CHA

October 4, 2012

New York State Department of Environmental Conservation
1130 N. Westcott Road
Schenectady, New York 12306
Attn: Mr. Howard Brezner

RE: Remedial Design Work Plan, Phase 2, Operable Unit Number 2, for the Congress Street Facility of SI Group, Inc.
NYSDEC Site Code: HW447007
CHA Project #: 15091.5007.44000

Dear Mr. Brezner:

On behalf of SI Group, enclosed is the Remedial Design Work Plan for Phase 2, Operable Unit Number 2 at the Congress Street Facility of SI Group, Inc. The Remedial Design Work Plan has been prepared in compliance with the Record of Decision that was approved by the New York State Department of Environmental Conservation (NYSDEC) on December 21, 2010.

Electronic copies of the Remedial Design Work Plan are being provided on the enclosed CDs. Hard copies of the Remedial Design Work Plan can be provided upon request.

If you have any questions, please call me at (518) 453-2897.

Sincerely,

Laury Bibighaus

Laury Bibighaus
Associate

cc: Chief
USEPA
NY Section, RCRA Program Branch
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Remedial Design Work Plan

Phase 2
Operable Unit No. 2

SI Group Congress Street Facility
Site No. 447007

CHA Project Number: 15091

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September 2012

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CERTIFICATION

I, the undersigned, certify that I am currently a NYS registered professional engineer and that the Remedial Design Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

For Clough Harbour & Associates LLP:

Richard M. Loewenstein Jr., P.E.
Printed Name of Certifying Engineer

(Professional Seal)

RICHARD M. LOEWENSTEIN JR.
069787

Richard M Loewenstein Jr.
Signature of Certifying Engineer

10/4/12
Date of Certification

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Registration Number

New York
Registration State

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Company

Senior Vice President
Title

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bgs	Below the Ground Surface
CAMP	Community Air Monitoring Plan
cf	Cubic Feet
cfm	Cubic Feet per Minute
CERP	Community & Environmental Response Plan
CHA	Clough Harbour & Associates LLP
DER	Division of Environmental Remediation
EPA	Environmental Protection Agency
FS	Feasibility Study
GAC	Granular Activated Carbon
gpd	Gallon per Day
gpm	Gallon per Minute
HDPE	High Density Polyethylene
ID	Inside Diameter
LNAPL	Light Non-Aqueous Phase Liquid
NCP	National Contingency Plan
NTU	Nephelometric Turbidity Unit
NY	New York
NYCRR	New York Code, Rules & Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operation & Maintenance
OU	Operable Unit
PID	Photoionization Detector
ppm	Parts per Million
PRAP	Proposed Remedial Action Plan
PSI	Pounds Per Square Inch
PVC	Polyvinyl Chloride
RDWP	Remedial Design Work Plan
RI	Remedial Investigation
ROD	Record of Decision
ROI	Radius of Influence
SMP	Site Management Plan
SVE	Soil Vapor Extraction
SVI	Soil Vapor Intrusion
SVOC	Semivolatile Organic Compound
TAGM	Technical & Administrative Guidance Memorandum
US	United States
USACE	United States Army Corps of Engineers
VFD	Variable Frequency Drive
VOC	Volatile Organic Compound

1.0 INTRODUCTION

1.1 BACKGROUND

1.1.1 Site History

SI Group, Inc. (SI Group) owned and operated a chemical manufacturing facility located in Schenectady, New York at Congress Street and Tenth Avenue that is herein referred to as the Congress Street facility (Figure 1). The Congress Street facility (Site) began operations in 1910 and expanded operations over the years by adding buildings and developing the Site. In 1996, the facility was producing wire enamels for electrical insulation, insulating varnishes for electrical motors, industrial enamels, and others resins for coatings and adhesives. In addition, the Site served as the corporate headquarters for SI Group's domestic and international operations.

During the facility's more than 85 years of operation, a number of spills occurred at the Site which resulted in chemical releases to the environment. During the period of 1984 through late 1995, when the facility was still in operation, a number of investigations were completed with the objective of defining the extent of environmental impacts at the Site.

1.1.2 Summary of Past Investigations & Studies

In 1994/1995, SI Group conducted a Remedial Investigation/Feasibility Study (RI/FS) of the Congress Street facility. The results of the RI were presented in the report entitled "Remedial Investigation Report" (RI Report) and dated January 16, 1996. The RI Report was approved by New York State Department of Environmental Conservation (NYSDEC) in their letter dated March 5, 1996.

Based on the results of the RI Report, a FS was conducted that evaluated a number of general response actions, technologies and process options for remediation at the Site. Remedial alternatives for the Site were assembled using the general response actions, technologies and process options retained from the initial screening. In total, seven remedial alternatives were retained for detailed analysis.

The results of the Feasibility Study were presented in the report entitled "Feasibility Study Report" (FS Report) that was submitted to NYSDEC on July 5, 1996. Based on a review of Site conditions and the remedial alternatives, NYSDEC decided to split the remediation of the Site into two separate programs or operable units. The first operable unit (OU1) was established to address the potential migration of contamination off-site. The RI indicated that contaminated groundwater was leaving the Site and discharging to the Cowhorn Creek. To address the migration of contaminated groundwater off-site, NYSDEC approved one of the selected remedial options detailed in the FS Report which would contain and treat the impacted groundwater. The remedial system consisted of a "french drain" with a number of vertical wells to assure capture of contaminated groundwater leaving the Site. The "french drain" is located along the southern end of the Site. The collected groundwater and contaminants consisting of light non-aqueous phase liquid (LNAPL) would be treated either on-Site or off-site. Institutional controls would also be implemented that would involve the continued maintenance of the security fence around the perimeter of the Site and the implementation of appropriate deed restrictions on the property. NYSDEC's determination was recorded in a "Record of Decision" (ROD) that was issued in March 1998. The collection trench and treatment plant are still active at the Site.

The second operable unit (OU2) represented the Site and the contaminated soils that are present on-Site. In 1996, the Congress Street facility was in operation with most of the Site covered in buildings, roads, utilities, and other structures that significantly restricted access to the contaminated soils at that time. It was agreed to with NYSDEC that potential remedial options would be evaluated for the remediation of the contaminated soils. The results of the evaluation were submitted to NYSDEC as an addendum to the Feasibility Study Report in January 1997 (Supplemental FS). Due to the inaccessibility of the soils, SI Group agreed to re-evaluate potential remedial options on an annual basis to determine if new remedial technologies had become available that could be used or if Site conditions had changed that would allow remediation of the Site. Annual updates to the Supplemental FS, which reviewed new remedial technologies and Site conditions, were submitted to NYSDEC until 2007, when work was initiated to update the RI and FS for the Site.

Production at the Site ceased in 1997, and in 2004, SI Group removed all the aboveground process equipment, storage tanks, piping and buildings remaining on-Site except for a small building used to house the groundwater treatment system (Figure 3). With the buildings removed, Site conditions changed, resulting in the on-Site soils becoming accessible and, thereby, allowing investigation of the entire Site and evaluation of potential remedial alternatives to address OU2. A “Work Plan to Update the Remedial Investigation/Feasibility Study” (Work Plan) was prepared in August 2007 describing the work to be performed to update the Remedial Investigation and Supplemental Feasibility Study (RI/FS) for the Congress Street Site. The Work Plan was approved by NYSDEC in a letter dated August 16, 2007.

The field activities to update the RI were conducted in accordance with the approved Work Plan from September 2007 to December 2007. The results of the investigation were presented in the “Updated Remedial Investigation Report” dated February 22, 2008 (Updated RI Report). Comments from the NYSDEC and the New York State Department of Health (NYSDOH) were received on May 29, 2008. SI Group submitted a revised Updated RI Report in response to those comments on September 16, 2008.

In addition to minor revisions to the Updated RI Report, NYSDOH required SI Group to complete a Soil Vapor Intrusion (SVI) Investigation along the property’s boundaries. This investigation was completed in December 2008. Additional comments were received from NYSDEC and NYSDOH on December 8, 2008 based on a preliminary review of the SVI Report. On January 8, 2009, the final Updated RI Report, along with the SVI Report and responses to NYSDEC comments, were submitted to NYSDEC. The Updated RI Report was approved by NYSDEC in a letter dated February 1, 2009.

Based on NYSDEC’s acceptance of the Updated RI, an Updated Supplemental Feasibility Study (FS), dated March 2010, was prepared to identify the remedial alternative, or alternatives, which will address the on-Site environmental conditions associated with the Congress Street Site. The remedial alternative evaluation presented in this Updated Supplemental FS was conducted in accordance with Title 6 of the New York Codes, Rules and Regulations, Part 375 (6 NYCRR Part 375), the National Contingency Plan (NCP), the United States (US) Environmental

Protection Agency (EPA) guidance document entitled “Guidance for Conducting Remedial Investigation and Feasibility Studies Under CERCLA” (EPA/540/G-89/004) (EPA RI/FS Guidance) dated October 1988, the NYSDEC Technical and Administrative Memorandum (TAGM) entitled “Selection of Remedial Actions at Inactive Hazardous Waste Sites” (HWR-90-4030) dated May 15, 1990 (TAGM 4043), and the NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation (DER-10).

The remedial alternatives analysis that was presented in the Updated Supplemental FS was utilized by NYSDEC to prepare a Proposed Remedial Action Plan (PRAP) for OU2. The PRAP was issued for public review and comment on September 15, 2010. As a result of the RI and FS actions, as well as comments received on the PRAP, NYSDEC issued a Record of Decision (ROD) on December 21, 2010 that identified the selected remedy for OU2.

1.1.3 Summary of Remedial Activities

Due to distinct soil and engineering concerns, as well as the nature and distribution of contamination, the Site is divided into two areas for remediation purposes. These areas include the Fill Area and the Process Area, as shown in Figure 2. In general, the selected remedy for the Fill Area included the installation of a permeable cap combined with natural attenuation, whereas the selected remedy for the Process Area included product removal via excavation combined with thermally-enhanced soil vapor extraction followed by bioventing. The selected remedy for each area also required the continued operation of the existing groundwater collection and treatment system (installed to address OU1) to provide continued hydraulic containment of contaminated groundwater. The nature and extent of contamination associated with the Fill Area and the Process Area, as well as a summary of the selected remedial alternative for each area is summarized in the December 2010 NYSDEC ROD, which is included in Appendix B.

Due to the current conditions at the Site and the fact that the selected remedial alternative has the multiple components, the remediation of the Congress Street site was divided into two separate phases. The two-phase approach allowed for initial site preparation activities to be completed in 2011 along with a limited pre-design investigation during the Spring 2012 prior to the design of the more complex portions of the remediation program, including the thermally-enhanced soil vapor extraction (SVE) system.

