0.28	Na	228.03	750	0.069
As	0.04	4.00	0.006	Ni	0.78	5.00	0.048
Ba	10.60	50.00	0.016	Pb	BDL	1.00	0.20
Be	BDL	0.50	0.10	Sb	BDL	1.00	0.20
Cd	BDL	0.10	0.02	Se	BDL	1.00	0.002
Cr	1.60	7.50	0.028	Tl	BDL	5.00	1.00
Cu	0.15	3.00	0.034	Zn	0.87	6.00	0.016
Fe	0.22	100.00	0.066	DL* = Detection limit		BDL = Below detection limit	

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REMEDIATION



CAS Registry No. 7722-64-7 EINECS No. 231-760-3

CAS Registry No. 64742-51-4 EINECS No. 265-154-5

RemOx® SR ISCO Reagent

FACT SHEET

RemOx® SR ISCO reagent has been specifically manufactured for environmental applications such as remediation of soils and associated groundwater. This product can be used to degrade a variety of contaminants including chlorinated solvents, polyaromatic hydrocarbons, phenolics, organo-pesticides, and substituted aromatics.

REMEDIATION GRADE

RemOx SR is manufactured with RemOx® S ISCO reagent. RemOx S meets Carus specifications and a certificate of analysis is available upon request for the RemOx S product used to manufacture RemOx SR.

CHEMICAL/PHYSICAL DATA

Formula $KMnO_4$ in paraffin wax

Formula Weight $KMnO_4$: 158.0 g/mol
Wax: not determined

Form Extruded solid of granular crystalline inside wax

Decomposition of $KMnO_4$ may start at 150° C/ 302° F

Congealing point of wax is 54-57° C/ 129-134° F

Paraffin wax will start to melt at 55° C/ 132° F

DESCRIPTION

Potassium permanganate crystals or granules are dark purple encapsulated in a clear wax.

Standard sizes are 1.35 in (3.4 cm) or 2.5 in (6.4 cm) diameter by 18 in (45.7 cm) long with 77-83% by weight $KMnO_4$.

APPLICATIONS

RemOx SR was developed to provide a sustained release of potassium permanganate for soil and groundwater treatment of: chlorinated ethenes, phenolic compounds, polyaromatic hydrocarbons, RDX, HMX, and various pesticides. RemOx SR can be emplaced in the subsurface using direct push technology or suspended into existing wells. This technology can be used for source treatment as well as barrier applications.

SHIPPING CONTAINERS

RemOx SR 1.35 in (3.4 cm) by 18 in (45.7 cm) cylinders - Qty 12/box Corrugated box that is 12.5 in (31.75 cm) by 10.625 in (26.987 cm) by 22 in (55.88 cm) with foam insert. Weight of box is 3.383 lbs (1.534 kg). Weight per cylinder is 1.931 lbs (0.875 kg) or 23.172 lbs (10.510 kg) per box. Total weight of box and cylinders is 26.555 lbs (12.045 kg). (Domestic and international)

RemOx SR 2.5 in (6.4 cm) by 18 in (45.7 cm) cylinder - Qty 6/box Corrugated box that is 12.5 in (31.75 cm) by 10.625 in (26.987 cm) by 22 in (55.88 cm) with foam insert. Weight of box is 3.303 lbs (1.498 kg). Weight per cylinder is 6.348 lbs (2.879 kg) or 38.088 lbs (17.276 kg) per box. Total weight of box and cylinders is 41.391 lbs (18.774 kg). (Domestic and international)

Specialty packaging above was designed to insure delivery of cylinders without breakage.

Orders can only be placed as full boxes in multiples of 6 or 12 depending on the cylinder dimensions.

Packaging meets UN performance-oriented packaging requirements.

SHIPPING

RemOx SR is classified as an oxidizer in accordance with the classification requirements of the Hazardous Materials Transportation regulations. It is shipped under Interstate Commerce Commission's (ICC) Tariff 19.

Proper Shipping Name: Oxidizing solid, n.o.s. (potassium permanganate) (RQ-100)

Hazard Class: Oxidizer

Identification Number: UN 1479

Label Requirements: Oxidizer

Packaging Requirements: 49 CFR Parts 100 to 199

Sections: 173.152, 173.153, 173.194

Shipping Limitations:

Minimum quantities:

Rail car: See Tariff for destination

Truck: No minimum

Postal regulations:

Information applicable to packaging of oxidizers for shipment by the U.S. Postal Service to domestic and foreign destinations is readily available from the local postmaster. United Parcel Service accepts 25 lbs as largest unit quantity properly packaged; (consult United Parcel Service). Regulations concerning shipping and packing should be consulted regularly due to frequent changes.

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rev. 01/13
form RX 1649

CARUS
REMEDIATION



CAS Registry No. 7722-64-7 EINECS No. 231-760-3

CAS Registry No. 64742-51-4 EINECS No. 265-154-5

RemOx® SR ISCO Reagent

FACT SHEET

CORROSIVE PROPERTIES

RemOx® SR ISCO reagent is compatible with many metals and synthetic materials. Natural rubbers and fibers are often incompatible. Solution pH and temperature are also important factors. The material must be compatible with either the acid or alkali also being used.

In neutral and alkaline solutions, RemOx SR is not corrosive to iron, mild steel, or stainless steel; however, chloride corrosion of metals may be accelerated when an oxidant such as permanganate is present in solution. Plastics such as polypropylene, polyvinyl chloride Type I (PVC I), epoxy resins, fiberglass reinforced plastic (FRP), Penton, Lucite, Viton A, and Hypalon are suitable. Teflon FEP and TFE, and Tefzel ETFE are best. Refer to Material Compatibility Chart.

Aluminum, zinc, copper, lead, and alloys containing these metals may be (slightly) affected by RemOx SR solutions. Actual studies should be made under the conditions in which permanganate will be used.

HANDLING, STORAGE, AND INCOMAPTIBILITY

Protect containers against physical damage. Eye protection should also be worn when handling RemOx SR as a solid or in solution. Avoid breathing vapors or mists of the wax. Exposure or inhalation may cause irritation.

RemOx SR is stable and will keep indefinitely if stored in a cool, dry area in closed containers. Concrete floors are preferred to wooden decks. To clean up spills and leaks, follow the steps recommended in the MSDS or eSDS. Be sure to use goggles, rubber gloves, and respirator when cleaning up a spill or leak.

Avoid contact with acids, peroxides, and all combustible organic or readily oxidizable materials including inorganic oxidizable materials and metal powders. With hydrochloric acid, chlorine gas is liberated. Avoid heating wax to 200° C (392° F) in the presence of potassium permanganate. RemOx SR is not combustible, but it will support combustion. It may decompose if exposed to intense heat. Fires may be controlled and extinguished by using large quantities of water. Refer to the MSDS or eSDS for more information.

CARUS CORPORATION

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RESPONSIBLE CARE®
OUR COMMITMENT TO SUSTAINABILITY

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APPENDIX B
GROUNDWATER ANALYTICAL RESULTS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-79037-1
Client Project/Site: Jamestown Container Site

For:
C&S Engineers, Inc.
141 Elm Street
Suite 100
Buffalo, New York 14203

Attn: Cody Martin

Joseph V. Giacomazza

Authorized for release by:
5/8/2015 2:30:08 PM
Joe Giacomazza, Project Management Assistant II
joe.giacomazza@testamericainc.com

Designee for

Judy Stone, Senior Project Manager
(484)685-0868
judy.stone@testamericainc.com

Table of Contents

Definitions/Glossary

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
E	Result exceeded calibration range.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Job ID: 480-79037-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-79037-1

Receipt
The samples were received on 4/23/2015 11:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.9º C.

Except:
Logged in 8260C as volumes were received but not listed on COC

GC/MS VOA
Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 239309 recovered above the upper control limit for several analytes. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data has been reported. The following samples were impacted: ESI-1-042115 (480-79037-1), ESI-2-042215 (480-79037-2), ESI-3-042115 (480-79037-3), ESI-7-042115 (480-79037-5), ESI-11-042215 (480-79037-7), ESI-13R-042115 (480-79037-9), PW-1-042115 (480-79037-10) and PW-3-042215 (480-79037-11).

Method(s) 8260C: The continuing calibration verification (CCV) analyzed in batch 239309 was outside the method criteria for the following analyte: Carbon disulfide. The analyte was biased high within the countinuing calibration verification, therefore as indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.The following sample was impacted: PW-3-042215 (480-79037-11)

Method(s) 8260C: The laboratory control sample (LCS) for batch 239309 recovered outside control limits for the following analytes: Chloroethane and 1,1-Dichloroethene . These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data has been reported. The following samples are impacted: ESI-1-042115 (480-79037-1), ESI-2-042215 (480-79037-2), ESI-3-042115 (480-79037-3), ESI-7-042115 (480-79037-5), ESI-11-042215 (480-79037-7), ESI-13R-042115 (480-79037-9), PW-1-042115 (480-79037-10) and PW-3-042215 (480-79037-11)

Method(s) 8260C: The following samples were diluted to bring the concentration of target analytes within the calibration range: ESI-2-042215 (480-79037-2) and ESI-7-042115 (480-79037-5). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: Due to the presense of potassium permanginate, the following sample was treated with Hydoxylamine Hydrochloride prior to analysis. ESI-11-042215 (480-79037-7)

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 239602 recovered above the upper control limit for Several Analytes. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data has been reported. The following samples are impacted: ESI-6-042215 (480-79037-4), ESI-10-042215 (480-79037-6), ESI-12-042215 (480-79037-8) and PW-3-042215 (480-79037-11).

Method(s) 8260C: The continuing calibration verification (CCV) analyzed in batch 239602 was outside the method criteria for the following analyte: Vinyl Chloride. The analyte was biased high in the CCV, as indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated. The following samples are impacted: ESI-6-042215 (480-79037-4) and PW-3-042215 (480-79037-11)

Method(s) 8260C: The laboratory control sample (LCS) for batch 239602 recovered outside control limits for the following analytes: Chloroethane and Vinyl chloride. These were not requested spike compounds; therefore, the data have been qualified and reported.ESI-6-042215 (480-79037-4), ESI-10-042215 (480-79037-6), ESI-12-042215 (480-79037-8) and PW-3-042215 (480-79037-11)

Method(s) 8260C: The following samples were diluted to bring the concentration of target analytes within the calibration range: ESI-6-042215 (480-79037-4) and PW-3-042215 (480-79037-11). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method(s) 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes.

Job ID: 480-79037-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: ESI-3-042115 (480-79037-3) and PW-1-042115 (480-79037-10).

Method(s) 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: ESI-1-042115 (480-79037-1), ESI-2-042215 (480-79037-2) and ESI-6-042215 (480-79037-4).

Method(s) 9040C, SM 4500 H+ B: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: ESI-7-042115 (480-79037-5), ESI-10-042215 (480-79037-6), ESI-11-042215 (480-79037-7), ESI-12-042215 (480-79037-8), ESI-13R-042115 (480-79037-9) and PW-3-042215 (480-79037-11).