Details associated with the Phase 1 Site Preparation of OU2 activities are summarized in the *Pre-Design Investigation Report for Phase 2* (CHA, August 2012) and *Construction Completion Report for Phase 1 Site Preparation* (CHA, August 2012) and generally included the following activities:

Preparation of the Process Area

Preparation of the Process Area for the installation of the thermally-enhanced SVE system included the following elements:

- Removal of all concrete slabs and asphalt pavement to the full depth encountered in the limits of work. The concrete slabs and asphalt pavement which extended beyond the limits of work were saw cut to provide a clean, straight edge.
- Removal of all concrete foundations, walls and vertical structures to a depth of 1 foot below existing grade.
- Removal of any obstructions including trees, shrubs, stumps, roots, grass and other vegetation within the work area.
- Removal of a rail siding located within the limits of work.
- Disconnection and sealing or capping all remaining underground sewer lines not servicing the facility.
- Installation of a non-woven geotextile fabric over the existing Site subgrade following removals to serve as a demarcation layer.
- Removal of 481 tons of highly contaminated soil located beneath the concrete slabs and asphalt pavement. These grossly contaminated soils were disposed off-site at a permitted facility.
- Re-use of concrete removed as part of the demolition activities as fill material by crushing on-Site. Reinforcing steel was removed and sent off-site for recycling. All concrete was cleaned of grossly contaminated soil prior to crushing.
- Importation of additional clean fill, as needed, to establish the specified final grades.

- Fertilization, seeding and installation of an erosion control blanket over soil cover areas.

- Disposal of all asphalt removed at an off-site location.

- Installation of a toe drain and sump for the collection of surface water. The sump is connected to the groundwater treatment system.

- Installation of an asphalt cap over the Process Area.

Preparation of the Fill Area

Preparation of the Fill Area for the installation of the permeable cover included the following elements:

- Removal of all concrete slabs, loading dock and other surface obstructions in the limits of work.

- Re-grading of the subgrade adjacent to the groundwater treatment building for the installation of the permeable cover system.

- Disconnection and sealing or capping all remaining underground sewer lines not servicing the facility.

- Removal of less than 1 cubic yard of white colored contaminated soil. The contaminated soil was disposed off-site at a permitted facility based on the characterization of the material.

- Installation of a non-woven geotextile fabric to serve as a demarcation layer.

- Re-use of concrete removed as part of the demolition activities as fill material by crushing on-Site. Reinforcing steel was removed and sent off-site for recycling. All concrete was cleaned of grossly contaminated soil prior to crushing.

- Disposal of all asphalt removed at an off-site location.

- Installation of a stormwater retention basin to the south of the groundwater treatment building.

- Importation of additional clean fill, as needed, to establish the specified grades.

- Fertilization, seeding and installation of an erosion control blanket over soil cover areas.

Fill Area Permeable Cover Installation

Upon completion of the Fill Area preparation activities, a permeable cover consisting of either a gravel cover or a seeded soil cover was installed. In areas where vehicle traffic was anticipated, a twelve (12) inch thick gravel cover was installed over a non-woven geotextile fabric demarcation barrier. All remaining areas of the Fill Area were finished with a non-woven geotextile fabric demarcation barrier and a minimum of twelve (12) inches of soil cover, with the upper six (6) inches of soil consisting of topsoil.

Pre-Design Investigation

A pre-design investigation was conducted to obtain additional Site data for the design of the Phase 2 Remedial Design. Investigation activities included the following:

- Installation of groundwater extraction wells, SVE wells and piezometers.
- Determination of the maximum sustainable rate of groundwater extraction that is achievable to lower the water table in the Treatment Area and increase the treatment depth of the SVE system.
- Determination of the radius of influence (ROI) for the groundwater extraction wells and the SVE wells.
- Installation of soil borings for the collection of soil samples along the rail spur alignment and surrounding Process Area

An electronic copy of the *Pre-Design Investigation Report for Phase 2* is provided in Appendix C.

1.2 PURPOSE OF THE PHASE 2 REMEDIAL DESIGN WORK PLAN

The remedial action(s) for the Site has been selected to eliminate or mitigate the threat that the property presents to public health and the environment in accordance with the ROD issued by the NYSDEC on December 21, 2010. As noted previously, the remediation of the Congress Street site will be completed in two phases. The first phase, already completed in 2011 and 2012, was to prepare the Process Area for installation of the thermally-enhanced SVE system, obtain the necessary design information to complete the design of the treatment system, and install the permeable cap for the Fill Area. The second phase will be the installation and operation of the thermally-enhanced SVE system to treat the volatile organic compounds (VOCs) in Site soil followed by bioventing to promote the natural biodegradation of semi-volatile organic compounds (SVOCs) in Site soil.

The purpose of this Phase 2 Remedial Design Work Plan (RDWP) is to present the detailed design for the in-situ remediation system to be installed within the Process Area.

1.3 SCOPE OF THE PHASE 2 REMEDIAL DESIGN

The Phase 2 detailed design is in accordance with the conceptual design as described in the ROD for OU2. The following are the specific elements of the Phase 2 Remedial Design:

Technical Design Elements:

- Site Preparation Design to allow for the installation of the in-situ remediation system. The Site Preparation design includes control of runoff from the Process Area asphalt cap during installation of design components (sediment control measures) and soil handling procedures.

- Remedial Design Systems:

  1. Soil Vapor Extraction (SVE) Wells to allow for the collection of soil vapors generated during soil heating activities via the conductive soil heating wells. The design includes the installation of SVE wells, associated cyclonic moisture separator, blower system, piping, gauges and a soil vapor treatment system.

  2. Groundwater Extraction to allow for dewatering of the Treatment Area, consisting of Area A and the remaining Rail Siding Area, by approximately 2 feet below static water levels. The design includes the installation of groundwater dewatering wells and associated piping, equipment, pumps, etc.

  3. Conductive Soil Heating Wells to allow for the heating of Treatment Area soils to a temperature between 85 degrees Fahrenheit (ºF) and 95ºF. The design includes the installation of conductive soil heating wells and the associated hot water system, equipment, piping, gauges, insulation, etc.

  4. Bioventing to introduce oxygen to subsurface soils within the Treatment Area to enhance in-situ bioremediation of residual VOCs and SVOCs. The SVE system will be modified to a bioventing system following the removal of VOCs within

the soil to a point where biological activities within the soil are active and the SVE system is no longer efficiently removing VOCs. The design includes modification procedures to the SVE system.

<u>Design Support Elements</u>:

- Site access, security and work zones;
- Stormwater and wastewater management;
- Soil and stormwater management plan;
- Transportation of contaminated materials;
- Community Air Monitoring Plan;
- Community and Environmental Response Plan;
- Site Health and Safety Plan;
- Required permits and other authorizations;
- "As-Built" plans and certification
- Green remediation
- Site Management Plan necessary for operation, maintenance and monitoring activities; procedures and protocols to be implemented after remediation construction has been completed; and
- Schedule for Phase 2 construction elements.

2.0 PHASE 2 REMEDIAL DESIGN

The Phase 2 Remedial Design includes the detailed design for in-situ treatment of the Treatment Area (Area A and the remaining Rail Siding Area) using thermally enhanced SVE and bioventing at the Congress Street Site. The associated design plans and specifications, which are signed and stamped by a professional engineer licensed to practice in New York State, will be used to procure a contractor, install the remediation design components (e.g., wells, treatment systems, etc.), operate the remedial systems in the Treatment Area under monitoring performed by an engineer/scientist, and the dismantling/demobilization of equipment following the completion of the active remediation phase. Abandonment of the well network and off-site deposition of disposable materials will be addressed in the Site Management Plan (SMP).

The Phase 2 Remedial Design for the Process Area is shown in the design drawings enclosed in Appendix A. Construction documents will be prepared subsequent to the NYSDEC's approval of the Work Plan and prior to soliciting bids from contractors. Support calculations for design basis are located in Appendix D. The design for the Phase 2 Remedial Design activities to be completed in the Treatment Area includes the following major components, which will be discussed in more detail in subsequent sections of the RDWP:

- Installation of a soil vapor extraction (SVE) system to remove the most significant VOC contaminants within the Treatment Area. The SVE system will eventually reversed to inject air into the Treatment Area as a bioventing system and enhance the natural biodegradation of residual VOCs and the SVOCs within the Treatment Area.

- Installation of a groundwater extraction well system to lower the groundwater table within the Treatment Area to enhance the operation of the SVE system in the capillary fringe area immediately above the static water level and within the zone of water table fluctuation.

- Installation of a conductive heating system to heat the subsurface soil temperature to a level that will both enhance the efficiency of the SVE system by increasing the volatilization of VOC contaminants, increase efficiency of the SVE system by evaporating moisture in the soil pore space, and enhancing natural biodegradation rates within the Treatment Area.

- Management and off-site disposal of soil cuttings for the subsurface well installation. Additionally, contaminated water generated from well development and/or decontamination activities will be managed and treated on-Site.

Installation and operation of the Remedial Design components will occur on a phased approach as shown on the Drawings in Appendix A. It is anticipated that the Remedial Design components will be installed within two (2) to three (3) years of initiation of construction. Upon completion of each phase, that portion of the in-situ Remedial Design will be placed into operation per the Site Management Plan. It is anticipated that the in-situ Remedial Design components will not operate during the winter months due to freeze/thaw issues. The system will likely operate from March through December each year, but will be adjusted based on field conditions encountered.

2.1 SITE PREPARATION

2.1.1 Stormwater Pollution Prevention

Prior to initiating any site work, sediment and erosion control measures will be implemented, as necessary, to control stormwater runoff from the Process Area asphalt cap. Currently, all work associated with the Phase 2 Remedial Design will be conducted on the asphalt cap. While a number of holes will be cored through the pavement as part of the remedial construction, the area of the disturbance will be minimal and the pavement will patched around each well location. Additionally, the silt fence installed along the down-gradient side of the Site installed as part of the Phase 1 Site preparation activities will be maintained throughout the Phase 2 intrusive activities.

In the instance where land disturbance is necessary, such as those required for subsurface utility installations, temporary seeding or mulching will be used in areas which will be exposed for more than fourteen (14) days. Permanent stabilization will be performed as soon as possible after completion of work. After the entire project area is stabilized, the accumulated sediment shall be removed and managed in compliance with the Soil and Stormwater Management Plan enclosed in Appendix E. Erosion control devices will remain in place until disturbed areas are permanently stabilized. The soil stabilization measures selected will be in conformance with the most current version of the technical standard, New York Standards and Specifications for Erosion and Sediment Control.