Method(s) SM 4500 O G: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: ESI-1-042115 (480-79037-1), ESI-2-042215 (480-79037-2), ESI-3-042115 (480-79037-3), ESI-6-042215 (480-79037-4), ESI-7-042115 (480-79037-5), ESI-10-042215 (480-79037-6), ESI-11-042215 (480-79037-7), ESI-12-042215 (480-79037-8), ESI-13R-042115 (480-79037-9), PW-1-042115 (480-79037-10) and PW-3-042215 (480-79037-11).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Client Sample ID: ESI-1-042115 — Lab Sample ID: 480-79037-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	4.4		1.0	0.81	ug/L	1		8260C	Total/NA
Trichloroethene	15		1.0	0.46	ug/L	1		8260C	Total/NA
Chloride	337	B	10.0	4.6	mg/L	10		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1460		1.00	1.00	umhos/cm	1		120.1	Total/NA
pH	6.92	HF	0.100	0.100	SU	1		9040C	Total/NA
Oxygen, Dissolved	7.9	HF	0.050	0.050	mg/L	1		SM 4500 O G	Total/NA

Client Sample ID: ESI-2-042215 — Lab Sample ID: 480-79037-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	740		10	8.1	ug/L	10		8260C	Total/NA
Methylene Chloride	7.9	J	10	4.4	ug/L	10		8260C	Total/NA
Trichloroethene	110		10	4.6	ug/L	10		8260C	Total/NA
Vinyl chloride	130		10	9.0	ug/L	10		8260C	Total/NA
Chloride	219	B	10.0	4.6	mg/L	10		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1200		1.00	1.00	umhos/cm	1		120.1	Total/NA
pH	7.09	HF	0.100	0.100	SU	1		9040C	Total/NA
Oxygen, Dissolved	4.9	HF	0.050	0.050	mg/L	1		SM 4500 O G	Total/NA

Client Sample ID: ESI-3-042115 — Lab Sample ID: 480-79037-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	2.5		1.0	0.46	ug/L	1		8260C	Total/NA
Chloride	218	B	10.0	4.6	mg/L	10		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1160		1.00	1.00	umhos/cm	1		120.1	Total/NA
pH	7.12	HF	0.100	0.100	SU	1		9040C	Total/NA
Oxygen, Dissolved	10.0	HF	0.050	0.050	mg/L	1		SM 4500 O G	Total/NA

Client Sample ID: ESI-6-042215 — Lab Sample ID: 480-79037-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1100		20	16	ug/L	20		8260C	Total/NA
Methylene Chloride	10	J	20	8.8	ug/L	20		8260C	Total/NA
Trichloroethene	810		20	9.2	ug/L	20		8260C	Total/NA
Vinyl chloride	100	* ^	20	18	ug/L	20		8260C	Total/NA
Chloride	242	B	10.0	4.6	mg/L	10		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1280		1.00	1.00	umhos/cm	1		120.1	Total/NA
pH	7.05	HF	0.100	0.100	SU	1		9040C	Total/NA
Oxygen, Dissolved	2.7	HF	0.050	0.050	mg/L	1		SM 4500 O G	Total/NA

Client Sample ID: ESI-7-042115 — Lab Sample ID: 480-79037-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	25		2.0	1.6	ug/L	2		8260C	Total/NA
Trichloroethene	78		2.0	0.92	ug/L	2		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: ESI-7-042115 (Continued) — Lab Sample ID: 480-79037-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	331	B	10.0	4.6	mg/L	10		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1450		1.00	1.00	umhos/cm	1		120.1	Total/NA
pH	6.88	HF	0.100	0.100	SU	1		9040C	Total/NA
Oxygen, Dissolved	8.5	HF	0.050	0.050	mg/L	1		SM 4500 O G	Total/NA

Client Sample ID: ESI-10-042215 — Lab Sample ID: 480-79037-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	8.5	J	10	3.0	ug/L	1		8260C	Total/NA
Bromoform	6.1		1.0	0.26	ug/L	1		8260C	Total/NA
Chloride	164	B	5.0	2.3	mg/L	5		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	987		1.00	1.00	umhos/cm	1		120.1	Total/NA
pH	6.69	HF	0.100	0.100	SU	1		9040C	Total/NA
Oxygen, Dissolved	2.9	HF	0.050	0.050	mg/L	1		SM 4500 O G	Total/NA

Client Sample ID: ESI-11-042215 — Lab Sample ID: 480-79037-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.9	J	10	3.0	ug/L	1		8260C	Total/NA
Bromoform	5.7		1.0	0.26	ug/L	1		8260C	Total/NA
Chloride	165	B	5.0	2.3	mg/L	5		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1020		1.00	1.00	umhos/cm	1		120.1	Total/NA
pH	6.76	HF	0.100	0.100	SU	1		9040C	Total/NA
Oxygen, Dissolved	3.1	HF	0.050	0.050	mg/L	1		SM 4500 O G	Total/NA

Client Sample ID: ESI-12-042215 — Lab Sample ID: 480-79037-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bromoform	2.0		1.0	0.26	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	1.2		1.0	0.81	ug/L	1		8260C	Total/NA
Tetrachloroethene	0.54	J	1.0	0.36	ug/L	1		8260C	Total/NA
Trichloroethene	10		1.0	0.46	ug/L	1		8260C	Total/NA
Chloride	176	B	5.0	2.3	mg/L	5		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1040		1.00	1.00	umhos/cm	1		120.1	Total/NA
pH	7.04	HF	0.100	0.100	SU	1		9040C	Total/NA
Oxygen, Dissolved	7.6	HF	0.050	0.050	mg/L	1		SM 4500 O G	Total/NA

Client Sample ID: ESI-13R-042115 — Lab Sample ID: 480-79037-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	18		1.0	0.81	ug/L	1		8260C	Total/NA
Trichloroethene	46		1.0	0.46	ug/L	1		8260C	Total/NA
Chloride	357	B	10.0	4.6	mg/L	10		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1530		1.00	1.00	umhos/cm	1		120.1	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: ESI-13R-042115 (Continued) — Lab Sample ID: 480-79037-9

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
pH	6.66	HF	0.100	0.100	SU	1		9040C	Total/NA
Oxygen, Dissolved	6.7	HF	0.050	0.050	mg/L	1		SM 4500 O G	Total/NA

Client Sample ID: PW-1-042115 — Lab Sample ID: 480-79037-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	8.8		1.0	0.81	ug/L	1		8260C	Total/NA
Trichloroethene	3.3		1.0	0.46	ug/L	1		8260C	Total/NA
Chloride	222	B	5.0	2.3	mg/L	5		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1230		1.00	1.00	umhos/cm	1		120.1	Total/NA
pH	6.92	HF	0.100	0.100	SU	1		9040C	Total/NA
Oxygen, Dissolved	9.5	HF	0.050	0.050	mg/L	1		SM 4500 O G	Total/NA

Client Sample ID: PW-3-042215 — Lab Sample ID: 480-79037-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	4.0		1.0	0.38	ug/L	1		8260C	Total/NA
1,2-Dichloropropane	1.2		1.0	0.72	ug/L	1		8260C	Total/NA
2-Butanone (MEK)	1.4	J	10	1.3	ug/L	1		8260C	Total/NA
Acetone	16		10	3.0	ug/L	1		8260C	Total/NA
Benzene	0.53	J	1.0	0.41	ug/L	1		8260C	Total/NA
Carbon disulfide	0.38	J ^	1.0	0.19	ug/L	1		8260C	Total/NA
cis-1,2-Dichloroethene	1.6		1.0	0.81	ug/L	1		8260C	Total/NA
Toluene	6.9		1.0	0.51	ug/L	1		8260C	Total/NA
Vinyl chloride	120	E	1.0	0.90	ug/L	1		8260C	Total/NA
Xylenes, Total	1.1	J	2.0	0.66	ug/L	1		8260C	Total/NA
1,1-Dichloroethane - DL	3.4		2.0	0.76	ug/L	2		8260C	Total/NA
Acetone - DL	19	J	20	6.0	ug/L	2		8260C	Total/NA
Methylene Chloride - DL	1.7	J	2.0	0.88	ug/L	2		8260C	Total/NA
Toluene - DL	6.5		2.0	1.0	ug/L	2		8260C	Total/NA
Vinyl chloride - DL	120	* ^	2.0	1.8	ug/L	2		8260C	Total/NA
Chloride	281	B	10.0	4.6	mg/L	10		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Conductance	1540		1.00	1.00	umhos/cm	1		120.1	Total/NA
pH	6.40	HF	0.100	0.100	SU	1		9040C	Total/NA
Oxygen, Dissolved	0.96	HF	0.050	0.050	mg/L	1		SM 4500 O G	Total/NA

This Detection Summary does not include radiochemical test results.

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Client Sample ID: ESI-1-042115
Date Collected: 04/21/15 14:40
Date Received: 04/23/15 11:10

Lab Sample ID: 480-79037-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			04/29/15 15:58	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			04/29/15 15:58	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			04/29/15 15:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			04/29/15 15:58	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			04/29/15 15:58	1
1,1-Dichloroethene	ND	*	1.0	0.29	ug/L			04/29/15 15:58	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			04/29/15 15:58	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			04/29/15 15:58	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			04/29/15 15:58	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			04/29/15 15:58	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			04/29/15 15:58	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			04/29/15 15:58	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			04/29/15 15:58	1
2-Butanone (MEK)	ND		10	1.3	ug/L			04/29/15 15:58	1
2-Hexanone	ND		5.0	1.2	ug/L			04/29/15 15:58	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			04/29/15 15:58	1
Acetone	ND		10	3.0	ug/L			04/29/15 15:58	1
Benzene	ND		1.0	0.41	ug/L			04/29/15 15:58	1
Bromodichloromethane	ND		1.0	0.39	ug/L			04/29/15 15:58	1
Bromoform	ND		1.0	0.26	ug/L			04/29/15 15:58	1
Bromomethane	ND		1.0	0.69	ug/L			04/29/15 15:58	1
Carbon disulfide	ND		1.0	0.19	ug/L			04/29/15 15:58	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			04/29/15 15:58	1
Chlorobenzene	ND		1.0	0.75	ug/L			04/29/15 15:58	1
Dibromochloromethane	ND		1.0	0.32	ug/L			04/29/15 15:58	1
Chloroethane	ND	*	1.0	0.32	ug/L			04/29/15 15:58	1
Chloroform	ND		1.0	0.34	ug/L			04/29/15 15:58	1
Chloromethane	ND		1.0	0.35	ug/L			04/29/15 15:58	1
cis-1,2-Dichloroethene	**4.4**		1.0	0.81	ug/L			04/29/15 15:58	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			04/29/15 15:58	1
Cyclohexane	ND		1.0	0.18	ug/L			04/29/15 15:58	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			04/29/15 15:58	1
Ethylbenzene	ND		1.0	0.74	ug/L			04/29/15 15:58	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			04/29/15 15:58	1
Isopropylbenzene	ND		1.0	0.79	ug/L			04/29/15 15:58	1
Methyl acetate	ND		2.5	0.50	ug/L			04/29/15 15:58	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			04/29/15 15:58	1
Methylcyclohexane	ND		1.0	0.16	ug/L			04/29/15 15:58	1
Methylene Chloride	ND		1.0	0.44	ug/L			04/29/15 15:58	1
Styrene	ND		1.0	0.73	ug/L			04/29/15 15:58	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/29/15 15:58	1
Toluene	ND		1.0	0.51	ug/L			04/29/15 15:58	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/29/15 15:58	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			04/29/15 15:58	1
Trichloroethene	**15**		1.0	0.46	ug/L			04/29/15 15:58	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			04/29/15 15:58	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/29/15 15:58	1
Xylenes, Total	ND		2.0	0.66	ug/L			04/29/15 15:58	1

Client Sample ID: ESI-1-042115

Date Collected: 04/21/15 14:40
Date Received: 04/23/15 11:10

Lab Sample ID: 480-79037-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*71 - 126*		*04/29/15 15:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*66 - 137*		*04/29/15 15:58*	*1*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*04/29/15 15:58*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**337**	**B**	10.0	4.6	mg/L			05/06/15 18:07	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	**1460**		1.00	1.00	umhos/cm			04/28/15 12:22	1
pH	**6.92**	**HF**	0.100	0.100	SU			04/30/15 14:50	1
Oxygen, Dissolved	**7.9**	**HF**	0.050	0.050	mg/L			04/23/15 14:57	1

Client Sample ID: ESI-2-042215

Date Collected: 04/22/15 15:40
Date Received: 04/23/15 11:10

Lab Sample ID: 480-79037-2

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		10	8.2	ug/L			04/29/15 16:21	10
1,1,2,2-Tetrachloroethane	ND		10	2.1	ug/L			04/29/15 16:21	10
1,1,2-Trichloroethane	ND		10	2.3	ug/L			04/29/15 16:21	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10	3.1	ug/L			04/29/15 16:21	10
1,1-Dichloroethane	ND		10	3.8	ug/L			04/29/15 16:21	10
1,1-Dichloroethene	ND	*	10	2.9	ug/L			04/29/15 16:21	10
1,2,4-Trichlorobenzene	ND		10	4.1	ug/L			04/29/15 16:21	10
1,2-Dibromo-3-Chloropropane	ND		10	3.9	ug/L			04/29/15 16:21	10
1,2-Dichlorobenzene	ND		10	7.9	ug/L			04/29/15 16:21	10
1,2-Dichloroethane	ND		10	2.1	ug/L			04/29/15 16:21	10
1,2-Dichloropropane	ND		10	7.2	ug/L			04/29/15 16:21	10
1,3-Dichlorobenzene	ND		10	7.8	ug/L			04/29/15 16:21	10
1,4-Dichlorobenzene	ND		10	8.4	ug/L			04/29/15 16:21	10
2-Butanone (MEK)	ND		100	13	ug/L			04/29/15 16:21	10
2-Hexanone	ND		50	12	ug/L			04/29/15 16:21	10
4-Methyl-2-pentanone (MIBK)	ND		50	21	ug/L			04/29/15 16:21	10
Acetone	ND		100	30	ug/L			04/29/15 16:21	10
Benzene	ND		10	4.1	ug/L			04/29/15 16:21	10
Bromodichloromethane	ND		10	3.9	ug/L			04/29/15 16:21	10
Bromoform	ND		10	2.6	ug/L			04/29/15 16:21	10
Bromomethane	ND		10	6.9	ug/L			04/29/15 16:21	10
Carbon disulfide	ND		10	1.9	ug/L			04/29/15 16:21	10
Carbon tetrachloride	ND		10	2.7	ug/L			04/29/15 16:21	10
Chlorobenzene	ND		10	7.5	ug/L			04/29/15 16:21	10
Dibromochloromethane	ND		10	3.2	ug/L			04/29/15 16:21	10
Chloroethane	ND	*	10	3.2	ug/L			04/29/15 16:21	10
Chloroform	ND		10	3.4	ug/L			04/29/15 16:21	10
Chloromethane	ND		10	3.5	ug/L			04/29/15 16:21	10
cis-1,2-Dichloroethene	**740**		10	8.1	ug/L			04/29/15 16:21	10
cis-1,3-Dichloropropene	ND		10	3.6	ug/L			04/29/15 16:21	10
Cyclohexane	ND		10	1.8	ug/L			04/29/15 16:21	10
Dichlorodifluoromethane	ND		10	6.8	ug/L			04/29/15 16:21	10