2.1.2 Monitoring Well Abandonment

There are a number of existing monitoring wells located within the Treatment Area, and where possible, these wells will be protected from disturbance during the remedial activities. However, based upon the number of wells that will be installed for the Phase 2 remediation activities, some existing monitoring well locations are in conflict with the SVE wells or the conductive heating wells, and therefore, will require abandonment. All wells will be abandoned in accordance with NYSDEC's *CP-43: Groundwater Monitoring Well Decommissioning Policy*.

2.1.3 Utility Services

A number of utilities are required to implement the proposed Phase 2 remediation activities, including the following:

- Electric service: Most of the equipment utilized for the remediation will require electrical service to operate, including items such as the blower for the SVE system, the air compressor system associated with the groundwater extraction system, the circulation pumps in the conductive heating system, transfer pumps, controls for all systems, lighting inside the equipment enclosures, etc.

- Natural gas service: The boilers used for the conductive heating system will be operated on natural gas.

- Water service: A potable water service will be required to supply water for decontamination activities, potentially as part of the heating fluid in the conductive heating system, etc.

The electrical service will be installed overhead with the installation of new utility poles as required and all other utilities will be installed in the subsurface. Prior to issuing the design documents for the solicitation of bids, coordination with the utility owners will be completed. Specifically, CHA will coordinate obtaining a water service with the City of Schenectady Water Department and National Grid for the electrical and natural gas services. To minimize the disturbance to the Site, the subsurface utility services will likely be installed via directional drilling.

2.2 ENHANCED SOIL VAPOR EXTRACTION SYSTEM

As previously indicated, thermally-enhanced SVE followed by bioventing to promote biodegradation was selected as the remedial design technology for the Treatment Area. In order to design the SVE system, Site specific information was obtained as part of the Phase 1 Pre-Design Investigation completed in the Spring of 2012. As part of the pre-design investigation a series of SVE wells were installed within the Treatment Area. Information obtained from the Phase 1 Pre-Design Investigation is summarized in subsequent sections along with remedial design details for the SVE wells and treatment system. An electronic copy of the *Pre-Design Investigation Report* is contained in Appendix C.

SVE is an in-situ remediation technique that uses induced air flow via a vacuum system to extract volatile and some semivolatile organic contaminants from the vadose zone soils. The extracted air stream is then treated to remove the contaminants prior to discharge to the atmosphere. For this Site, the system will also include an existing asphalt cap over the Treatment Area and air vents that can provide makeup air so that the SVE system can maintain sufficient air flow.

Dual phase extraction is the use of two systems within the same well to withdraw contaminants from the soil, thereby reducing the number of extraction points within the Treatment Area. For this Site the dual phase extraction systems include the SVE and groundwater dewatering systems within the same well. Some dual phase extraction systems use a single pumping system to remove the soil vapor and groundwater; however, two separate pumping systems will be used for the dual phase extract system at the Congress Street site. As discussed in more detail in subsequent systems, a “two pump” has been designed for this Site, including a series of groundwater extraction pumps and a separate blower system to extract the soil vapors.

2.2.1 Soil Vapor Extraction Pre-Design Investigation

The Pre-Design Investigation involved the installation of three vapor extraction wells (SVE 1 through SVE 3) to a depth between 15 and 20 feet below the ground surface (bgs). Adjacent to the vapor extraction wells, vacuum well clusters were installed to measure the response to lowering the pressure in the vapor extraction wells. Vacuum well clusters were installed at distances of 5 and 10 feet from the vapor extraction well. Each vacuum well cluster consisted of three wells installed in a single borehole creating a shallow, intermediate and deep monitoring point.

SVE testing was conducted using a mobile pilot test unit consisting of a regenerative blower (7.5 horsepower) in conjunction with a cyclonic knockout unit, a moisture separator with transfer pump, and two, 55-gallon, vapor phase carbon vessels connected in series. The pilot test unit was connected to each well head and the blower was operated at three different rates of withdrawal for a total of five to six hours. The three rates of withdrawal were maintained for approximately one to two hours each in order to ensure that the system of wells was able to maintain a steady reduced pressure and collection of soil vapor was established.

Real time monitoring of the transducer data was not available with the equipment utilized for the testing. The analog pressure gauge installed at the SVE well was used to determine the amount of pressure reduction applied and verify that the pressure remained steady at the test well. The wells involved in the testing and monitoring remained sealed during the testing. The data collected during the test was downloaded from the transducers following completion of the test. The results of the testing was not available until after the testing was completed, and therefore, the measured pressure effect in the soil could not be used as an indicator concerning the effect of decreasing the pressure in the test well, or if the effect of the testing had reached a particular distance from the test well. These limitations were managed by running the test for a significant amount of time at each pressure, and using the minimum pressure available as the final testing step.

The pressure transducers operated within the range of pressure used during the test, which in this case was -60 inches of water column. The testing was conducted at three steps of pressure reduction, -20 inches of water column, -35 inches of water column, and -50 inches of water column. The test system was able to achieve and maintain the reduction in pressure attempted to complete the testing. An Omega HHF42 hot wire anemometer was utilized to collect periodic velocity readings in the 2-inch diameter polyvinyl chloride (PVC) pipe connecting the test well to the blower. Readings collected were between 400 and 1,040 feet per minute, with an average of 700 feet per minute which is equivalent to a flow rate of approximately 15 cubic feet per minute (cfm).

2.2.2 SVE System Design Parameters

2.2.2.1 Extraction Well Spacing

Utilizing the results of the Pre-Design Investigation for the field SVE testing, it was first required to determine the maximum radius of influence for the SVE system. In the 1990s, the EPA had designed a program for SVE design based on a paper by P.C. Johnson that was published in the Spring 1990 issue of *Ground Water Monitoring Review* and is referenced in the calculations. This paper was used in the determination of the ROI for the Treatment Area. The radius of influence for the SVE system is the distance at which the induced vacuum from the SVE would create a minimum vacuum of 0.1 inH_2O.

During the pre-design investigation, induced vacuum at the extraction well was compared against vacuum observed in monitoring wells located 5 and 10 feet away from the extraction well. Comparisons of the collected data were used to calculate the radii of influence. The ROI for each monitoring well observation was plotted on a chart against the induced vacuum at the extraction well and each data set was fit with a best-fit exponential curve. After the trend lines were established, the ROI at -80 inH_2O was estimated from the trend lines for each data set. The estimated ROI were averaged to determine that the maximum ROI for the SVE system at 15.7 feet, which is greater than the 15-foot ROI for the groundwater dewatering system. As discussed in Section 2.3.2, the ROI of the SVE system is greater than that of the groundwater dewatering system. Thus, the spacing for the groundwater extraction system may be duplicated with the SVE system and dual phase extraction is feasible.

2.2.2.2 SVE System Air Flow Rate

The maximum air flow of the wells was determined using the United States Army Corps of Engineers (USACE) reference on Soil Vapor Extraction and Bioventing (EM 1110-1-4001). Frist, to determine the maximum system flow, the maximum volumetric flow at each well was determined. Second, the maximum flow rate per well was expanded to determine the maximum flow rate of the system. Lastly, the maximum air flow rate was used to choose an appropriate blower for the system.

The maximum flow rate at the individual well is limited by the induced vacuum at the extraction well of -80 inH_2O, the nodal point of 15 feet as determined by the groundwater dewatering system and a minimum required vacuum of 0.1 inH_2O at the nodal point.

The pore volume is the volume of the air space within the soil area to be treated and is directly related to soil saturation and the porosity of the soil. At this Site, the total Treatment Area pore volume is approximately 70,000 cubic feet (cf). The system flow required, at existing soil conditions, to exchange one pore volume over one day is 49 cfm and is equivalent to approximately 0.6 cfm at each of the 81 individual SVE wells.

Determining the maximum flow rate at the wells required establishing parameters for fluid flow through the soil and the volume of soil around the well. The intrinsic permeability of the soil is required and is based on the hydraulic permeability. The hydraulic permeability was determined during the pump tests conducted during the pre-design investigation completed at the Site. The relation of hydraulic permeability to intrinsic permeability is detailed in Appendix D. In addition, the evaluation requires the dynamic viscosity of air. The air is assumed to be at standard temperature and atmospheric conditions during SVE extraction. The temperature increase due to the conductive soil heating will increase the dynamic viscosity from $3.82x10^{-7}$ lb-s/ft by 3.1% and not have a significant impact on the maximum flow at the well. Lastly, the nodal point determined from the groundwater system of 15 feet was defined as the end of the zone of interest for the calculation to maintain a minimum pressure of 0.1 inH_2O vacuum. These parameters, combined with the soil and site parameters required for pore volume determination and the radius of the 4-inch well were used to determine the maximum flow rate at the well to be 6.2 cfm per well, resulting in an approximate maximum system flow rate for 81 wells as 500 cfm, which represents approximately of 10.4 pore volumes per day.

The studies completed by USACE show air flow rates resulting in the exchange of up to 10 pore volumes per day will result in the treatment of an area within 2 years. As the system is operated, the moisture content of the soil in the vadose zone will decrease due to the increased evaporation of the water contained in the soil due to the increased air flow from the SVE system and the temperature increase from the conductive soil heating, which will result in a larger system pore volume. Though the pore exchanges per day will decrease during system operations, the change in the number of pore volumes being withdrawn should not be significant. Therefore, the parameters to size the blower are the required vacuum of -80 inH_2O and maximum volumetric flow rate of 500 cfm. As a second approach, the estimated flow rate to extract one pore volume from each well is 0.6 cfm/well. To extract 10 pore volumes per day from 81 extraction wells, a minimum of 486 cfm would be required. Thus, the flow rate of 500 cfm was the selected design value for the SVE system.

2.2.3 System Components

2.2.3.1 SVE Wells

As previously indicated, dual phase extraction wells will be installed throughout the Treatment area for the removal of soil vapor and groundwater, as shown on the details on Drawing D-02 in Appendix A. While the groundwater extraction system will be discussed in further detail in Section 2.3, the well construction details for the SVE system and groundwater extraction system are identical. The only difference between the wells is that those wells utilized in the groundwater extraction system will also be equipped with a pneumatic pump to evacuate groundwater from the same well, thus making such locations classified as dual phase extraction wells.

There are eighty-one (81) total SVE wells including sixty four (64) dual phase extraction and seventeen (17) SVE wells that will be installed within the Treatment Area as shown on the Drawings. Each extraction well will be installed at either 20- or 30-foot on center intervals based on the groundwater extraction requirements outlined in Section 2.3.2. The majority of the 20 foot-on-center wells will be in the northeast side of the Site, up-gradient of the contamination to reduce the amount of groundwater entering the Site to maintain the depressed groundwater table. The 30 foot-on-center wells are typically located in the center of the Treatment Area and represent the maximum radius of influence for the dual phase extraction system. Each borehole will be advanced to a maximum depth of 22 feet bgs using sonic drilling methods.

Prior to commencing with the drilling activities at each well, a 4-foot by 8-foot sheet of plywood with a pre-drilled hole in the center will be installed around the well to minimize the potential for the soil cuttings to come into contact with the existing asphalt surface. Following the completion of each borehole, the cuttings will be collected and placed into a covered roll-off container for characterization and off-site disposal. By avoiding contact of the soil cuttings onto the asphalt surface, the asphalt will not be contaminated, and thus, any stormwater runoff from the asphalt pad will not need to be collected and treated.

Each extraction well will be constructed using a fifteen (15)-foot section of factory slotted, four (4)-inch diameter, 0.010-inch (10 slot) polyvinyl chloride (PVC) well screen and the requisite length of flush threaded 4-inch diameter PVC riser. The well screens will be set at an interval of five (5) to twenty (20) feet bgs and the PVC riser will extend approximately one (1) to two (2) feet above ground surface. Additionally, a two (2)-foot flush threaded PVC sump will be installed beneath each well screen at an interval of twenty (20) to twenty-two (22) feet bgs. The sump will allow for some accumulation of silt at the bottom without interference to the pump, but will also allow the pump to be set partially below the screened interval to facilitate additional drawdown of the groundwater table. All well installation materials will be new and will remain covered or sealed until installation.

A sand pack consisting of No. 0 Morie sand will be installed within the annular space between the well screen and the borehole wall from the bottom of the borehole to two (2) feet above the top of the well screen. A 2.5-foot thick bentonite seal will then be placed above the sand pack. The remaining top 6-inches of the annulus will be sealed at the surface with asphalt cold patch to keep the hydrated bentonite material off of the surface of existing asphalt pad.

All of the 64 dual phase extraction wells will be properly developed in order to remove suspended fines. Well development is not required for the 17 SVE wells unless it is determined that pumps will be added to those wells after field observations of the groundwater table depression, in which case the wells would be developed as outlined. The well development will be completed as soon as possible after installation; however, no development will be conducted until the well bentonite surface seal has had sufficient time to hydrate. Well development will be conducted with several cycles of surging and pumping, using a PVC surge block and a submersible pump and/or air lift pumping methods. Every effort will be made to minimize the introduction of water into the formation during development. All water generated during the well development process will be collected and pump into a temporary holding tank. The decanted water will be pumped to the on-Site groundwater treatment plant for treatment and the remaining sediment will be characterized for off-site disposal. Well development will continue until it has been determined in the field that the turbidity level is 50 Nephelometric turbidity units (NTUs) or less for a maximum period of two (2) hours.

Before drilling at the initial location and after drilling at the last location, the drilling rig and all drilling equipment will be cleaned in accordance with the protocols established in the Health and Safety Plan included as Appendix F.

2.2.3.2 SVE Piping Network

The SVE wells will be connected to a PVC piping network and header system that will be connected to the suction side of a blower system. The induced vacuum from the blower will create air flow towards the SVE wells where it will be extracted and treated on-Site. The proposed piping network is shown on the Drawings and has been sized to minimize pressure losses within the system. To avoid disturbance to Site soils and the existing asphalt pad, all of the piping network will be located above grade. All of the pipes will be pitched toward the SVE wells to promote drainage of condensate by supporting the piping on height adjustable pipe pedestals/stands. Most condensate is expected to form within a relatively short distance after the air stream passes from the well head in to the surface piping network due to the differential between the subsurface and atmospheric temperatures.

Each SVE well will be equipped at the surface with a ball valve and vacuum gauge so that the flow and vacuum applied at each well can be adjusted in the field to balance the system and control the VOC loading the carbon treatment system. To monitor the VOC loading at each SVE well, a sample port will be included at each well head to facilitate the collection of the grab samples for field analysis with a photoionization detector (PID).

2.2.3.3 Blower System

The blower system will provide the induced vacuum within the system. As previously indicated, the blower was selected to meet the design criteria of 500 cfm of air flow at -80 inH_2O. However, since the maximum flow rate will not be required throughout the entire remediation phase, a positive displacement blower equipped with a variable frequency drive (VFD) to throttle operation has been selected. Regenerative blowers were considered first for this application given the relatively low air flow rates and vacuum requirements; however, the positive displacement blower was ultimately selected to maximize the energy savings that can be realized by using a VFD to control the system.

The SVE system will be brought online in phases. During startup, the blower will be operated at a reduced capacity and the VFD will reduce the power consumption of the system while the full capacity of the blower is not required. The full capacity of the blower will also not be required as certain sections of the Site are remediated and some zones of the SVE system are shutdown. The use of a VFD will provide flexibility of the blower system throughout the remediation activities.

While most condensate is expected to form in relatively close proximity to the wellheads, some moisture could still reach the blower system. Therefore, the vapor extracted from the SVE wells will first pass through a cyclonic moisture separator before the blower system to ensure that the blower system is not damaged. The condensate collected in the separator will be discharged to the temporary polyethylene equalization tank (discussed further in Section 2.3.3.2) via a small transfer pump.

Finally, flexible expansion joints will be placed on both the inlet and discharge sides of the blower to reduce the potential for pipe damage resulting from vibration and/or thermal expansion/contraction in the rigid piping system.

2.2.3.4 Air Flow Control

One concern in the design of a SVE system is short-circuiting where air in the atmosphere gets pulled into the extraction wells preferentially rather than the soil vapor in the pore spaces of the soil. Short-circuiting is generally reduced by placing some sort of cap or cover system over the treatment zone. At the Congress Street site, there is already an existing asphalt pad over the Treatment Area that will serve this purpose. However, given that the Treatment Area is covered with an asphalt pad, it will be necessary to provide an air intake system to allow the SVE system to draw the desired air flow from each well. Rather than installing a separate system of air intake wells, some of the SVE wells will be used periodically as air intake wells. This will be accomplished by closing the valve to the vacuum system at the wellhead and opening the 1-inch valve on top of the wellhead to the atmosphere.

The number of wellheads opened to the atmosphere at one time will be based upon a balance of flow rates and contaminant loading, which is expected to vary throughout the treatment area. Initially, the VOC loading rates to the SVE system will be high and the flow rates will be adjusted in the field to minimize the potential of exceeding the adsorption capacity of the carbon treatment system. The wells that are used for air intake will be alternated as certain areas show declining levels of VOCs removal.

2.2.3.5 Air Treatment System

The exhaust from the blower system will be sent to a granular active carbon (GAC) treatment system prior to discharge to the atmosphere. The contaminant loading on the carbon filter system is controlled by the capacity of the carbon filter units. The size of the carbon filter unit is based on the maximum flow rate through the filter and the potential amount of contaminants to be removed. The minimum requirements at this Site are met by Calgon Carbon Vapor Phase Adsorption Equipment units such as the Protect^{TM} V Series which has a maximum flow rate of up to 750 cfm per the manufacturer specifications. The SVE extraction rates will be managed in the field based on recovery of contaminants during start-up and based on field measurements as outlined in the Site Management Plan.

During the Remedial Investigation and Feasibility Study, soil samples were taken to determine contaminant concentrations. The concentration of the contaminants were averaged together to develop an approximate total tonnage of VOCs in the soil at the Site. The total amount of VOCs was determined to be approximately 16,000 pounds as reported in the Updated Feasibility Study and inclusion of the rail siding area. To remove the VOCs within 2 years, operating 10 months per year, the system will have to remove on average approximately 30 pounds of VOCs per day.

Based upon the document *Activated Carbon Adsorption for Treatment of VOC Emissions*, prepared by CARBTROL Corporation in May of 2011, the relative adsorption rate for the primary VOC contaminants of concern at the Site is approximately 20 percent. Thus, to remove 16,000 pound of VOCs, a total of approximately 80,000 pounds of GAC will be required for the project. With 5,000 pounds of carbon is placed into each GAC vessel, a total of 16 vessels would be required. Assuming two GAC vessels are in active use at all times, a total of 8 GAC change outs or reactivations will be required during the project, which over the course of two years of operation should result in approximately one change out per quarter.

As indicated on the Drawings, the design includes a total of three GAC vessels on-Site at all times. These vessels will be described as a lead, lag or standby vessel. Specifically, the “lead” vessel will be the primary treatment vessel to remove the VOCs from the air stream while the “lag” vessel is backup system in case there is some breakthrough in the “lead” vessel. As described in the SMP, sample ports will be installed after the lead vessel so that grab samples can be analyzed for VOCs in the field with a PID to monitor for such breakthrough and know when it is time to take the lead vessel offline. When the lead vessel’s adsorption capacity is depleted, the lag vessel will then become the lead vessel and the standby vessel will be placed into the lag position. Finally removed from the lead vessel and new or reactivated GAC will be placed into the vessel which will become the new standby vessel.

All vessels will be connected using flexible hose, the spent carbon will be s and camlock connections to minimize the effort to reconfigure the GAC vessels. The discharge stack will be constructed of rigid pipe and will be connected to the equipment enclosure (e.g. intermodal container). The point of discharge will be at a minimum height of ten (10) feet above the ground surface to ensure that it is above all equipment on-Site and the breathing zone of on-Site personnel.

2.2.3.6 Equipment Enclosure

The cyclonic moisture separator and blower system will be installed within a temporary enclosure (e.g. intermodal container) located along the northern side of the Treatment Area as shown on the Drawings. The enclosure will have a Class 1, Division 2 hazardous area rating.

2.3 DEWATERING BY GROUNDWATER EXTRACTION

In order to facilitate effective SVE, drawdown of the groundwater table within the Treatment Area by approximately two (2) feet was determined to be necessary to ensure efficient VOC removal in the capillary fringe area. Key information associated with the groundwater extraction system was obtained during implementation of the pre-design investigation specified in the Phase 1 Work Plan during the Spring of 2012. As part of the pre-design investigation a series of dewatering wells, monitoring wells and piezometers were installed within the Treatment Area. Information obtained from the Phase 1 Pre-Design Investigation is summarized in subsequent sections along with remedial design details for the groundwater extraction wells, the pumping system and groundwater management. An electronic copy of the *Pre-Design Investigation Report* is contained in Appendix C.

2.3.1 Groundwater Extraction Pre-Design Investigation

The Pre-Design Investigation relative to the depression of groundwater in the Process Area involved the installation of two test well arrays. At each test array, one well was pumped while the groundwater elevations in the surrounding wells were monitored. During development activities associated with these wells, it was determined that the maximum sustainable pumping rate of the extraction wells was approximately 0.75 gallons per minute (gpm). The depth to groundwater was measured in the monitoring wells surrounding the extraction well and stabilized after a short period of pumping, approximately 90 minutes.