Client Sample ID: ESI-2-042215

Lab Sample ID: 480-79037-2

Date Collected: 04/22/15 15:40

Matrix: Water

Date Received: 04/23/15 11:10

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		10	7.4	ug/L			04/29/15 16:21	10
1,2-Dibromoethane	ND		10	7.3	ug/L			04/29/15 16:21	10
Isopropylbenzene	ND		10	7.9	ug/L			04/29/15 16:21	10
Methyl acetate	ND		25	5.0	ug/L			04/29/15 16:21	10
Methyl tert-butyl ether	ND		10	1.6	ug/L			04/29/15 16:21	10
Methylcyclohexane	ND		10	1.6	ug/L			04/29/15 16:21	10
Methylene Chloride	**7.9**	**J**	10	4.4	ug/L			04/29/15 16:21	10
Styrene	ND		10	7.3	ug/L			04/29/15 16:21	10
Tetrachloroethene	ND		10	3.6	ug/L			04/29/15 16:21	10
Toluene	ND		10	5.1	ug/L			04/29/15 16:21	10
trans-1,2-Dichloroethene	ND		10	9.0	ug/L			04/29/15 16:21	10
trans-1,3-Dichloropropene	ND		10	3.7	ug/L			04/29/15 16:21	10
Trichloroethene	**110**		10	4.6	ug/L			04/29/15 16:21	10
Trichlorofluoromethane	ND		10	8.8	ug/L			04/29/15 16:21	10
Vinyl chloride	**130**		10	9.0	ug/L			04/29/15 16:21	10
Xylenes, Total	ND		20	6.6	ug/L			04/29/15 16:21	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*71 - 126*		*04/29/15 16:21*	*10*
1,2-Dichloroethane-d4 (Surr)	*107*		*66 - 137*		*04/29/15 16:21*	*10*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*04/29/15 16:21*	*10*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**219**	**B**	10.0	4.6	mg/L			05/06/15 18:10	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	**1200**		1.00	1.00	umhos/cm			04/28/15 12:22	1
pH	**7.09**	**HF**	0.100	0.100	SU			04/30/15 14:50	1
Oxygen, Dissolved	**4.9**	**HF**	0.050	0.050	mg/L			04/23/15 14:57	1

Client Sample ID: ESI-3-042115

Lab Sample ID: 480-79037-3

Date Collected: 04/21/15 10:50

Matrix: Water

Date Received: 04/23/15 11:10

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			04/29/15 16:43	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			04/29/15 16:43	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			04/29/15 16:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			04/29/15 16:43	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			04/29/15 16:43	1
1,1-Dichloroethene	ND	*	1.0	0.29	ug/L			04/29/15 16:43	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			04/29/15 16:43	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			04/29/15 16:43	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			04/29/15 16:43	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			04/29/15 16:43	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			04/29/15 16:43	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			04/29/15 16:43	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			04/29/15 16:43	1
2-Butanone (MEK)	ND		10	1.3	ug/L			04/29/15 16:43	1

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Client Sample ID: ESI-3-042115
Date Collected: 04/21/15 10:50
Date Received: 04/23/15 11:10

Lab Sample ID: 480-79037-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	ND		5.0	1.2	ug/L			04/29/15 16:43	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			04/29/15 16:43	1
Acetone	ND		10	3.0	ug/L			04/29/15 16:43	1
Benzene	ND		1.0	0.41	ug/L			04/29/15 16:43	1
Bromodichloromethane	ND		1.0	0.39	ug/L			04/29/15 16:43	1
Bromoform	ND		1.0	0.26	ug/L			04/29/15 16:43	1
Bromomethane	ND		1.0	0.69	ug/L			04/29/15 16:43	1
Carbon disulfide	ND		1.0	0.19	ug/L			04/29/15 16:43	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			04/29/15 16:43	1
Chlorobenzene	ND		1.0	0.75	ug/L			04/29/15 16:43	1
Dibromochloromethane	ND		1.0	0.32	ug/L			04/29/15 16:43	1
Chloroethane	ND	*	1.0	0.32	ug/L			04/29/15 16:43	1
Chloroform	ND		1.0	0.34	ug/L			04/29/15 16:43	1
Chloromethane	ND		1.0	0.35	ug/L			04/29/15 16:43	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			04/29/15 16:43	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			04/29/15 16:43	1
Cyclohexane	ND		1.0	0.18	ug/L			04/29/15 16:43	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			04/29/15 16:43	1
Ethylbenzene	ND		1.0	0.74	ug/L			04/29/15 16:43	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			04/29/15 16:43	1
Isopropylbenzene	ND		1.0	0.79	ug/L			04/29/15 16:43	1
Methyl acetate	ND		2.5	0.50	ug/L			04/29/15 16:43	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			04/29/15 16:43	1
Methylcyclohexane	ND		1.0	0.16	ug/L			04/29/15 16:43	1
Methylene Chloride	ND		1.0	0.44	ug/L			04/29/15 16:43	1
Styrene	ND		1.0	0.73	ug/L			04/29/15 16:43	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/29/15 16:43	1
Toluene	ND		1.0	0.51	ug/L			04/29/15 16:43	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/29/15 16:43	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			04/29/15 16:43	1
Trichloroethene	**2.5**		1.0	0.46	ug/L			04/29/15 16:43	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			04/29/15 16:43	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/29/15 16:43	1
Xylenes, Total	ND		2.0	0.66	ug/L			04/29/15 16:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*71 - 126*		*04/29/15 16:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*66 - 137*		*04/29/15 16:43*	*1*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*		*04/29/15 16:43*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**218**	**B**	10.0	4.6	mg/L			05/06/15 18:10	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	**1160**		1.00	1.00	umhos/cm			04/28/15 12:22	1
pH	**7.12**	**HF**	0.100	0.100	SU			04/28/15 20:20	1
Oxygen, Dissolved	**10.0**	**HF**	0.050	0.050	mg/L			04/23/15 14:57	1

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Client Sample ID: ESI-6-042215
Date Collected: 04/22/15 13:30
Date Received: 04/23/15 11:10

Lab Sample ID: 480-79037-4
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		20	16	ug/L			04/30/15 12:16	20
1,1,2,2-Tetrachloroethane	ND		20	4.2	ug/L			04/30/15 12:16	20
1,1,2-Trichloroethane	ND		20	4.6	ug/L			04/30/15 12:16	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		20	6.2	ug/L			04/30/15 12:16	20
1,1-Dichloroethane	ND		20	7.6	ug/L			04/30/15 12:16	20
1,1-Dichloroethene	ND		20	5.8	ug/L			04/30/15 12:16	20
1,2,4-Trichlorobenzene	ND		20	8.2	ug/L			04/30/15 12:16	20
1,2-Dibromo-3-Chloropropane	ND		20	7.8	ug/L			04/30/15 12:16	20
1,2-Dichlorobenzene	ND		20	16	ug/L			04/30/15 12:16	20
1,2-Dichloroethane	ND		20	4.2	ug/L			04/30/15 12:16	20
1,2-Dichloropropane	ND		20	14	ug/L			04/30/15 12:16	20
1,3-Dichlorobenzene	ND		20	16	ug/L			04/30/15 12:16	20
1,4-Dichlorobenzene	ND		20	17	ug/L			04/30/15 12:16	20
2-Butanone (MEK)	ND		200	26	ug/L			04/30/15 12:16	20
2-Hexanone	ND		100	25	ug/L			04/30/15 12:16	20
4-Methyl-2-pentanone (MIBK)	ND		100	42	ug/L			04/30/15 12:16	20
Acetone	ND		200	60	ug/L			04/30/15 12:16	20
Benzene	ND		20	8.2	ug/L			04/30/15 12:16	20
Bromodichloromethane	ND		20	7.8	ug/L			04/30/15 12:16	20
Bromoform	ND		20	5.2	ug/L			04/30/15 12:16	20
Bromomethane	ND		20	14	ug/L			04/30/15 12:16	20
Carbon disulfide	ND		20	3.8	ug/L			04/30/15 12:16	20
Carbon tetrachloride	ND		20	5.4	ug/L			04/30/15 12:16	20
Chlorobenzene	ND		20	15	ug/L			04/30/15 12:16	20
Dibromochloromethane	ND		20	6.4	ug/L			04/30/15 12:16	20
Chloroethane	ND	*	20	6.4	ug/L			04/30/15 12:16	20
Chloroform	ND		20	6.8	ug/L			04/30/15 12:16	20
Chloromethane	ND		20	7.0	ug/L			04/30/15 12:16	20
cis-1,2-Dichloroethene	**1100**		20	16	ug/L			04/30/15 12:16	20
cis-1,3-Dichloropropene	ND		20	7.2	ug/L			04/30/15 12:16	20
Cyclohexane	ND		20	3.6	ug/L			04/30/15 12:16	20
Dichlorodifluoromethane	ND		20	14	ug/L			04/30/15 12:16	20
Ethylbenzene	ND		20	15	ug/L			04/30/15 12:16	20
1,2-Dibromoethane	ND		20	15	ug/L			04/30/15 12:16	20
Isopropylbenzene	ND		20	16	ug/L			04/30/15 12:16	20
Methyl acetate	ND		50	10	ug/L			04/30/15 12:16	20
Methyl tert-butyl ether	ND		20	3.2	ug/L			04/30/15 12:16	20
Methylcyclohexane	ND		20	3.2	ug/L			04/30/15 12:16	20
Methylene Chloride	**10**	**J**	20	8.8	ug/L			04/30/15 12:16	20
Styrene	ND		20	15	ug/L			04/30/15 12:16	20
Tetrachloroethene	ND		20	7.2	ug/L			04/30/15 12:16	20
Toluene	ND		20	10	ug/L			04/30/15 12:16	20
trans-1,2-Dichloroethene	ND		20	18	ug/L			04/30/15 12:16	20
trans-1,3-Dichloropropene	ND		20	7.4	ug/L			04/30/15 12:16	20
Trichloroethene	**810**		20	9.2	ug/L			04/30/15 12:16	20
Trichlorofluoromethane	ND		20	18	ug/L			04/30/15 12:16	20
Vinyl chloride	**100**	*** ^**	20	18	ug/L			04/30/15 12:16	20
Xylenes, Total	ND		40	13	ug/L			04/30/15 12:16	20

Client Sample ID: ESI-6-042215

Lab Sample ID: 480-79037-4

Date Collected: 04/22/15 13:30

Matrix: Water

Date Received: 04/23/15 11:10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*71 - 126*		*04/30/15 12:16*	*20*
1,2-Dichloroethane-d4 (Surr)	*113*		*66 - 137*		*04/30/15 12:16*	*20*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*04/30/15 12:16*	*20*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**242**	**B**	10.0	4.6	mg/L			05/06/15 18:22	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	**1280**		1.00	1.00	umhos/cm			04/28/15 12:22	1
pH	**7.05**	**HF**	0.100	0.100	SU			04/30/15 14:50	1
Oxygen, Dissolved	**2.7**	**HF**	0.050	0.050	mg/L			04/23/15 14:57	1