Groundwater extraction design plans were adjusted from those provided in the *Phase 1 Site Remedial Design Work Plan* in response to these observations. The necessity of conducting step rate and long duration pumping events was determined to be unnecessary based upon actual field conditions encountered. The goal of the groundwater extraction testing was to provide enough drawdown to expose contaminated soil that is within the zone of typical static groundwater elevation fluctuation or area of capillary fringe. The design goal is to achieve approximately two (2) feet of drawdown across the Treatment Area allowing the SVE system to effectively remove contaminants from the soil in that zone.

Groundwater extraction testing was conducted at two locations (EW-3 and EW-4). A network of transducers were installed in the extraction well and the surrounding monitoring wells and/or piezometers. The transducers were programmed to measure the height of the water column above the instrument every 30 seconds. Depth to groundwater measurements were collected using an electronic water level meter at the initiation of pumping and periodically during the pump testing.

The extraction wells were evacuated fully within approximately 5 minutes following the initiation of pumping. The depth to groundwater in each extraction well was maintained with a pumping rate of less than an average 0.5 gpm, the minimum flow rate. The extraction wells were able to recharge enough at this rate of pumping to allow a slug of water to discharge, and then a 30 second to 1 minute period of recharge was necessary.

The groundwater extraction test was continued until depth to water measurements in the furthest piezometer stabilized. The groundwater level depressed an average of 8 inches, 7 inches and 2.5 inches feet as observed in monitoring wells located 10, 20 and 30 feet away from the pumping well, respectively over the test period outlined previously. The stabilization of the water depth in the piezometers and maintaining the extraction well groundwater depth at the pump inlet indicated that continued testing was not necessary. Following stabilization, pumping was terminated and manual depth to water measurements and transducer readings were continued until the groundwater elevations had recovered to near the pre-testing condition.

2.3.2 Groundwater Extraction System Design Parameters

2.3.2.1 Groundwater Extraction Well Spacing

The ROI for the groundwater extraction is the maximum distance at which the desired drawdown can be achieved. A desired groundwater drawdown of approximately two (2) feet below the existing groundwater table has been specified to provide a greater area for the SVE system to treat the maximum ROI. Based on this requirement, the groundwater extraction well ROI was determined to be 15 feet, or a maximum well spacing of approximately 30 feet. The calculations used to determine the ROI are included in Appendix D.

As previously indicated in Section 2.2, the ROI for the groundwater extraction system is less than the ROI for the SVE system. Therefore, the 15-foot ROI for the groundwater extraction wells is the limiting variable when using a dual phase extraction system. Of the eighty-one (81) SVE wells proposed to be installed at the Site, sixty-four (64) will be constructed as dual phase extraction wells. Approximately 30 of these wells will be located up-gradient of the treatment area, at the northeast side of the Site. These wells are being spaced at approximately 20 foot-on-center to extract the majority of the water entering the Site that would cause an increase in the groundwater table. The remaining 34 wells are distributed throughout the treatment area at either 20 or 30 foot-on-center spacing to maintain the depressed groundwater table for SVE extraction.

2.3.2.2 Groundwater Extraction Rates

Based upon the results of the Pre-Design Investigation previously described, the maximum yield of each extraction well has been estimated to be approximately 0.5 gpm. The groundwater extraction well spacing was based on a maximum radius of influence (ROI) of 15 feet, and therefore, a total of 64 extraction wells were needed to provide the dewatering of the Treatment Area, as shown on the Drawings.

While it is highly unlikely that all 64 wells will operate simultaneously, the design accounts for this condition as a conservative approach and the piping network was sized based upon these flow conditions. With 64 wells pumping at 0.5 gpm, it is anticipated that the maximum discharge to the existing treatment system from these wells is 32 gpm or approximately 46,000 gallons per day (gpd). Higher pumping rates are anticipated at system startup; however, it is expected that the actual flow rates will be well below the maximum design pump rate as the dewatering system approaches equilibrium.

2.3.2.3 Flow & Contaminant Loadings to Existing Treatment Plant

The resultant concentrations of contaminants within the extracted groundwater should not cause an increase of contaminant loading to the treatment system. The existing groundwater collection trench is located down-gradient of the Treatment Area. The collection trench drains to a wet well on Site where the groundwater is pumped to the treatment system. The depression of the groundwater in the treatment area should reduce the amount of groundwater collected in the groundwater collection trench.

In the long term, the amount of groundwater removed by the groundwater extraction wells should be approximately equivalent to the reduction in groundwater being collected in the groundwater collection trench. In addition, the majority of the groundwater extraction wells are located up-gradient of the Treatment Area and the ground water should contain less contamination. Therefore, the amount of groundwater added to the groundwater treatment system should be about the same amount of groundwater presently being treated and the contaminant loading should be less.

While the estimated potential maximum discharge from the groundwater extraction system is 46,000 gpd, the anticipated flow rate is expected to be less. The groundwater flow rate from the groundwater collection trench, which is intercepting the groundwater down gradient from the Process Area, is approximately 20,000 to 30,000 gpd. The extraction wells, which are located up gradient of the Process Area, will be intercepting the groundwater prior to the groundwater flowing through the Process Area to the groundwater collection trench. Therefore, the amount of groundwater removed by the extraction wells should be equivalent to the amount of groundwater presently being collected in the collection trench from the treatment area in the Process Area.

2.3.3 Groundwater Extraction System Components

2.3.3.1 Dual Phase Extraction Wells

In order to depress the groundwater in the Treatment Area, sixty-four (64) dual phase extraction wells will be installed that will be used for both the extraction of groundwater and soil vapor. These wells will be installed as previously described in Section 2.2.3.1. However, the dual phase extraction wells will also be equipped with submersible pumps to evacuate the water from the wells. The pumps will be installed approximately 1 to 1.5 feet above the bottom of the well to maximize the amount of drawdown, but still leave sufficient sump area for the accumulation of fines.

2.3.3.2 Groundwater Extraction Piping System

Each pump discharge will be routed to a fusion-welded high density polyethylene (HDPE) piping network. All of the piping will be placed on top of the existing asphalt pad to minimize disturbance; however, the pitch of groundwater piping is not critical since it is part of a pressurized system. Sufficient slack will be placed throughout the piping network during installation to allow for sufficient thermal expansion and contraction of the HDPE piping. Additionally, any pipe stands utilized for the pipe will not be rigidly fastened to the pipe to allow for thermal expansion and contraction of the pipe.

The proposed piping network is shown on the Drawings and has been sized to minimize pressure losses within the system. Each discharge tube from the pumps will include a check valve to prevent backflow into the wells and a ball valve so that the discharge from individual pumps can be controlled. The individual discharge lines will then be connected to a larger header pipe which will discharge into an approximately 2,000 gallon temporary polyethylene storage tank for equalization of flow. At a maximum inflow rate of 32 gpm, the tank will provide sufficient storage for approximately 62 minutes of storage. However, the actual inflow rate is anticipated to decrease as the pumping system reaches the targeted drawdown levels. The fluid level within the temporary equalization is tank will be controlled with a pressure transducer and a transfer pump will be utilized to pump the water in the tank to the existing on-Site groundwater treatment plant.

2.3.3.3 Groundwater Extraction Pumps

Given the relatively large number of groundwater dewatering wells required for this project, pneumatic pumps have been selected as the preferred type of pump for this application. Specifically, AP4+ Series pneumatic pumps, as manufactured by QED Environmental Systems have been selected as the preferred pumps for this project. These pneumatic pumps are automatic pumps that operate by regulated compressed air as opposed to traditional submersible pumps that require an electrical source and potentially complex control systems to operate.

The AP4+ fills and empties automatically as well as controls the fluid level in a well automatically. The pump fills when fluid enters the bottom check valve. As the fluid level in the pump raises a float inside the pump, the air in the pump chamber exists through an exhaust valve. When the float reaches to top of the chamber, a valve mechanism is engaged that causes the exhaust air valve to close and the air inlet valve to open. As compressed air enters the pump, the fluid within the pump is evacuated. Once the fluid level drops, the valve mechanism is reversed and the cycle starts again.

There will be a total of three tubes connected to each of the pneumatic pumps. The first tube connected to the pump will provide the compressed air to operate the pump. The second tube is for the air exhaust as the pump chamber fills. The discharge point will be maintained inside the well riser pipe given that the wells are design as dual-phase extraction wells and will also be under vacuum. Finally, each pump will be equipped with a groundwater discharge line. The air supply line and the pump discharge will be connected to each well head through a sanitary well seal to ensure that the desired vacuum is maintained in the wells. The air intake lines will be equipped with an pressure gauge to monitor air pressure at each pump and help balance the system, a filter/regulator to ensure clean air is delivered to the pump and adjust the air pressure to each pump, and a cycle counter to monitor the approximately discharge rate from each pump. The cycle counters will be placed in a plastic enclosure to provide some additional protection to weather.

2.3.3.4 Compressed Air System

As previously indicated, the pneumatic pumps will operate on compressed air. Per the calculations in Appendix D, CHA has estimated that the maximum total air consumption for all sixty-four (64) of the pneumatic pumps to operate simultaneously will be approximately 20 cfm at a pressure of 125 pounds per square inch (PSI). While many rotary screw compressors are rated for full-time duty, a design operation rate of approximately 50 percent was utilized for design purposes. Specifically, CHA selected an Ingersoll Rand UP6-10TAS-125 rotary screw compressor that can deliver up to 38 cfm and a pressure of 125 PSI. The air compressor system will also include a storage tank to reduce cycling and an air dryer.

2.3.3.5 Equipment Enclosure

The air compressor along with the conductive heating system equipment (see Section 2.4) will be placed in a separate, unclassified enclosure adjacent to the SVE blower system enclosure.

2.4 CONDUCTIVE SOIL HEATING WELLS

Conductive soil heating wells will be installed within the Treatment area to thermally heat the subsurface soils. The heating of the subsurface soils will:

- Increase volatilization rates of VOCs and some SVOCs to improve efficiency of the SVE system.
- Reduce moisture rates and improve air flows in subsurface soils in the deeper zones of the Treatment Area by evaporating the remaining water.
- By heating the soils to an average temperature between 85 degrees Fahrenheit (ºF) and 95ºF as opposed to heating the soils to a level to ensure thermal destruction of the contaminants, the heat will enhance the natural biodegradation of residual levels of contaminants by enhancing the reproduction rates of indigenous bacteria at the Site.

2.4.1 Conductive Soil Heating System Design Parameters

To thermally heat the soils within the Treatment Area, conductive soil heating wells will be installed and hot water will be circulated through piping that is installed in the wells. The soil at the nodes furthest from the conductive soil heating wells will be heated to an average temperature between 85 degrees Fahrenheit (ºF) and 95ºF. Details associated with the conductive soil heating wells are summarized in the following section. The hot water will be heated by two natural gas boilers. A piping system will be installed between the wells and the boilers to allow the continued circulation of hot water through the wells and boiler system.