Client Sample ID: ESI-7-042115

Lab Sample ID: 480-79037-5

Date Collected: 04/21/15 15:30

Matrix: Water

Date Received: 04/23/15 11:10

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	1.6	ug/L			04/29/15 17:29	2
1,1,2,2-Tetrachloroethane	ND		2.0	0.42	ug/L			04/29/15 17:29	2
1,1,2-Trichloroethane	ND		2.0	0.46	ug/L			04/29/15 17:29	2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.62	ug/L			04/29/15 17:29	2
1,1-Dichloroethane	ND		2.0	0.76	ug/L			04/29/15 17:29	2
1,1-Dichloroethene	ND	*	2.0	0.58	ug/L			04/29/15 17:29	2
1,2,4-Trichlorobenzene	ND		2.0	0.82	ug/L			04/29/15 17:29	2
1,2-Dibromo-3-Chloropropane	ND		2.0	0.78	ug/L			04/29/15 17:29	2
1,2-Dichlorobenzene	ND		2.0	1.6	ug/L			04/29/15 17:29	2
1,2-Dichloroethane	ND		2.0	0.42	ug/L			04/29/15 17:29	2
1,2-Dichloropropane	ND		2.0	1.4	ug/L			04/29/15 17:29	2
1,3-Dichlorobenzene	ND		2.0	1.6	ug/L			04/29/15 17:29	2
1,4-Dichlorobenzene	ND		2.0	1.7	ug/L			04/29/15 17:29	2
2-Butanone (MEK)	ND		20	2.6	ug/L			04/29/15 17:29	2
2-Hexanone	ND		10	2.5	ug/L			04/29/15 17:29	2
4-Methyl-2-pentanone (MIBK)	ND		10	4.2	ug/L			04/29/15 17:29	2
Acetone	ND		20	6.0	ug/L			04/29/15 17:29	2
Benzene	ND		2.0	0.82	ug/L			04/29/15 17:29	2
Bromodichloromethane	ND		2.0	0.78	ug/L			04/29/15 17:29	2
Bromoform	ND		2.0	0.52	ug/L			04/29/15 17:29	2
Bromomethane	ND		2.0	1.4	ug/L			04/29/15 17:29	2
Carbon disulfide	ND		2.0	0.38	ug/L			04/29/15 17:29	2
Carbon tetrachloride	ND		2.0	0.54	ug/L			04/29/15 17:29	2
Chlorobenzene	ND		2.0	1.5	ug/L			04/29/15 17:29	2
Dibromochloromethane	ND		2.0	0.64	ug/L			04/29/15 17:29	2
Chloroethane	ND	*	2.0	0.64	ug/L			04/29/15 17:29	2
Chloroform	ND		2.0	0.68	ug/L			04/29/15 17:29	2
Chloromethane	ND		2.0	0.70	ug/L			04/29/15 17:29	2
cis-1,2-Dichloroethene	**25**		2.0	1.6	ug/L			04/29/15 17:29	2
cis-1,3-Dichloropropene	ND		2.0	0.72	ug/L			04/29/15 17:29	2
Cyclohexane	ND		2.0	0.36	ug/L			04/29/15 17:29	2
Dichlorodifluoromethane	ND		2.0	1.4	ug/L			04/29/15 17:29	2

Client Sample ID: ESI-7-042115

Lab Sample ID: 480-79037-5

Date Collected: 04/21/15 15:30

Matrix: Water

Date Received: 04/23/15 11:10

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		2.0	1.5	ug/L			04/29/15 17:29	2
1,2-Dibromoethane	ND		2.0	1.5	ug/L			04/29/15 17:29	2
Isopropylbenzene	ND		2.0	1.6	ug/L			04/29/15 17:29	2
Methyl acetate	ND		5.0	1.0	ug/L			04/29/15 17:29	2
Methyl tert-butyl ether	ND		2.0	0.32	ug/L			04/29/15 17:29	2
Methylcyclohexane	ND		2.0	0.32	ug/L			04/29/15 17:29	2
Methylene Chloride	ND		2.0	0.88	ug/L			04/29/15 17:29	2
Styrene	ND		2.0	1.5	ug/L			04/29/15 17:29	2
Tetrachloroethene	ND		2.0	0.72	ug/L			04/29/15 17:29	2
Toluene	ND		2.0	1.0	ug/L			04/29/15 17:29	2
trans-1,2-Dichloroethene	ND		2.0	1.8	ug/L			04/29/15 17:29	2
trans-1,3-Dichloropropene	ND		2.0	0.74	ug/L			04/29/15 17:29	2
Trichloroethene	**78**		2.0	0.92	ug/L			04/29/15 17:29	2
Trichlorofluoromethane	ND		2.0	1.8	ug/L			04/29/15 17:29	2
Vinyl chloride	ND		2.0	1.8	ug/L			04/29/15 17:29	2
Xylenes, Total	ND		4.0	1.3	ug/L			04/29/15 17:29	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*71 - 126*		*04/29/15 17:29*	*2*
1,2-Dichloroethane-d4 (Surr)	*115*		*66 - 137*		*04/29/15 17:29*	*2*
4-Bromofluorobenzene (Surr)	*106*		*73 - 120*		*04/29/15 17:29*	*2*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**331**	**B**	10.0	4.6	mg/L			05/06/15 18:22	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	**1450**		1.00	1.00	umhos/cm			04/28/15 12:22	1
pH	**6.88**	**HF**	0.100	0.100	SU			05/01/15 08:45	1
Oxygen, Dissolved	**8.5**	**HF**	0.050	0.050	mg/L			04/23/15 14:57	1

Client Sample ID: ESI-10-042215

Lab Sample ID: 480-79037-6

Date Collected: 04/22/15 12:10

Matrix: Water

Date Received: 04/23/15 11:10

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			04/30/15 12:39	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			04/30/15 12:39	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			04/30/15 12:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			04/30/15 12:39	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			04/30/15 12:39	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			04/30/15 12:39	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			04/30/15 12:39	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			04/30/15 12:39	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			04/30/15 12:39	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			04/30/15 12:39	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			04/30/15 12:39	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			04/30/15 12:39	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			04/30/15 12:39	1
2-Butanone (MEK)	ND		10	1.3	ug/L			04/30/15 12:39	1

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Client Sample ID: ESI-10-042215
Date Collected: 04/22/15 12:10
Date Received: 04/23/15 11:10

Lab Sample ID: 480-79037-6
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	ND		5.0	1.2	ug/L			04/30/15 12:39	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			04/30/15 12:39	1
Acetone	**8.5**	**J**	10	3.0	ug/L			04/30/15 12:39	1
Benzene	ND		1.0	0.41	ug/L			04/30/15 12:39	1
Bromodichloromethane	ND		1.0	0.39	ug/L			04/30/15 12:39	1
Bromoform	**6.1**		1.0	0.26	ug/L			04/30/15 12:39	1
Bromomethane	ND		1.0	0.69	ug/L			04/30/15 12:39	1
Carbon disulfide	ND		1.0	0.19	ug/L			04/30/15 12:39	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			04/30/15 12:39	1
Chlorobenzene	ND		1.0	0.75	ug/L			04/30/15 12:39	1
Dibromochloromethane	ND		1.0	0.32	ug/L			04/30/15 12:39	1
Chloroethane	ND	*	1.0	0.32	ug/L			04/30/15 12:39	1
Chloroform	ND		1.0	0.34	ug/L			04/30/15 12:39	1
Chloromethane	ND		1.0	0.35	ug/L			04/30/15 12:39	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			04/30/15 12:39	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			04/30/15 12:39	1
Cyclohexane	ND		1.0	0.18	ug/L			04/30/15 12:39	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			04/30/15 12:39	1
Ethylbenzene	ND		1.0	0.74	ug/L			04/30/15 12:39	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			04/30/15 12:39	1
Isopropylbenzene	ND		1.0	0.79	ug/L			04/30/15 12:39	1
Methyl acetate	ND		2.5	0.50	ug/L			04/30/15 12:39	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			04/30/15 12:39	1
Methylcyclohexane	ND		1.0	0.16	ug/L			04/30/15 12:39	1
Methylene Chloride	ND		1.0	0.44	ug/L			04/30/15 12:39	1
Styrene	ND		1.0	0.73	ug/L			04/30/15 12:39	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/30/15 12:39	1
Toluene	ND		1.0	0.51	ug/L			04/30/15 12:39	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/30/15 12:39	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			04/30/15 12:39	1
Trichloroethene	ND		1.0	0.46	ug/L			04/30/15 12:39	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			04/30/15 12:39	1
Vinyl chloride	ND	*	1.0	0.90	ug/L			04/30/15 12:39	1
Xylenes, Total	ND		2.0	0.66	ug/L			04/30/15 12:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*71 - 126*		*04/30/15 12:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*66 - 137*		*04/30/15 12:39*	*1*
4-Bromofluorobenzene (Surr)	*105*		*73 - 120*		*04/30/15 12:39*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**164**	**B**	5.0	2.3	mg/L			05/06/15 17:28	5

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	**987**		1.00	1.00	umhos/cm			04/28/15 12:22	1
pH	**6.69**	**HF**	0.100	0.100	SU			05/01/15 08:45	1
Oxygen, Dissolved	**2.9**	**HF**	0.050	0.050	mg/L			04/23/15 14:57	1

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Client Sample ID: ESI-11-042215
Date Collected: 04/22/15 10:40
Date Received: 04/23/15 11:10

Lab Sample ID: 480-79037-7
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			04/29/15 18:15	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			04/29/15 18:15	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			04/29/15 18:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			04/29/15 18:15	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			04/29/15 18:15	1
1,1-Dichloroethene	ND	*	1.0	0.29	ug/L			04/29/15 18:15	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			04/29/15 18:15	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			04/29/15 18:15	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			04/29/15 18:15	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			04/29/15 18:15	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			04/29/15 18:15	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			04/29/15 18:15	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			04/29/15 18:15	1
2-Butanone (MEK)	ND		10	1.3	ug/L			04/29/15 18:15	1
2-Hexanone	ND		5.0	1.2	ug/L			04/29/15 18:15	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			04/29/15 18:15	1
Acetone	**3.9**	**J**	10	3.0	ug/L			04/29/15 18:15	1
Benzene	ND		1.0	0.41	ug/L			04/29/15 18:15	1
Bromodichloromethane	ND		1.0	0.39	ug/L			04/29/15 18:15	1
Bromoform	**5.7**		1.0	0.26	ug/L			04/29/15 18:15	1
Bromomethane	ND		1.0	0.69	ug/L			04/29/15 18:15	1
Carbon disulfide	ND		1.0	0.19	ug/L			04/29/15 18:15	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			04/29/15 18:15	1
Chlorobenzene	ND		1.0	0.75	ug/L			04/29/15 18:15	1
Dibromochloromethane	ND		1.0	0.32	ug/L			04/29/15 18:15	1
Chloroethane	ND	*	1.0	0.32	ug/L			04/29/15 18:15	1
Chloroform	ND		1.0	0.34	ug/L			04/29/15 18:15	1
Chloromethane	ND		1.0	0.35	ug/L			04/29/15 18:15	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			04/29/15 18:15	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			04/29/15 18:15	1
Cyclohexane	ND		1.0	0.18	ug/L			04/29/15 18:15	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			04/29/15 18:15	1
Ethylbenzene	ND		1.0	0.74	ug/L			04/29/15 18:15	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			04/29/15 18:15	1
Isopropylbenzene	ND		1.0	0.79	ug/L			04/29/15 18:15	1
Methyl acetate	ND		2.5	0.50	ug/L			04/29/15 18:15	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			04/29/15 18:15	1
Methylcyclohexane	ND		1.0	0.16	ug/L			04/29/15 18:15	1
Methylene Chloride	ND		1.0	0.44	ug/L			04/29/15 18:15	1
Styrene	ND		1.0	0.73	ug/L			04/29/15 18:15	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/29/15 18:15	1
Toluene	ND		1.0	0.51	ug/L			04/29/15 18:15	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/29/15 18:15	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			04/29/15 18:15	1
Trichloroethene	ND		1.0	0.46	ug/L			04/29/15 18:15	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			04/29/15 18:15	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/29/15 18:15	1
Xylenes, Total	ND		2.0	0.66	ug/L			04/29/15 18:15	1

Client Sample ID: ESI-11-042215

Lab Sample ID: 480-79037-7

Date Collected: 04/22/15 10:40

Matrix: Water

Date Received: 04/23/15 11:10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*102*		*71 - 126*		*04/29/15 18:15*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*66 - 137*		*04/29/15 18:15*	*1*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*04/29/15 18:15*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**165**	**B**	5.0	2.3	mg/L			05/06/15 17:45	5

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	**1020**		1.00	1.00	umhos/cm			04/28/15 12:22	1
pH	**6.76**	**HF**	0.100	0.100	SU			05/01/15 08:45	1
Oxygen, Dissolved	**3.1**	**HF**	0.050	0.050	mg/L			04/23/15 14:57	1

Client Sample ID: ESI-12-042215

Lab Sample ID: 480-79037-8

Date Collected: 04/22/15 09:30

Matrix: Water

Date Received: 04/23/15 11:10

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			04/30/15 13:02	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			04/30/15 13:02	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			04/30/15 13:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			04/30/15 13:02	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			04/30/15 13:02	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			04/30/15 13:02	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			04/30/15 13:02	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			04/30/15 13:02	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			04/30/15 13:02	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			04/30/15 13:02	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			04/30/15 13:02	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			04/30/15 13:02	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			04/30/15 13:02	1
2-Butanone (MEK)	ND		10	1.3	ug/L			04/30/15 13:02	1
2-Hexanone	ND		5.0	1.2	ug/L			04/30/15 13:02	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			04/30/15 13:02	1
Acetone	ND		10	3.0	ug/L			04/30/15 13:02	1
Benzene	ND		1.0	0.41	ug/L			04/30/15 13:02	1
Bromodichloromethane	ND		1.0	0.39	ug/L			04/30/15 13:02	1
Bromoform	**2.0**		1.0	0.26	ug/L			04/30/15 13:02	1
Bromomethane	ND		1.0	0.69	ug/L			04/30/15 13:02	1
Carbon disulfide	ND		1.0	0.19	ug/L			04/30/15 13:02	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			04/30/15 13:02	1
Chlorobenzene	ND		1.0	0.75	ug/L			04/30/15 13:02	1
Dibromochloromethane	ND		1.0	0.32	ug/L			04/30/15 13:02	1
Chloroethane	ND	*	1.0	0.32	ug/L			04/30/15 13:02	1
Chloroform	ND		1.0	0.34	ug/L			04/30/15 13:02	1
Chloromethane	ND		1.0	0.35	ug/L			04/30/15 13:02	1
cis-1,2-Dichloroethene	**1.2**		1.0	0.81	ug/L			04/30/15 13:02	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			04/30/15 13:02	1
Cyclohexane	ND		1.0	0.18	ug/L			04/30/15 13:02	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			04/30/15 13:02	1

Client Sample ID: ESI-12-042215

Lab Sample ID: 480-79037-8

Date Collected: 04/22/15 09:30

Matrix: Water

Date Received: 04/23/15 11:10

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.74	ug/L			04/30/15 13:02	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			04/30/15 13:02	1
Isopropylbenzene	ND		1.0	0.79	ug/L			04/30/15 13:02	1
Methyl acetate	ND		2.5	0.50	ug/L			04/30/15 13:02	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			04/30/15 13:02	1
Methylcyclohexane	ND		1.0	0.16	ug/L			04/30/15 13:02	1
Methylene Chloride	ND		1.0	0.44	ug/L			04/30/15 13:02	1
Styrene	ND		1.0	0.73	ug/L			04/30/15 13:02	1
Tetrachloroethene	**0.54**	**J**	1.0	0.36	ug/L			04/30/15 13:02	1
Toluene	ND		1.0	0.51	ug/L			04/30/15 13:02	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/30/15 13:02	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			04/30/15 13:02	1
Trichloroethene	**10**		1.0	0.46	ug/L			04/30/15 13:02	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			04/30/15 13:02	1
Vinyl chloride	ND	*	1.0	0.90	ug/L			04/30/15 13:02	1
Xylenes, Total	ND		2.0	0.66	ug/L			04/30/15 13:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*71 - 126*		*04/30/15 13:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*66 - 137*		*04/30/15 13:02*	*1*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*04/30/15 13:02*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**176**	**B**	5.0	2.3	mg/L			05/06/15 17:45	5

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	**1040**		1.00	1.00	umhos/cm			04/28/15 12:22	1
pH	**7.04**	**HF**	0.100	0.100	SU			05/01/15 08:45	1
Oxygen, Dissolved	**7.6**	**HF**	0.050	0.050	mg/L			04/23/15 14:57	1

Client Sample ID: ESI-13R-042115

Lab Sample ID: 480-79037-9

Date Collected: 04/21/15 13:40

Matrix: Water

Date Received: 04/23/15 11:10

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			04/29/15 19:01	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			04/29/15 19:01	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			04/29/15 19:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			04/29/15 19:01	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			04/29/15 19:01	1
1,1-Dichloroethene	ND	*	1.0	0.29	ug/L			04/29/15 19:01	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			04/29/15 19:01	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			04/29/15 19:01	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			04/29/15 19:01	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			04/29/15 19:01	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			04/29/15 19:01	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			04/29/15 19:01	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			04/29/15 19:01	1
2-Butanone (MEK)	ND		10	1.3	ug/L			04/29/15 19:01	1

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Client Sample ID: ESI-13R-042115
Date Collected: 04/21/15 13:40
Date Received: 04/23/15 11:10

Lab Sample ID: 480-79037-9
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Hexanone	ND		5.0	1.2	ug/L			04/29/15 19:01	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			04/29/15 19:01	1
Acetone	ND		10	3.0	ug/L			04/29/15 19:01	1
Benzene	ND		1.0	0.41	ug/L			04/29/15 19:01	1
Bromodichloromethane	ND		1.0	0.39	ug/L			04/29/15 19:01	1
Bromoform	ND		1.0	0.26	ug/L			04/29/15 19:01	1
Bromomethane	ND		1.0	0.69	ug/L			04/29/15 19:01	1
Carbon disulfide	ND		1.0	0.19	ug/L			04/29/15 19:01	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			04/29/15 19:01	1
Chlorobenzene	ND		1.0	0.75	ug/L			04/29/15 19:01	1
Dibromochloromethane	ND		1.0	0.32	ug/L			04/29/15 19:01	1
Chloroethane	ND	*	1.0	0.32	ug/L			04/29/15 19:01	1
Chloroform	ND		1.0	0.34	ug/L			04/29/15 19:01	1
Chloromethane	ND		1.0	0.35	ug/L			04/29/15 19:01	1
cis-1,2-Dichloroethene	**18**		1.0	0.81	ug/L			04/29/15 19:01	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			04/29/15 19:01	1
Cyclohexane	ND		1.0	0.18	ug/L			04/29/15 19:01	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			04/29/15 19:01	1
Ethylbenzene	ND		1.0	0.74	ug/L			04/29/15 19:01	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			04/29/15 19:01	1
Isopropylbenzene	ND		1.0	0.79	ug/L			04/29/15 19:01	1
Methyl acetate	ND		2.5	0.50	ug/L			04/29/15 19:01	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			04/29/15 19:01	1
Methylcyclohexane	ND		1.0	0.16	ug/L			04/29/15 19:01	1
Methylene Chloride	ND		1.0	0.44	ug/L			04/29/15 19:01	1
Styrene	ND		1.0	0.73	ug/L			04/29/15 19:01	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/29/15 19:01	1
Toluene	ND		1.0	0.51	ug/L			04/29/15 19:01	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/29/15 19:01	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			04/29/15 19:01	1
Trichloroethene	**46**		1.0	0.46	ug/L			04/29/15 19:01	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			04/29/15 19:01	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/29/15 19:01	1
Xylenes, Total	ND		2.0	0.66	ug/L			04/29/15 19:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*71 - 126*		*04/29/15 19:01*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*66 - 137*		*04/29/15 19:01*	*1*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*		*04/29/15 19:01*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**357**	**B**	10.0	4.6	mg/L			05/06/15 18:29	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	**1530**		1.00	1.00	umhos/cm			04/28/15 12:22	1
pH	**6.66**	**HF**	0.100	0.100	SU			05/01/15 08:45	1
Oxygen, Dissolved	**6.7**	**HF**	0.050	0.050	mg/L			04/23/15 14:57	1

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Client Sample ID: PW-1-042115
Date Collected: 04/21/15 12:30
Date Received: 04/23/15 11:10

Lab Sample ID: 480-79037-10
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			04/29/15 19:24	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			04/29/15 19:24	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			04/29/15 19:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			04/29/15 19:24	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			04/29/15 19:24	1
1,1-Dichloroethene	ND	*	1.0	0.29	ug/L			04/29/15 19:24	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			04/29/15 19:24	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			04/29/15 19:24	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			04/29/15 19:24	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			04/29/15 19:24	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			04/29/15 19:24	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			04/29/15 19:24	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			04/29/15 19:24	1
2-Butanone (MEK)	ND		10	1.3	ug/L			04/29/15 19:24	1
2-Hexanone	ND		5.0	1.2	ug/L			04/29/15 19:24	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			04/29/15 19:24	1
Acetone	ND		10	3.0	ug/L			04/29/15 19:24	1
Benzene	ND		1.0	0.41	ug/L			04/29/15 19:24	1
Bromodichloromethane	ND		1.0	0.39	ug/L			04/29/15 19:24	1
Bromoform	ND		1.0	0.26	ug/L			04/29/15 19:24	1
Bromomethane	ND		1.0	0.69	ug/L			04/29/15 19:24	1
Carbon disulfide	ND		1.0	0.19	ug/L			04/29/15 19:24	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			04/29/15 19:24	1
Chlorobenzene	ND		1.0	0.75	ug/L			04/29/15 19:24	1
Dibromochloromethane	ND		1.0	0.32	ug/L			04/29/15 19:24	1
Chloroethane	ND	*	1.0	0.32	ug/L			04/29/15 19:24	1
Chloroform	ND		1.0	0.34	ug/L			04/29/15 19:24	1
Chloromethane	ND		1.0	0.35	ug/L			04/29/15 19:24	1
cis-1,2-Dichloroethene	**8.8**		1.0	0.81	ug/L			04/29/15 19:24	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			04/29/15 19:24	1
Cyclohexane	ND		1.0	0.18	ug/L			04/29/15 19:24	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			04/29/15 19:24	1
Ethylbenzene	ND		1.0	0.74	ug/L			04/29/15 19:24	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			04/29/15 19:24	1
Isopropylbenzene	ND		1.0	0.79	ug/L			04/29/15 19:24	1
Methyl acetate	ND		2.5	0.50	ug/L			04/29/15 19:24	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			04/29/15 19:24	1
Methylcyclohexane	ND		1.0	0.16	ug/L			04/29/15 19:24	1
Methylene Chloride	ND		1.0	0.44	ug/L			04/29/15 19:24	1
Styrene	ND		1.0	0.73	ug/L			04/29/15 19:24	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/29/15 19:24	1
Toluene	ND		1.0	0.51	ug/L			04/29/15 19:24	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/29/15 19:24	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			04/29/15 19:24	1
Trichloroethene	**3.3**		1.0	0.46	ug/L			04/29/15 19:24	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			04/29/15 19:24	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/29/15 19:24	1
Xylenes, Total	ND		2.0	0.66	ug/L			04/29/15 19:24	1

Client Sample ID: PW-1-042115

Lab Sample ID: 480-79037-10

Date Collected: 04/21/15 12:30

Matrix: Water

Date Received: 04/23/15 11:10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*104*		*71 - 126*		*04/29/15 19:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*66 - 137*		*04/29/15 19:24*	*1*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*		*04/29/15 19:24*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**222**	**B**	5.0	2.3	mg/L			05/06/15 18:29	5

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	**1230**		1.00	1.00	umhos/cm			04/28/15 12:22	1
pH	**6.92**	**HF**	0.100	0.100	SU			04/28/15 20:20	1
Oxygen, Dissolved	**9.5**	**HF**	0.050	0.050	mg/L			04/23/15 14:57	1