2.4.2 Conductive Soil Heating System Components

2.4.2.1 Conductive Soil Heating Wells

Two-hundred and five (205), six (6)-inch inside diameter (ID) conductive soil heating wells will be installed throughout the Treatment Area as shown on the Drawings, although the well locations may be adjusted slightly during installation based upon field conditions encountered. Each well will be installed at a well spacing of 14.25-feet. A ROI of 7.5-feet has been estimated based on using hot water at 140°F and heating the soils to the required temperature within 90-days. Although the water will be heated to 140°F, it anticipated that the temperature at each heating well will be approximately 120°F at a distance of six (6) inches away from the center point of each well and that the temperature will decrease to the target temperature of 85ºF to 95ºF at the ROI limit.

Each borehole will be advanced to a depth of 15 feet bgs using the sonic drilling methods with a 4.5-inch ID drilling stem. A 0.75-inch HDPE tube will be place in each well with a “U”-shaped bend at the bottom of the well to allow circulation of the hot water through the well. A thermally enhanced grout having a minimum thermal conductivity 1.0 will be injected within the annular space between the well and the HDPE tubing. The grout will be injected in the well to within approximately three (3) feet of the ground surface. The HPDE tubing will then be insulated for the top three (3) feet. Cold patch asphalt will be tamped by hand into the void space between the asphalt cap and the insulation around the HDPE tubing to restrict surface water infiltration at each borehole.

Before drilling at the initial location and after drilling at the last location, the drilling rig and all drilling equipment will be decontaminated in accordance with the protocols established in the Health and Safety Plan included as Appendix F.

2.4.2.2 Reverse Return Header System

The piping network used to thermally heat the surface will setup as a reverse return header system. All of the piping will consist of fusion welded HDPE pipe insulated with closed-cell foam insulation. In the early spring and fall months, the piping network will be bedded in approximately three (3) inches of loose straw and covered with concrete curing blankets to provide additional thermal protection. The layout of the header system is shown on the Drawings and has been designed to create a "self-balancing" system. In other words, the pump connected closet to the boiler system on the inlet will be connected furthest away from the boiler system on the outlet side and vice versa. Approximately ten (10) wells will be connected to each secondary header and approximately five (5) to six (6) secondary header pipes will be connected to each of the primary headers. It is currently anticipated that there will be two (2) primary headers with one (1) on each side of the equipment containers.

The heated fluid will circulate through the conductive soil heating wells and return to the boilers for reheating and recirculation back to the wells. The amount of hot water circulated through the wells will be adjusted based on the temperature of the soil at the node. Once the soil reaches the desired temperature, the amount of heat required to maintain the required soil temperature decreases.

2.4.2.3 Heat Transfer Fluid

The exact fluid mixture utilized for heat transfer and distributed throughout the heating system will be determined based upon Site conditions and anticipated heat transfer efficiencies, but will include a mixture of potable water and glycol.

2.4.2.4 Boiler System

The fluid within the conductive heating system will be heated by two boilers operating in parallel. The boilers will heat the fluid to 140°F and will be operated using natural gas as a fuel source. Circulation pumps will be utilized to physically move the fluid within the heating system.

2.4.2.5 Equipment Enclosure

The boilers, circulation pumps and associated control system will be installed in an unclassified enclosure along with the air compressor system utilizing for the groundwater extraction system.

2.5 BIOVENTING

As asymptotic conditions are reached and the mass of VOCs being removed by the SVE system decreases to minimal levels, the SVE wells will be transitioned to a bioventing system by reversing the plumbing on the blower system to inject air into the SVE wells on an as needed basis. The goal of the bioventing operation is to promote the natural biodegradation of any residual VOCs along with the heavier SVOCs. Unlike the SVE system, the goal of the bioventing operation is provide oxygen to promote biodegradation of the remaining contaminants rather than remove contaminants through volatilization.

The basis for determining the extent of bioventing required at the Site will be detailed in the SMP, but will be based upon field evidence of biodegradation (e.g. monitoring of oxygen uptake and the generation of carbon dioxide and methane) and the need for supplemental oxygen to maintain such biodegradation. Soil samples will be collected from specific areas in the Process Area to evaluate the general health of the microbial population and to determine if the specific microbial species present are capable of degrading the contaminants remaining. The total heterotrophic microorganisms and specific degrader microorganism populations will be evaluated using plate count procedures. A plate count of 10^5 colony forming units per gram of soil should be present for bioventing. In addition, analyses will be completed to determine the availability of soluble nitrogen and phosphorous containing nutrients such as ammonium, nitrates and phosphates. Based on the analysis, nutrients may be added to the soils along with the oxygen being blown into the soil. Specific microbial species may be injected into the soils to supplement the natural microbial population that is present.

Monitoring of oxygen and carbon dioxide levels beneath the asphalt cap in spring of 2012 indicated that indigenous bacteria capable or degrading the site contaminants are present at the Site. The duration and flow rate of the blower operation will be determined based upon field conditions observed following the cessation of the SVE system, but is anticipated to be a lower flow rate and for smaller durations compared to the SVE system. The variable frequency drive (VFD) on the blower system will allow the flow rates to be reduced to appropriate levels during the bioventing phase of the remediation.

2.6 SITE ACCESS, SECURITY AND WORK ZONES

The Congress Street site is currently secured with chain link fencing on all sides. Security cameras have been installed on the Site to allow the monitoring of the Site. The Congress Street site is monitored from the Rotterdam Junction guard house that is manned 24 hours a day, 7 days a week.

Two gates provide access to the Site, with one gate located near the northeast corner of the Site near the intersection of Oak Street and Tenth Avenue and the second gate is located on the southeast corner of the Site on Tenth Avenue. The gate on Tenth Avenue will be the main gate used in moving materials on and off-site in support of remedial activities. The gate on Congress Street will be used to provide access to SI Group personnel who maintain the groundwater treatment system and other support personnel. Since the in-situ remedial treatment system, including an extensive piping network, will be installed on top of the existing asphalt pad, travel across the Treatment Area will be limited. Therefore, both gates will be used to access the Treatment Area depending on the activity of where the work will be completed.

The contractor performing the in-situ work will provide a Site-Specific Site Health and Safety Plan(s) for the installation and operation of the remedial system.

2.7 STORM WATER AND WASTEWATER MANAGEMENT

SI Group maintains a SPDES Permit (NY-0260525) for the operation of the groundwater treatment system, the discharge of the treated groundwater, and the discharge of storm water at the Congress Street site. There are two permitted outfalls at the Site. Outfall 001 is permitted to discharge treated groundwater and storm water to Cowhorn Creek. Outfall 002 is only permitted to discharge storm water. The SPDES permit does not allow the discharge of any contaminated storm water from the Congress Street site.

It is anticipated that contaminated storm water will not be generated during Phase 2 remedial activities due to the asphalt cap over the Process Area, the type of drilling methods (i.e., sonic) expected to be implemented, and the procedures to be implemented to manage soils. Through the use of sonic drilling methods, contaminated soil will be generated in a sleeve and directly transferred to a waste disposal container (e.g., 55-gallon drum or roll-off container). Therefore, contaminated soil should not come into contact with the asphalt cap in the Process Area. Additionally, a 4-foot by 8-foot sheet of plywood with a pre-drilled hole in the center will be placed around each well location prior to the commencement of the drilling activities to capture any cuttings that may drop around the borehole and keep the asphalt surface clean. Furthermore, the asphalt pavement around each well penetration will be sealed with asphaltic cold patch or concrete to ensure that stormwater running across the pad does not come into contact with the contaminated soils beneath the asphalt.

If contaminated storm water is generated, it will be managed in accordance with the Soil and Stormwater Management Plan contained in Appendix E. In addition, any contaminated wastewater generated from the remedial activities will be contained and either sent off-site for treatment or sent to the on-Site ground water treatment system depending on the approval of NYSDEC.

2.8 TRANSPORTATION OF CONTAMINATED MATERIALS

It is anticipated that contaminated soil and waste materials will be transported off-site as part of the work completed to install the in-situ treatment system. The contaminated soil and waste materials will be characterized for proper disposal. The potentially contaminated soils will be place in containers until the soils are characterized, profiled and disposed off-site at a properly permitted facility. The containers will be covered to prevent exposure to storm water and to reduce the potential release of organic vapor contaminants. Any trucks or equipment leaving the Treatment Area that has been potentially in contact with contaminated soils will be decontaminated and cleaned to avoid tracking of potential contamination onto the adjacent areas, properties and roadways. All trucks hauling contaminated waste materials off-site will be covered with a canvas cover or similar material and have an appropriate Part 364 permit.

2.9 AIR MONITORING DURING REMEDY IMPLEMENTATION

Given that the only intrusive activities planned for Phase 2 of the project includes drilling relatively small diameter boreholes through the existing asphalt pad, the potential for vapor emissions and dust is greatly reduced compared to the Phase 1 Site preparation activities. Nevertheless, air monitoring will be performed throughout the installation of all wells at the Site. Specifically, a PID will be used to measure the concentration of volatile vapors in the exclusion zone during all intrusive activities in accordance with the remedial contractor's HASP.

Contaminant monitoring, as specified in the Community Air Monitoring Plan (CAMP), will be required for ground intrusive activity if:

- Increased particulate levels are observed in the work area;
- Organic vapors are detected in the exclusion zone at concentrations of 5 parts per million (ppm) above background for over 15 minutes; or
- Increased odor levels are detected in the work area for over 15 minutes.

If the CAMP is implemented, air monitoring will be performed during the remaining intrusive remedial activities in accordance with the NYSDOH's *Generic Community Air Monitoring Plan* (CAMP). The full CAMP is provided in Appendix G.

2.10 COMMUNITY AND ENVIRONMENTAL RESPONSE PLAN

A Community and Environmental Response Plan (CERP) has been prepared to monitor and address potential short-term impacts on the surrounding community and environmental resources. The CERP is provided in Appendix H and contains the following elements:

- Summary of the CAMP;
- Temporary measures;
- Odor management plan;
- Noise and vibration mitigation;
- Site security;
- Sediment and erosion control measures;
- Waste management measures;
- Water management and treatment measures;
- Traffic control and Site access plans;
- Decontamination of trucks and equipment; and,
- Off-site trucking routes and emergency procedures.

2.11 REQUIRED PERMITS AND OTHER AUTHORIZATIONS

The remedial activities to be completed under Phase 2 will impact the SPDES Permit (NY-0260525) presently in effect at the Congress Street facility. Based on NYSDEC approval, these activities will include the treatment of groundwater extracted from the dewatering of the Treatment Area, wastewater generated from the treatment system including the moisture collected in the SVE system, and wastewater generated during installation of the in-situ treatment system, which will primarily be water associated with decontamination processes.