Client Sample ID: PW-3-042215

Lab Sample ID: 480-79037-11

Date Collected: 04/22/15 14:40

Matrix: Water

Date Received: 04/23/15 11:10

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			04/29/15 19:46	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			04/29/15 19:46	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			04/29/15 19:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			04/29/15 19:46	1
1,1-Dichloroethane	**4.0**		1.0	0.38	ug/L			04/29/15 19:46	1
1,1-Dichloroethene	ND	*	1.0	0.29	ug/L			04/29/15 19:46	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			04/29/15 19:46	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			04/29/15 19:46	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			04/29/15 19:46	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			04/29/15 19:46	1
1,2-Dichloropropane	**1.2**		1.0	0.72	ug/L			04/29/15 19:46	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			04/29/15 19:46	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			04/29/15 19:46	1
2-Butanone (MEK)	**1.4**	**J**	10	1.3	ug/L			04/29/15 19:46	1
2-Hexanone	ND		5.0	1.2	ug/L			04/29/15 19:46	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			04/29/15 19:46	1
Acetone	**16**		10	3.0	ug/L			04/29/15 19:46	1
Benzene	**0.53**	**J**	1.0	0.41	ug/L			04/29/15 19:46	1
Bromodichloromethane	ND		1.0	0.39	ug/L			04/29/15 19:46	1
Bromoform	ND		1.0	0.26	ug/L			04/29/15 19:46	1
Bromomethane	ND		1.0	0.69	ug/L			04/29/15 19:46	1
Carbon disulfide	**0.38**	**J ^**	1.0	0.19	ug/L			04/29/15 19:46	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			04/29/15 19:46	1
Chlorobenzene	ND		1.0	0.75	ug/L			04/29/15 19:46	1
Dibromochloromethane	ND		1.0	0.32	ug/L			04/29/15 19:46	1
Chloroethane	ND	*	1.0	0.32	ug/L			04/29/15 19:46	1
Chloroform	ND		1.0	0.34	ug/L			04/29/15 19:46	1
Chloromethane	ND		1.0	0.35	ug/L			04/29/15 19:46	1
cis-1,2-Dichloroethene	**1.6**		1.0	0.81	ug/L			04/29/15 19:46	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			04/29/15 19:46	1
Cyclohexane	ND		1.0	0.18	ug/L			04/29/15 19:46	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			04/29/15 19:46	1

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Client Sample ID: PW-3-042215
Date Collected: 04/22/15 14:40
Date Received: 04/23/15 11:10

Lab Sample ID: 480-79037-11
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.74	ug/L			04/29/15 19:46	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			04/29/15 19:46	1
Isopropylbenzene	ND		1.0	0.79	ug/L			04/29/15 19:46	1
Methyl acetate	ND		2.5	0.50	ug/L			04/29/15 19:46	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			04/29/15 19:46	1
Methylcyclohexane	ND		1.0	0.16	ug/L			04/29/15 19:46	1
Methylene Chloride	ND		1.0	0.44	ug/L			04/29/15 19:46	1
Styrene	ND		1.0	0.73	ug/L			04/29/15 19:46	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/29/15 19:46	1
Toluene	**6.9**		1.0	0.51	ug/L			04/29/15 19:46	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/29/15 19:46	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			04/29/15 19:46	1
Trichloroethene	ND		1.0	0.46	ug/L			04/29/15 19:46	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			04/29/15 19:46	1
Vinyl chloride	**120**	**E**	1.0	0.90	ug/L			04/29/15 19:46	1
Xylenes, Total	**1.1**	**J**	2.0	0.66	ug/L			04/29/15 19:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*71 - 126*		*04/29/15 19:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*66 - 137*		*04/29/15 19:46*	*1*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*04/29/15 19:46*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.0	1.6	ug/L			04/30/15 13:25	2
1,1,2,2-Tetrachloroethane	ND		2.0	0.42	ug/L			04/30/15 13:25	2
1,1,2-Trichloroethane	ND		2.0	0.46	ug/L			04/30/15 13:25	2
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.62	ug/L			04/30/15 13:25	2
1,1-Dichloroethane	**3.4**		2.0	0.76	ug/L			04/30/15 13:25	2
1,1-Dichloroethene	ND		2.0	0.58	ug/L			04/30/15 13:25	2
1,2,4-Trichlorobenzene	ND		2.0	0.82	ug/L			04/30/15 13:25	2
1,2-Dibromo-3-Chloropropane	ND		2.0	0.78	ug/L			04/30/15 13:25	2
1,2-Dichlorobenzene	ND		2.0	1.6	ug/L			04/30/15 13:25	2
1,2-Dichloroethane	ND		2.0	0.42	ug/L			04/30/15 13:25	2
1,2-Dichloropropane	ND		2.0	1.4	ug/L			04/30/15 13:25	2
1,3-Dichlorobenzene	ND		2.0	1.6	ug/L			04/30/15 13:25	2
1,4-Dichlorobenzene	ND		2.0	1.7	ug/L			04/30/15 13:25	2
2-Butanone (MEK)	ND		20	2.6	ug/L			04/30/15 13:25	2
2-Hexanone	ND		10	2.5	ug/L			04/30/15 13:25	2
4-Methyl-2-pentanone (MIBK)	ND		10	4.2	ug/L			04/30/15 13:25	2
Acetone	**19**	**J**	20	6.0	ug/L			04/30/15 13:25	2
Benzene	ND		2.0	0.82	ug/L			04/30/15 13:25	2
Bromodichloromethane	ND		2.0	0.78	ug/L			04/30/15 13:25	2
Bromoform	ND		2.0	0.52	ug/L			04/30/15 13:25	2
Bromomethane	ND		2.0	1.4	ug/L			04/30/15 13:25	2
Carbon disulfide	ND		2.0	0.38	ug/L			04/30/15 13:25	2
Carbon tetrachloride	ND		2.0	0.54	ug/L			04/30/15 13:25	2
Chlorobenzene	ND		2.0	1.5	ug/L			04/30/15 13:25	2
Dibromochloromethane	ND		2.0	0.64	ug/L			04/30/15 13:25	2
Chloroethane	ND	*	2.0	0.64	ug/L			04/30/15 13:25	2

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Client Sample ID: PW-3-042215
Date Collected: 04/22/15 14:40
Date Received: 04/23/15 11:10

Lab Sample ID: 480-79037-11
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS - DL (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		2.0	0.68	ug/L			04/30/15 13:25	2
Chloromethane	ND		2.0	0.70	ug/L			04/30/15 13:25	2
cis-1,2-Dichloroethene	ND		2.0	1.6	ug/L			04/30/15 13:25	2
cis-1,3-Dichloropropene	ND		2.0	0.72	ug/L			04/30/15 13:25	2
Cyclohexane	ND		2.0	0.36	ug/L			04/30/15 13:25	2
Dichlorodifluoromethane	ND		2.0	1.4	ug/L			04/30/15 13:25	2
Ethylbenzene	ND		2.0	1.5	ug/L			04/30/15 13:25	2
1,2-Dibromoethane	ND		2.0	1.5	ug/L			04/30/15 13:25	2
Isopropylbenzene	ND		2.0	1.6	ug/L			04/30/15 13:25	2
Methyl acetate	ND		5.0	1.0	ug/L			04/30/15 13:25	2
Methyl tert-butyl ether	ND		2.0	0.32	ug/L			04/30/15 13:25	2
Methylcyclohexane	ND		2.0	0.32	ug/L			04/30/15 13:25	2
Methylene Chloride	**1.7**	**J**	2.0	0.88	ug/L			04/30/15 13:25	2
Styrene	ND		2.0	1.5	ug/L			04/30/15 13:25	2
Tetrachloroethene	ND		2.0	0.72	ug/L			04/30/15 13:25	2
Toluene	**6.5**		2.0	1.0	ug/L			04/30/15 13:25	2
trans-1,2-Dichloroethene	ND		2.0	1.8	ug/L			04/30/15 13:25	2
trans-1,3-Dichloropropene	ND		2.0	0.74	ug/L			04/30/15 13:25	2
Trichloroethene	ND		2.0	0.92	ug/L			04/30/15 13:25	2
Trichlorofluoromethane	ND		2.0	1.8	ug/L			04/30/15 13:25	2
Vinyl chloride	**120**	*** ^**	2.0	1.8	ug/L			04/30/15 13:25	2
Xylenes, Total	ND		4.0	1.3	ug/L			04/30/15 13:25	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*71 - 126*		*04/30/15 13:25*	*2*
1,2-Dichloroethane-d4 (Surr)	*113*		*66 - 137*		*04/30/15 13:25*	*2*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*04/30/15 13:25*	*2*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**281**	**B**	10.0	4.6	mg/L			05/06/15 18:29	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	**1540**		1.00	1.00	umhos/cm			04/28/15 12:22	1
pH	**6.40**	**HF**	0.100	0.100	SU			05/01/15 08:45	1
Oxygen, Dissolved	**0.96**	**HF**	0.050	0.050	mg/L			04/23/15 14:57	1

Surrogate Summary

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		TOL	12DCE	BFB
Lab Sample ID	Client Sample ID	(71-126)	(66-137)	(73-120)
480-79037-1	ESI-1-042115	103	112	102
480-79037-2	ESI-2-042215	100	107	97
480-79037-3	ESI-3-042115	106	114	104
480-79037-4	ESI-6-042215	105	113	103
480-79037-5	ESI-7-042115	106	115	106
480-79037-6	ESI-10-042215	102	111	105
480-79037-7	ESI-11-042215	102	110	97
480-79037-8	ESI-12-042215	102	114	103
480-79037-9	ESI-13R-042115	103	110	97
480-79037-10	PW-1-042115	104	111	101
480-79037-11	PW-3-042215	102	109	102
480-79037-11 - DL	PW-3-042215	100	113	99
LCS 480-239309/5	Lab Control Sample	105	110	99
LCS 480-239602/5	Lab Control Sample	106	100	102
MB 480-239309/7	Method Blank	103	116	102
MB 480-239602/7	Method Blank	102	113	96

Surrogate Legend

TOL = Toluene-d8 (Surr)

12DCE = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-239309/7
Matrix: Water
Analysis Batch: 239309

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			04/29/15 12:56	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			04/29/15 12:56	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			04/29/15 12:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			04/29/15 12:56	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			04/29/15 12:56	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			04/29/15 12:56	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			04/29/15 12:56	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			04/29/15 12:56	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			04/29/15 12:56	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			04/29/15 12:56	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			04/29/15 12:56	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			04/29/15 12:56	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			04/29/15 12:56	1
2-Butanone (MEK)	ND		10	1.3	ug/L			04/29/15 12:56	1
2-Hexanone	ND		5.0	1.2	ug/L			04/29/15 12:56	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			04/29/15 12:56	1
Acetone	ND		10	3.0	ug/L			04/29/15 12:56	1
Benzene	ND		1.0	0.41	ug/L			04/29/15 12:56	1
Bromodichloromethane	ND		1.0	0.39	ug/L			04/29/15 12:56	1
Bromoform	ND		1.0	0.26	ug/L			04/29/15 12:56	1
Bromomethane	ND		1.0	0.69	ug/L			04/29/15 12:56	1
Carbon disulfide	ND		1.0	0.19	ug/L			04/29/15 12:56	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			04/29/15 12:56	1
Chlorobenzene	ND		1.0	0.75	ug/L			04/29/15 12:56	1
Dibromochloromethane	ND		1.0	0.32	ug/L			04/29/15 12:56	1
Chloroethane	ND		1.0	0.32	ug/L			04/29/15 12:56	1
Chloroform	ND		1.0	0.34	ug/L			04/29/15 12:56	1
Chloromethane	ND		1.0	0.35	ug/L			04/29/15 12:56	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			04/29/15 12:56	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			04/29/15 12:56	1
Cyclohexane	ND		1.0	0.18	ug/L			04/29/15 12:56	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			04/29/15 12:56	1
Ethylbenzene	ND		1.0	0.74	ug/L			04/29/15 12:56	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			04/29/15 12:56	1
Isopropylbenzene	ND		1.0	0.79	ug/L			04/29/15 12:56	1
Methyl acetate	ND		2.5	0.50	ug/L			04/29/15 12:56	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			04/29/15 12:56	1
Methylcyclohexane	ND		1.0	0.16	ug/L			04/29/15 12:56	1
Methylene Chloride	ND		1.0	0.44	ug/L			04/29/15 12:56	1
Styrene	ND		1.0	0.73	ug/L			04/29/15 12:56	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/29/15 12:56	1
Toluene	ND		1.0	0.51	ug/L			04/29/15 12:56	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/29/15 12:56	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			04/29/15 12:56	1
Trichloroethene	ND		1.0	0.46	ug/L			04/29/15 12:56	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			04/29/15 12:56	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/29/15 12:56	1
Xylenes, Total	ND		2.0	0.66	ug/L			04/29/15 12:56	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-239309/7
Matrix: Water
Analysis Batch: 239309

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*103*		*71 - 126*		*04/29/15 12:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*66 - 137*		*04/29/15 12:56*	*1*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*04/29/15 12:56*	*1*

Lab Sample ID: LCS 480-239309/5
Matrix: Water
Analysis Batch: 239309

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	25.0	28.3		ug/L		113	71 - 129
1,1-Dichloroethene	25.0	32.3	*	ug/L		129	58 - 121
1,2-Dichlorobenzene	25.0	27.5		ug/L		110	80 - 124
1,2-Dichloroethane	25.0	24.3		ug/L		97	75 - 127
Benzene	25.0	30.5		ug/L		122	71 - 124
Chlorobenzene	25.0	26.6		ug/L		106	72 - 120
cis-1,2-Dichloroethene	25.0	30.7		ug/L		123	74 - 124
Ethylbenzene	25.0	27.8		ug/L		111	77 - 123
Methyl tert-butyl ether	25.0	28.4		ug/L		114	64 - 127
Tetrachloroethene	25.0	26.3		ug/L		105	74 - 122
Toluene	25.0	27.1		ug/L		108	80 - 122
trans-1,2-Dichloroethene	25.0	31.1		ug/L		124	73 - 127
Trichloroethene	25.0	28.8		ug/L		115	74 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	*105*		*71 - 126*
1,2-Dichloroethane-d4 (Surr)	*110*		*66 - 137*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*

Lab Sample ID: MB 480-239602/7
Matrix: Water
Analysis Batch: 239602

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.82	ug/L			04/30/15 11:38	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			04/30/15 11:38	1
1,1,2-Trichloroethane	ND		1.0	0.23	ug/L			04/30/15 11:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.31	ug/L			04/30/15 11:38	1
1,1-Dichloroethane	ND		1.0	0.38	ug/L			04/30/15 11:38	1
1,1-Dichloroethene	ND		1.0	0.29	ug/L			04/30/15 11:38	1
1,2,4-Trichlorobenzene	ND		1.0	0.41	ug/L			04/30/15 11:38	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.39	ug/L			04/30/15 11:38	1
1,2-Dichlorobenzene	ND		1.0	0.79	ug/L			04/30/15 11:38	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			04/30/15 11:38	1
1,2-Dichloropropane	ND		1.0	0.72	ug/L			04/30/15 11:38	1
1,3-Dichlorobenzene	ND		1.0	0.78	ug/L			04/30/15 11:38	1
1,4-Dichlorobenzene	ND		1.0	0.84	ug/L			04/30/15 11:38	1
2-Butanone (MEK)	ND		10	1.3	ug/L			04/30/15 11:38	1
2-Hexanone	ND		5.0	1.2	ug/L			04/30/15 11:38	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-239602/7
Matrix: Water
Analysis Batch: 239602

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			04/30/15 11:38	1
Acetone	ND		10	3.0	ug/L			04/30/15 11:38	1
Benzene	ND		1.0	0.41	ug/L			04/30/15 11:38	1
Bromodichloromethane	ND		1.0	0.39	ug/L			04/30/15 11:38	1
Bromoform	ND		1.0	0.26	ug/L			04/30/15 11:38	1
Bromomethane	ND		1.0	0.69	ug/L			04/30/15 11:38	1
Carbon disulfide	ND		1.0	0.19	ug/L			04/30/15 11:38	1
Carbon tetrachloride	ND		1.0	0.27	ug/L			04/30/15 11:38	1
Chlorobenzene	ND		1.0	0.75	ug/L			04/30/15 11:38	1
Dibromochloromethane	ND		1.0	0.32	ug/L			04/30/15 11:38	1
Chloroethane	ND		1.0	0.32	ug/L			04/30/15 11:38	1
Chloroform	ND		1.0	0.34	ug/L			04/30/15 11:38	1
Chloromethane	ND		1.0	0.35	ug/L			04/30/15 11:38	1
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			04/30/15 11:38	1
cis-1,3-Dichloropropene	ND		1.0	0.36	ug/L			04/30/15 11:38	1
Cyclohexane	ND		1.0	0.18	ug/L			04/30/15 11:38	1
Dichlorodifluoromethane	ND		1.0	0.68	ug/L			04/30/15 11:38	1
Ethylbenzene	ND		1.0	0.74	ug/L			04/30/15 11:38	1
1,2-Dibromoethane	ND		1.0	0.73	ug/L			04/30/15 11:38	1
Isopropylbenzene	ND		1.0	0.79	ug/L			04/30/15 11:38	1
Methyl acetate	ND		2.5	0.50	ug/L			04/30/15 11:38	1
Methyl tert-butyl ether	ND		1.0	0.16	ug/L			04/30/15 11:38	1
Methylcyclohexane	ND		1.0	0.16	ug/L			04/30/15 11:38	1
Methylene Chloride	ND		1.0	0.44	ug/L			04/30/15 11:38	1
Styrene	ND		1.0	0.73	ug/L			04/30/15 11:38	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/30/15 11:38	1
Toluene	ND		1.0	0.51	ug/L			04/30/15 11:38	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/30/15 11:38	1
trans-1,3-Dichloropropene	ND		1.0	0.37	ug/L			04/30/15 11:38	1
Trichloroethene	ND		1.0	0.46	ug/L			04/30/15 11:38	1
Trichlorofluoromethane	ND		1.0	0.88	ug/L			04/30/15 11:38	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/30/15 11:38	1
Xylenes, Total	ND		2.0	0.66	ug/L			04/30/15 11:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*71 - 126*		*04/30/15 11:38*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*66 - 137*		*04/30/15 11:38*	*1*
4-Bromofluorobenzene (Surr)	*96*		*73 - 120*		*04/30/15 11:38*	*1*

Lab Sample ID: LCS 480-239602/5
Matrix: Water
Analysis Batch: 239602

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	25.0	26.7		ug/L		107	71 - 129
1,1-Dichloroethene	25.0	30.3		ug/L		121	58 - 121
1,2-Dichlorobenzene	25.0	28.4		ug/L		114	80 - 124
1,2-Dichloroethane	25.0	23.6		ug/L		94	75 - 127

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-239602/5
Matrix: Water
Analysis Batch: 239602

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	29.2		ug/L		117	71 - 124
Chlorobenzene	25.0	26.7		ug/L		107	72 - 120
cis-1,2-Dichloroethene	25.0	29.5		ug/L		118	74 - 124
Ethylbenzene	25.0	27.9		ug/L		112	77 - 123
Methyl tert-butyl ether	25.0	26.1		ug/L		105	64 - 127
Tetrachloroethene	25.0	27.9		ug/L		112	74 - 122
Toluene	25.0	28.3		ug/L		113	80 - 122
trans-1,2-Dichloroethene	25.0	30.4		ug/L		121	73 - 127
Trichloroethene	25.0	27.7		ug/L		111	74 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*106*		*71 - 126*
1,2-Dichloroethane-d4 (Surr)	*100*		*66 - 137*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*

Method: 9040C - pH

Lab Sample ID: 480-79037-4 DU
Matrix: Water
Analysis Batch: 239775

Client Sample ID: ESI-6-042215
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.05	HF	7.100		SU		0.7	5

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 480-240915/100
Matrix: Water
Analysis Batch: 240915

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.609	J	1.0	0.46	mg/L			05/06/15 17:59	1

Lab Sample ID: MB 480-240915/119
Matrix: Water
Analysis Batch: 240915

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.835	J	1.0	0.46	mg/L			05/06/15 18:17	1

Lab Sample ID: MB 480-240915/128
Matrix: Water
Analysis Batch: 240915

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.468	J	1.0	0.46	mg/L			05/06/15 18:22	1

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: MB 480-240915/59 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 240915

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.804	J	1.0	0.46	mg/L			05/06/15 17:16	1

Lab Sample ID: MB 480-240915/70 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 240915

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.498	J	1.0	0.46	mg/L			05/06/15 17:24	1

Lab Sample ID: MB 480-240915/89 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 240915

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.832	J	1.0	0.46	mg/L			05/06/15 17:37	1

Lab Sample ID: LCS 480-240915/101 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 240915

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.40		mg/L		106	90 - 110

Lab Sample ID: LCS 480-240915/120 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 240915

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.48		mg/L		106	90 - 110

Lab Sample ID: LCS 480-240915/129 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 240915

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.39		mg/L		106	90 - 110

Lab Sample ID: LCS 480-240915/60 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 240915

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.79		mg/L		107	90 - 110

Lab Sample ID: LCS 480-240915/71 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 240915

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.26		mg/L		105	90 - 110

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Lab Sample ID: LCS 480-240915/90
Matrix: Water
Analysis Batch: 240915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.82		mg/L		107	90 - 110

Method: SM 4500 O G - Oxygen, Dissolved

Lab Sample ID: 480-79037-8 DU
Matrix: Water
Analysis Batch: 238200

Client Sample ID: ESI-12-042215
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Oxygen, Dissolved	7.6	HF	7.58		mg/L		0.1	20

GC/MS VOA

Analysis Batch: 239309

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-79037-1	ESI-1-042115	Total/NA	Water	8260C	
480-79037-2	ESI-2-042215	Total/NA	Water	8260C	
480-79037-3	ESI-3-042115	Total/NA	Water	8260C	
480-79037-5	ESI-7-042115	Total/NA	Water	8260C	
480-79037-7	ESI-11-042215	Total/NA	Water	8260C	
480-79037-9	ESI-13R-042115	Total/NA	Water	8260C	
480-79037-10	PW-1-042115	Total/NA	Water	8260C	
480-79037-11	PW-3-042215	Total/NA	Water	8260C	
LCS 480-239309/5	Lab Control Sample	Total/NA	Water	8260C	
MB 480-239309/7	Method Blank	Total/NA	Water	8260C	

Analysis Batch: 239602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-79037-4	ESI-6-042215	Total/NA	Water	8260C	
480-79037-6	ESI-10-042215	Total/NA	Water	8260C	
480-79037-8	ESI-12-042215	Total/NA	Water	8260C	
480-79037-11 - DL	PW-3-042215	Total/NA	Water	8260C	
LCS 480-239602/5	Lab Control Sample	Total/NA	Water	8260C	
MB 480-239602/7	Method Blank	Total/NA	Water	8260C	

General Chemistry

Analysis Batch: 238200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-79037-1	ESI-1-042115	Total/NA	Water	SM 4500 O G	
480-79037-2	ESI-2-042215	Total/NA	Water	SM 4500 O G	
480-79037-3	ESI-3-042115	Total/NA	Water	SM 4500 O G	
480-79037-4	ESI-6-042215	Total/NA	Water	SM 4500 O G	
480-79037-5	ESI-7-042115	Total/NA	Water	SM 4500 O G	
480-79037-6	ESI-10-042215	Total/NA	Water	SM 4500 O G	
480-79037-7	ESI-11-042215	Total/NA	Water	SM 4500 O G	
480-79037-8	ESI-12-042215	Total/NA	Water	SM 4500 O G	
480-79037-8 DU	ESI-12-042215	Total/NA	Water	SM 4500 O G	
480-79037-9	ESI-13R-042115	Total/NA	Water	SM 4500 O G	
480-79037-10	PW-1-042115	Total/NA	Water	SM 4500 O G	
480-79037-11	PW-3-042215	Total/NA	Water	SM 4500 O G	

Analysis Batch: 238987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-79037-3	ESI-3-042115	Total/NA	Water	9040C	
480-79037-10	PW-1-042115	Total/NA	Water	9040C	
LCS 480-238987/1	Lab Control Sample	Total/NA	Water	9040C	

Analysis Batch: 239168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-79037-1	ESI-1-042115	Total/NA	Water	120.1	
480-79037-2	ESI-2-042215	Total/NA	Water	120.1	
480-79037-3	ESI-3-042115	Total/NA	Water	120.1	
480-79037-4	ESI-6-042215	Total/NA	Water	120.1	
480-79037-5	ESI-7-042115	Total/NA	Water	120.1	

General Chemistry (Continued)

Analysis Batch: 239168 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-79037-6	ESI-10-042215	Total/NA	Water	120.1	
480-79037-7	ESI-11-042215	Total/NA	Water	120.1	
480-79037-8	ESI-12-042215	Total/NA	Water	120.1	
480-79037-9	ESI-13R-042115	Total/NA	Water	120.1	
480-79037-10	PW-1-042115	Total/NA	Water	120.1	
480-79037-11	PW-3-042215	Total/NA	Water	120.1	
LCS 480-239168/1	Lab Control Sample	Total/NA	Water	120.1	
LCS 480-239168/23	Lab Control Sample	Total/NA	Water	120.1	

Analysis Batch: 239775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-79037-1	ESI-1-042115	Total/NA	Water	9040C	
480-79037-2	ESI-2-042215	Total/NA	Water	9040C	
480-79037-4	ESI-6-042215	Total/NA	Water	9040C	
480-79037-4 DU	ESI-6-042215	Total/NA	Water	9040C	
LCS 480-239775/1	Lab Control Sample	Total/NA	Water	9040C	

Analysis Batch: 239989

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-79037-5	ESI-7-042115	Total/NA	Water	9040C	
480-79037-6	ESI-10-042215	Total/NA	Water	9040C	
480-79037-7	ESI-11-042215	Total/NA	Water	9040C	
480-79037-8	ESI-12-042215	Total/NA	Water	9040C	
480-79037-9	ESI-13R-042115	Total/NA	Water	9040C	
480-79037-11	PW-3-042215	Total/NA	Water	9040C	
LCS 480-239989/1	Lab Control Sample	Total/NA	Water	9040C	