In addition, NYSDEC approval will be required for the vapor control system that will be installed on the SVE system. The control system will consist of a granular activated carbon (GAC) system that will remove the contaminants that are contained in the soil vapor prior to discharge to the atmosphere.

2.12 “AS-BUILT” PLANS AND CERTIFICATION

SI Group will provide adequate on-Site engineering and construction observation reports that are completed under the direction of a professional engineer licensed to practice in New York State during all remedial activities. Full-time construction observation will be provided during installation of the groundwater extraction, conductive soil heating and soil vapor extraction wells; and the installation of the SVE treatment system.

Following the installation of the treatment system, part-time construction observation will be provided during the startup and diagnostic testing of the remedial systems. The level of oversight is anticipated to decrease with time as the system reaches optimum operating conditions. However, the remedial contractor will be on-Site regularly to operate and maintain the system. Additionally, an engineer or scientist will visit the Site periodically to verify continued operation of the system and collect appropriate samples.

Upon completion of Phase 2 remedial activities, a certification report that is signed and stamped by a New York State Licensed Professional Engineer documenting that the remedial activities have been completed, including “as-built” plans, will be prepared and submitted to NYSDEC.

2.13 GREEN REMEDIATION

The NYSDEC Division of Environmental Remediation (DER) developed an approach to remediating sites in the context of the larger environment, a concept known as green remediation, and presented this approach in DEC Program Policy “DER-31 – Green Remediation”. The document provides concepts and techniques of green remediation and guidance on how to apply them to remedial programs.

The concepts of green remediation have been evaluated to determine the resources that would be expended to complete the Phase 2 of the Congress Street remediation and to highlight those techniques that will be employed. An evaluation of the resources required to complete the remediation is provided as follows:

- **Energy Usage:** The installation and operation of the groundwater extraction wells, conductive soil heating wells, SVE wells and SVE treatment system will involve the consumption of natural gas, electricity, and gasoline or diesel fuel for the equipment used to install these wells and/or treatment systems. In addition, energy will be consumed in the operation of the pumps, blowers, equipment and treatment system during the remedial activities. Electricity will also be consumed indirectly during the manufacturing of any new materials used during the Phase 2 activities. Operation of the conductive soil heating wells in the target range of 85-95^{o}F and the use of in-situ bioremediation as part of the remediation activities will consume significantly less energy in comparison to soil excavation and off-site disposal activities. Additionally, the blower system will include a variable frequency drive (VFD) to minimize energy consumption when the blower does not need to be operated at full capacity.

- **Air Emissions:** The on-Site activities discussed above will also result in minor air emissions from the vehicles. In addition, it is expected that vapor extracted during the SVE phase would represent an air emission; however, the extracted vapors will be treated with a carbon filtration unit, thereby eliminating or reducing that source of air emissions. Minimal fugitive air emissions will occur during the intrusive activities (e.g., well installation) that will be completed. The impact from these air emissions will be monitored and controls will be implemented, if necessary, to minimize their impact on the surrounding area. The emissions associated with the proposed design are significantly less than those that would be associated with ex-situ treatment or off-site disposal.

- **Water Needs and Impact on Water Resources:** The decontamination of on-site equipment/trucks is expected to consume relatively small amounts of water. In addition, relatively small amounts of water will be consumed during the installation of the wells that will include the decontamination of drilling and sampling equipment (as necessary).

- **Impacts on Land and Ecosystems:** The Phase 2 activities are expected to impact the Site; however, these impacts are not expected to extend off-site with the possible exception of noise. On-site impacts include minimal disturbance of the subsurface during well installation, temporary lowering of the groundwater table during operation of the

SVE system, generation of waste materials that may require temporary storage on-site, and possible disturbance of any existing on-site ecosystems. However, it is noted that the Site is currently fenced and much of the Site is covered by either asphalt or gravel; as such, minimal ecosystem disturbance is expected. In addition, controls such as stormwater management, reduction of vehicle idling, etc. will be used to further limit the potential off-site impacts.

- **Material Consumption and Waste Generation:** The Phase 2 activities will require materials such as PVC pipe, fittings, and well construction materials to be brought to the Site for the installation of groundwater extraction wells, conductive soil heating wells, SVE wells and piezometers. Some potentially contaminated soil and decontamination water is expected to be generated during the Phase 2 activities which will require off-site disposal.

- **Impacts on Long-term Stewardship of the Site:** The long term use of the property has not been determined at this time; however, SI Group is committed to remediation of the Site that is effective and protective of human health and the environment. The operation of the groundwater collection and treatment system, installed as the chosen remedy associated with operable unit 1 (OU1), is ongoing and will continue as long as contamination above groundwater standards is present at the Site. The chosen remedy for OU2 was specifically selected due to its long-term effectiveness and permanence. Furthermore, SI Group is committed to the implementation of Site Management Plan, which will include institutional and engineering controls, an operation and maintenance plan, and a monitoring plan to ensure that the remedy remains effective and protective of human health and the environment.

Based on the evaluation of required resources as provided above, several recommendations in DER-31 were considered in the design of the Site preparation activities. The specific concepts or techniques that have been incorporated in the Phase I Design include:

- Reduce Vehicle Idling
    - All vehicles, both on and off road (including construction equipment) will be shut off when not in use for more than 5 minutes, consistent with 6 NYCRR Part 217 Motor Vehicle Emissions, Subpart 217-3 Idling Prohibition For Heavy Duty Vehicles.

- Cover Systems
    - The existing cover systems will remain in place and require minimal maintenance (e.g. less mowing), limits the infiltration of storm water, and is an integrate part of the in-situ treatment system.

- Low Energy Alternatives
    - In-situ bioremediation, including bioventing will be utilized within the Treatment Area for the degradation of SVOCs.

- Renewable Energy
    - Conductive soil heating wells will be utilized for heating of the soil within the Treatment Area.

- Reduction of Long-Term Operation and Maintenance
    - The remedial systems (conductive soil heating wells, SVE system and bioventing) will be utilized within the Treatment Area for the destruction of VOCs and SVOCs within the subsurface soils. This approach will reduce the long-term operation and maintenance of the conductive soil heating wells, SVE system and bioventing operations.

- Adaptable Systems
    - The SVE system will be designed and installed to allow for a phased start-up within the Treatment Area. The system will also allow for the segregation of portions of the Treatment Area during operation to improve SVE efficiency. In addition, the SVE wells will be modified during remedial activities (as indicated in Section 3.3) to operate as a bioventing system.

3.0 SITE MANAGEMENT PLAN

Since the selected remedial action will result in contamination remaining at the Site, a Site Management Plan (SMP) will be prepared to manage the remaining contamination at the Site including the monitoring, operation and maintenance of the in-situ remedial system. The SMP will be prepared in accordance with:

- the requirements outlined in NYSDEC “DER-10: Technical Guidance for Site Investigation and Remediation” (May 2010)
- the Record of Decision dated December 21, 2010
- the guidance provided by NYSDEC

The SMP will include an Institutional and Engineering Control Plan, Monitoring Plan, and an Operational and Maintenance Plan. The implementation of the SMP should allow for the safe use of the Site. The post-remediation SMP will be submitted to the NYSDEC for review ninety (90) days following the submission of the Phase 2 Remedial Design Work Plan. If necessary, the SMP will be modified following the completion of the Phase 2 remedial activities to account for Site-specific conditions that arise during the remediation.

3.1 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

Since contaminated soil will remain beneath the Site following the remedial activities, Engineering and Institutional Controls will be implemented to protect human health and the environment. An Engineering and Institutional Control Plan will be prepared as part of the SMP describing the procedures for implementation and management of all Engineering and Institutional Controls at the Site.

The Plan will include:

- A description, including the basic implementation and intended role, of each Engineering and Institutional Control;

- A description of the provisions of the environmental easement, including any land use and groundwater use restrictions;

- Provisions for the management and inspection of the identified engineering controls;

- A Soil Management Plan detailing the provisions for management of future excavations in areas of remaining contamination;

- Provisions for maintaining Site access controls and NYSDEC notification; and

- Procedure for the periodic review and certification of the Engineering and Institutional Controls.

3.1.1 Institutional Controls

A series of Institutional Controls is required by the ROD in the form of an environmental easement that:

- Requires SI Group to complete and submit to NYSDEC an Institutional Control/Engineering Controls certification on a periodic basis as determined by NYSDEC.

- Limit the use and development of the property to industrial uses only.

- Restrict use of groundwater as a source of potable or process water without necessary water quality treatment as determined by NYSDEC, NYSDOH, and the Schenectady County Public Health Administration.

- Prohibit use of the Site for agriculture or vegetable gardens.

- Require SI Group to prepare, submit and comply with a NYSDEC-approved Site Management Plan.

Adherence to these Institutional Controls in the form of an environmental easement will be implemented under the SMP.

3.1.2 Engineering Controls

In accordance with the ROD, a Site cover will be installed in areas not addressed by the permeable cap to allow for industrial use of the Site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the Site development or a soil cover in areas where the upper one foot of exposed surface soil exceeds the industrial soil cleanup objectives. Where the soil cover is required it will be a minimum of one foot of soil, meeting the soil cleanup objectives for cover material specified in 6 NYCRR Part 375-6.8(d). The soil cover would be placed over a demarcation layer. The upper six inches of the soil would be of sufficient quality to maintain a vegetation layer. Non-vegetated areas (buildings, roadways, parking lots, etc.) will be covered by either a paving system or concrete at least 6 inches thick.

3.2 MONITORING PLAN

A Monitoring Plan will be prepared as part of the SMP to describe the measures to be implemented to monitor the performance and effectiveness of the remedial actions completed at the Site. The Monitoring Plan will include:

- Groundwater monitoring program;
- Schedule of monitoring;
- Reporting of monitoring results to NYSDEC;
- Provision to evaluate the potential for vapor intrusion for any buildings developed on the Site, including provisions for mitigation of any impacts identified; and
- Provision to evaluate the potential for soil vapor intrusion for existing buildings if building use changes significantly or if a vacant building becomes occupied.

3.3 OPERATION AND MAINTENANCE PLAN

The Operation and Maintenance (O&M) Plan will be prepared as part of the SMP describing the measures necessary to operate, monitor and maintain the in-situ treatment system being installed at the Site. The O&M Plan will include:

- The operation procedures that would allow individuals unfamiliar with the Site to operate and maintain the systems;
- Operation, maintenance and monitoring of the in-situ treatment system including the operation of the groundwater dewatering system, operation of the SVE system, transition of the SVE system to bioventing, operation of the bioventing system, the termination of the bioventing system, and the monitoring of the system during each phase of operation;
- Compliance monitoring requirements of the in-situ treatment systems as required by permit or permit equivalent reporting as specified by NYSDEC;
- Maintenance of Site access controls;
- Notification requirements for NYSDEC;
- Procedures for providing NYSDEC access to the Site; and
- Procedures for providing NYSDEC O&M Reports.