Analysis Batch: 240915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-79037-1	ESI-1-042115	Total/NA	Water	SM 4500 Cl- E	
480-79037-2	ESI-2-042215	Total/NA	Water	SM 4500 Cl- E	
480-79037-3	ESI-3-042115	Total/NA	Water	SM 4500 Cl- E	
480-79037-4	ESI-6-042215	Total/NA	Water	SM 4500 Cl- E	
480-79037-5	ESI-7-042115	Total/NA	Water	SM 4500 Cl- E	
480-79037-6	ESI-10-042215	Total/NA	Water	SM 4500 Cl- E	
480-79037-7	ESI-11-042215	Total/NA	Water	SM 4500 Cl- E	
480-79037-8	ESI-12-042215	Total/NA	Water	SM 4500 Cl- E	
480-79037-9	ESI-13R-042115	Total/NA	Water	SM 4500 Cl- E	
480-79037-10	PW-1-042115	Total/NA	Water	SM 4500 Cl- E	
480-79037-11	PW-3-042215	Total/NA	Water	SM 4500 Cl- E	
LCS 480-240915/101	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
LCS 480-240915/120	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
LCS 480-240915/129	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
LCS 480-240915/60	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
LCS 480-240915/71	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
LCS 480-240915/90	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MB 480-240915/100	Method Blank	Total/NA	Water	SM 4500 Cl- E	
MB 480-240915/119	Method Blank	Total/NA	Water	SM 4500 Cl- E	
MB 480-240915/128	Method Blank	Total/NA	Water	SM 4500 Cl- E	
MB 480-240915/59	Method Blank	Total/NA	Water	SM 4500 Cl- E	
MB 480-240915/70	Method Blank	Total/NA	Water	SM 4500 Cl- E	

General Chemistry (Continued)

Analysis Batch: 240915 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-240915/89	Method Blank	Total/NA	Water	SM 4500 Cl- E	

Lab Chronicle

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Client Sample ID: ESI-1-042115

Lab Sample ID: 480-79037-1

Date Collected: 04/21/15 14:40

Matrix: Water

Date Received: 04/23/15 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	239309	04/29/15 15:58	LJF	TAL BUF
Total/NA	Analysis	120.1		1	239168	04/28/15 12:22	KMF	TAL BUF
Total/NA	Analysis	9040C		1	239775	04/30/15 14:50	MDL	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		10	240915	05/06/15 18:07	MRF	TAL BUF
Total/NA	Analysis	SM 4500 O G		1	238200	04/23/15 14:57	MDL	TAL BUF

Client Sample ID: ESI-2-042215

Lab Sample ID: 480-79037-2

Date Collected: 04/22/15 15:40

Matrix: Water

Date Received: 04/23/15 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		10	239309	04/29/15 16:21	LJF	TAL BUF
Total/NA	Analysis	120.1		1	239168	04/28/15 12:22	KMF	TAL BUF
Total/NA	Analysis	9040C		1	239775	04/30/15 14:50	MDL	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		10	240915	05/06/15 18:10	MRF	TAL BUF
Total/NA	Analysis	SM 4500 O G		1	238200	04/23/15 14:57	MDL	TAL BUF

Client Sample ID: ESI-3-042115

Lab Sample ID: 480-79037-3

Date Collected: 04/21/15 10:50

Matrix: Water

Date Received: 04/23/15 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	239309	04/29/15 16:43	LJF	TAL BUF
Total/NA	Analysis	120.1		1	239168	04/28/15 12:22	KMF	TAL BUF
Total/NA	Analysis	9040C		1	238987	04/28/15 20:20	LED	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		10	240915	05/06/15 18:10	MRF	TAL BUF
Total/NA	Analysis	SM 4500 O G		1	238200	04/23/15 14:57	MDL	TAL BUF

Client Sample ID: ESI-6-042215

Lab Sample ID: 480-79037-4

Date Collected: 04/22/15 13:30

Matrix: Water

Date Received: 04/23/15 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		20	239602	04/30/15 12:16	LJF	TAL BUF
Total/NA	Analysis	120.1		1	239168	04/28/15 12:22	KMF	TAL BUF
Total/NA	Analysis	9040C		1	239775	04/30/15 14:50	MDL	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		10	240915	05/06/15 18:22	MRF	TAL BUF
Total/NA	Analysis	SM 4500 O G		1	238200	04/23/15 14:57	MDL	TAL BUF

Lab Chronicle

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Client Sample ID: ESI-7-042115

Lab Sample ID: 480-79037-5

Date Collected: 04/21/15 15:30

Matrix: Water

Date Received: 04/23/15 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	239309	04/29/15 17:29	LJF	TAL BUF
Total/NA	Analysis	120.1		1	239168	04/28/15 12:22	KMF	TAL BUF
Total/NA	Analysis	9040C		1	239989	05/01/15 08:45	MDL	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		10	240915	05/06/15 18:22	MRF	TAL BUF
Total/NA	Analysis	SM 4500 O G		1	238200	04/23/15 14:57	MDL	TAL BUF

Client Sample ID: ESI-10-042215

Lab Sample ID: 480-79037-6

Date Collected: 04/22/15 12:10

Matrix: Water

Date Received: 04/23/15 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	239602	04/30/15 12:39	LJF	TAL BUF
Total/NA	Analysis	120.1		1	239168	04/28/15 12:22	KMF	TAL BUF
Total/NA	Analysis	9040C		1	239989	05/01/15 08:45	MDL	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		5	240915	05/06/15 17:28	MRF	TAL BUF
Total/NA	Analysis	SM 4500 O G		1	238200	04/23/15 14:57	MDL	TAL BUF

Client Sample ID: ESI-11-042215

Lab Sample ID: 480-79037-7

Date Collected: 04/22/15 10:40

Matrix: Water

Date Received: 04/23/15 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	239309	04/29/15 18:15	LJF	TAL BUF
Total/NA	Analysis	120.1		1	239168	04/28/15 12:22	KMF	TAL BUF
Total/NA	Analysis	9040C		1	239989	05/01/15 08:45	MDL	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		5	240915	05/06/15 17:45	MRF	TAL BUF
Total/NA	Analysis	SM 4500 O G		1	238200	04/23/15 14:57	MDL	TAL BUF

Client Sample ID: ESI-12-042215

Lab Sample ID: 480-79037-8

Date Collected: 04/22/15 09:30

Matrix: Water

Date Received: 04/23/15 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	239602	04/30/15 13:02	LJF	TAL BUF
Total/NA	Analysis	120.1		1	239168	04/28/15 12:22	KMF	TAL BUF
Total/NA	Analysis	9040C		1	239989	05/01/15 08:45	MDL	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		5	240915	05/06/15 17:45	MRF	TAL BUF
Total/NA	Analysis	SM 4500 O G		1	238200	04/23/15 14:57	MDL	TAL BUF

Lab Chronicle

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Client Sample ID: ESI-13R-042115

Lab Sample ID: 480-79037-9

Date Collected: 04/21/15 13:40

Matrix: Water

Date Received: 04/23/15 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	239309	04/29/15 19:01	LJF	TAL BUF
Total/NA	Analysis	120.1		1	239168	04/28/15 12:22	KMF	TAL BUF
Total/NA	Analysis	9040C		1	239989	05/01/15 08:45	MDL	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		10	240915	05/06/15 18:29	MRF	TAL BUF
Total/NA	Analysis	SM 4500 O G		1	238200	04/23/15 14:57	MDL	TAL BUF

Client Sample ID: PW-1-042115

Lab Sample ID: 480-79037-10

Date Collected: 04/21/15 12:30

Matrix: Water

Date Received: 04/23/15 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	239309	04/29/15 19:24	LJF	TAL BUF
Total/NA	Analysis	120.1		1	239168	04/28/15 12:22	KMF	TAL BUF
Total/NA	Analysis	9040C		1	238987	04/28/15 20:20	LED	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		5	240915	05/06/15 18:29	MRF	TAL BUF
Total/NA	Analysis	SM 4500 O G		1	238200	04/23/15 14:57	MDL	TAL BUF

Client Sample ID: PW-3-042215

Lab Sample ID: 480-79037-11

Date Collected: 04/22/15 14:40

Matrix: Water

Date Received: 04/23/15 11:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	239309	04/29/15 19:46	LJF	TAL BUF
Total/NA	Analysis	8260C	DL	2	239602	04/30/15 13:25	LJF	TAL BUF
Total/NA	Analysis	120.1		1	239168	04/28/15 12:22	KMF	TAL BUF
Total/NA	Analysis	9040C		1	239989	05/01/15 08:45	MDL	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		10	240915	05/06/15 18:29	MRF	TAL BUF
Total/NA	Analysis	SM 4500 O G		1	238200	04/23/15 14:57	MDL	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Certification Summary

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
New York	NELAP	2	10026	03-31-16

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9040C		Water	pH
SM 4500 O G		Water	Oxygen, Dissolved

Method Summary

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
120.1	Conductivity, Specific Conductance	MCAWW	TAL BUF
9040C	pH	SW846	TAL BUF
SM 4500 Cl- E	Chloride, Total	SM	TAL BUF
SM 4500 O G	Oxygen, Dissolved	SM	TAL BUF

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: C&S Engineers, Inc.
Project/Site: Jamestown Container Site

TestAmerica Job ID: 480-79037-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-79037-1	ESI-1-042115	Water	04/21/15 14:40	04/23/15 11:10
480-79037-2	ESI-2-042215	Water	04/22/15 15:40	04/23/15 11:10
480-79037-3	ESI-3-042115	Water	04/21/15 10:50	04/23/15 11:10
480-79037-4	ESI-6-042215	Water	04/22/15 13:30	04/23/15 11:10
480-79037-5	ESI-7-042115	Water	04/21/15 15:30	04/23/15 11:10
480-79037-6	ESI-10-042215	Water	04/22/15 12:10	04/23/15 11:10
480-79037-7	ESI-11-042215	Water	04/22/15 10:40	04/23/15 11:10
480-79037-8	ESI-12-042215	Water	04/22/15 09:30	04/23/15 11:10
480-79037-9	ESI-13R-042115	Water	04/21/15 13:40	04/23/15 11:10
480-79037-10	PW-1-042115	Water	04/21/15 12:30	04/23/15 11:10
480-79037-11	PW-3-042215	Water	04/22/15 14:40	04/23/15 11:10

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

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480-79037 Chain of Custody

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
C&S Engineers, Inc		4/23/15	275998
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
141 Elm Street	716-955-3021		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Buffalo / NY / 14203			
Project Name and Location (State)	**Carrier/Waybill Number**		
Jamestown Container			
Contract/Purchase Order/Quote No.			
N30001001			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Seed	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: Dissolved O2	pH	Specific Cond.	Chloride	Special Instructions/ Conditions of Receipt
ESI-1-042115	4/21/15	14:40		X			X			X			X	X	X	X	
ESI-2-042215	4/22/15	15:40		X			X			X			X	X	X	X	
ESI-3-042115	4/21/15	10:50		X			X			X			X	X	X	X	
ESI-6-042215	4/22/15	13:30		X			X			X			X	X	X	X	
ESI-7-042115	4/21/15	15:30		X			X			X			X	X	X	X	
ESI-10-042215	4/22/15	12:10		X			X			X			X	X	X	X	1) Purple color
ESI-11-042215	4/22/15	10:40		X			X			X			X	X	X	X	1) From potassium
ESI-12-042215	4/22/15	9:30		X			X			X			X	X	X	X	1) permanganate treatment
ESI-13R-042115	4/21/15	13:40		X			X			X			X	X	X	X	1) ($KMnO_4$)
PW-1-042115	4/21/15	12:30		X			X			X			X	X	X	X	
PW-3-042215	4/22/15	14:40		X			X			X			X	X	X	X	

Possible Hazard Identification

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☒ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Cody A Mistat	4/23/15	10:35	1. Received By:	4/23/15	10:35
2. Relinquished By: Jay J Joslin	4/23/15	11:10	2. Received By:	4/23/15	1110
3. Relinquished By	Date	Time	3. Received By	Date	Time

Comments

2 of 1

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Login Sample Receipt Checklist

Client: C&S Engineers, Inc.

Job Number: 480-79037-1

Login Number: 79037

List Source: TestAmerica Buffalo

List Number: 1

Creator: Janish, Carl M

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	C+S
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	