4.0 SCHEDULE

The following provides a proposed schedule for the completion of Phase 2 Remedial Activities specified in the Work Plan:

Milestone	Anticipated Schedule
Submission of a Remedial Design Work Plan, Phase 2	August 31, 2012
Submission of a Site Management Plan	90 Days from Submittal of Remedial Design Work Plan, Phase 2
Selection of Contractor	60 Days from Approval of Phase 2 Remedial Design Work Plan
Initiation of Work	60 Days from Selection of Contractor
Completion of the Installation of the first phase of the In-Situ Treatment System	90 Days from Initiation of Work
Completion of the Installation of the Overall In-Situ Treatment System	Two (2) Years from Initiation of Work
Operation of In-Situ Treatment System	Two (2) to Three (3) Years from Initiation of Work
Submission of a Final Engineering Design Report for Phase 2	90 Days from Completion of the Installation of the In-Situ Treatment System & Achieving Remedial Goals

The overall progress of the project will be dependent upon a number of factors including, but not limited to: time of year at which the final design documents are approved, weather conditions at the time of construction, progress monitoring results, etc.

The NYSDEC will be notified at least 7 days prior to the initiation of any field activities conducted in support of the remedial design and 30 days prior to initiating the remedial design installation activities described herein.

FIGURES

File: M:\15091\CS\PHASE I DESIGN\CADD\ACAD\FIGURES\FIGURE 1.DWG Saved: 1/10/2011 11:37:33 AM Plotted: 1/10/2011 11:39:06 AM User: Newell, Sarah

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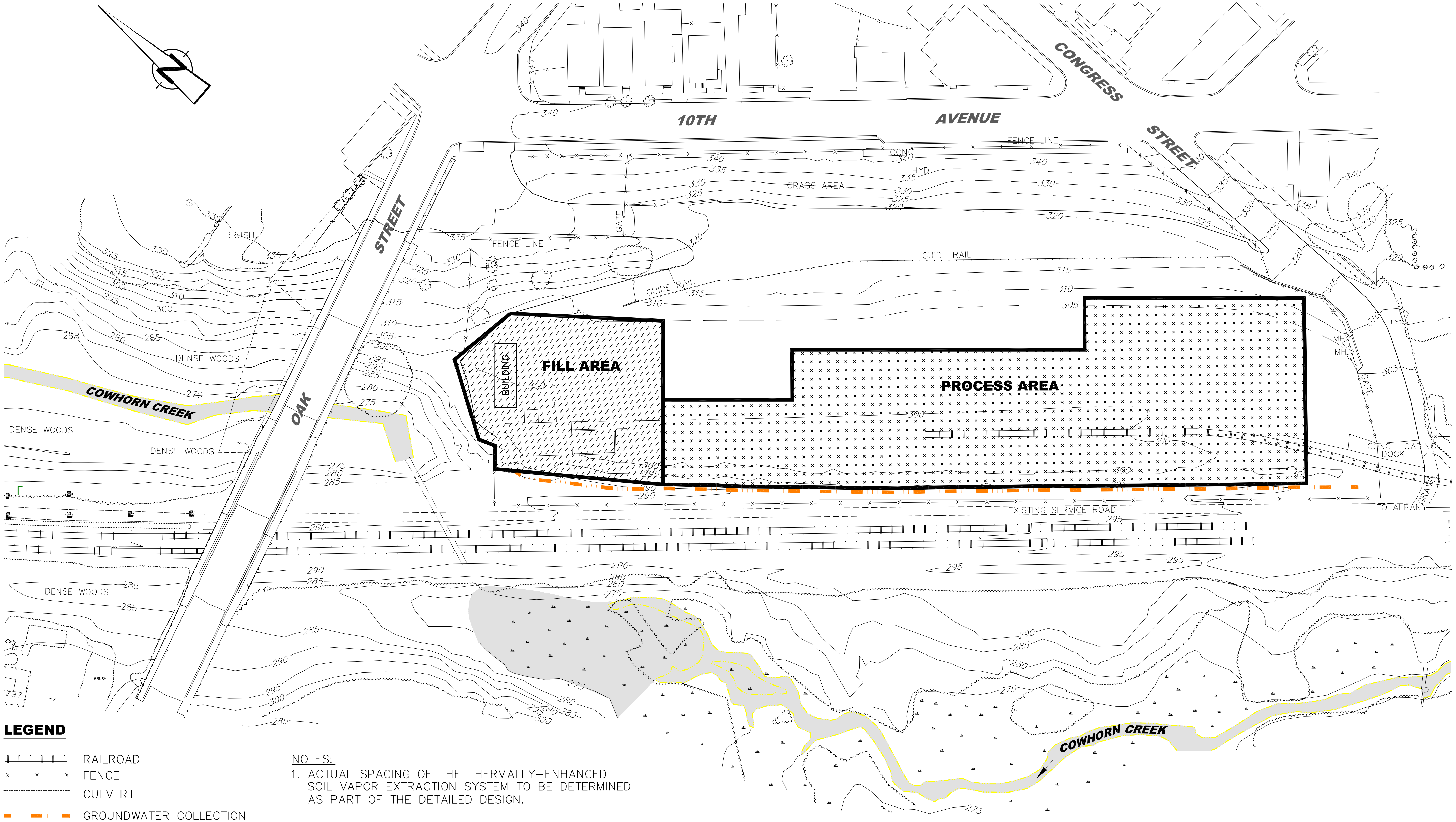
SITE LOCATION

CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

PROJECT NO.
15091

DATE: 01/10/2011

FIGURE 1



LEGEND

‡‡‡‡‡‡ RAILROAD

—×——×— FENCE

┄┄┄┄ CULVERT

▬ ▬ GROUNDWATER COLLECTION TRENCH

—300— CONTOUR WITH ELEVATION

▨ FILL AREA

☒ PROCESS AREA

NOTES:

1. ACTUAL SPACING OF THE THERMALLY-ENHANCED SOIL VAPOR EXTRACTION SYSTEM TO BE DETERMINED AS PART OF THE DETAILED DESIGN.

0 80 160

Scale in feet

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SITE PLAN

CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

PROJECT NO.
15091.4007.31000

DATE: 1/11

FIGURE 2

File: M:\15091\CS\PHASE I DESIGN\CADD\ACAD\FIGURES\APPENDIX C_SOIL AND STORMWATER MANAGEMENT PLAN\15091_FIG-2_SITE.DWG Saved: 1/14/2011 7:45:13 AM Plotted: 1/18/2011 9:56:32 AM User: Newell, Sarah LastSavedBy: 1393

APPENDIX A

Phase 2 Design Drawings

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SI GROUP CONGRESS STREET FACILITY
PHASE 2 SITE REMEDIATION

SITE NO. HW447007

CITY OF SCHENECTADY
SCHENECTADY COUNTY, NEW YORK

prepared for:

SI GROUP, INC.
1000 MAIN STREET
ROTTERDAM JCT, NY 12150

prepared by:

CHA
III Winners Circle. PO Box 5269 · Albany, NY 12205-0269
Main: (518) 453-4500 · www.chacompanies.com
CHA Project # 15091

SEPTEMBER 2012

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SI GROUP
CONGRESS STREET FACILITY
PHASE 2 SITE PREPARATION

TITLE SHEET

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Designed: BRB | Drawn: GJM | Checked: RML

RICHARD M. LOEWENSTEIN JR.
069787

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SI Group THE SUBSTANCE INSIDE

No.	Submittal / Revision	App'd	By	Date
1	NYSDEC SUBMITTAL	RML	BB/GM	09/12

T-01

GENERAL NOTES

GENERAL NOTES:

1. THIS PROJECT SITE IS A NEW YORK STATE LISTED HAZARDOUS WASTE SITE. ALL CONTRACTOR PERSONNEL ARE REQUIRED TO BE PROPERLY TRAINED PURSUANT TO THE HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE STANDARD (HAZWOPER); 40 CFR 1910.120 AND SI GROUP TRAINING PRIOR TO SITE ENTRY.

2. ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS.

3. CONTRACTOR SHALL VERIFY ALL UTILITIES WITH PROPER AUTHORITIES PRIOR TO DRILLING. A MINIMUM OF 48 HOURS BEFORE DRILLING, CONTRACTOR MUST CALL DIG SAFELY NEW YORK/U.F.P.O. AT 1-800-962-7962 FOR UTILITY STAKEOUT.

4. THE OWNER, OWNER'S REPRESENTATIVE AND NYSDEC RESERVE THE RIGHT TO EXAMINE ANY WORK DONE ON THIS PROJECT AT ANY TIME TO EVALUATE THE CONTRACTOR'S CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. ALL UNDERGROUND UTILITIES ENCOUNTERED SHALL BE REVIEWED BY THE OWNER AND OWNER'S REPRESENTATIVE FOR DETERMINATION OF REQUIREMENTS AND/OR PROCEDURES FOR ABANDONMENT OF SUCH UTILITIES.

6. ALL OPEN BORINGS SHALL BE PROPERLY SEALED OR COVERED AT THE END OF EACH DAY.

7. ALL IMPORTED MATERIALS SHALL BE IN ACCORDANCE TO SPECIFICATIONS UNLESS NOTED OTHERWISE.

8. THE CONTRACTOR SHALL RESTORE LAWNS, DRIVEWAYS, CULVERTS, SIGNS, AND OTHER PUBLIC OR PRIVATE PROPERTY OUTSIDE THE WORK LIMITS THAT IS DAMAGED OR REMOVED DURING THE COURSE OF CONSTRUCTION TO AT LEAST AS GOOD AS CONDITION AS BEFORE BEING DISTURBED. AS DETERMINED BY THE OWNER'S REPRESENTATIVE, THESE ITEMS SHALL BE REPLACE AT THE CONTRACTOR'S EXPENSE.

9. ALL PUBLIC ROADS ACCESSING THE SITE SHALL BE KEPT CLEAN OF MUD, TRACKING, AND DEBRIS AT ALL TIMES.

10. MATERIALS, EQUIPMENT AND VEHICLES ARE NOT TO BE STORED OR PARKED WITHIN ANY ROADWAY RIGHT-OF-WAY.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND INCURRING THE COST OF ALL REQUIRED PERMITS SUCH AS, BUT NOT LIMITED TO BUILDING PERMIT, DEMOLITION PERMITS, INSPECTIONS, CERTIFICATES, ETC. THE OWNER WILL BE RESPONSIBLE FOR OBTAINING THE NECESSARY PERMITS FROM NYSDEC INCLUDING MODIFICATIONS TO THE SITE SPDES PERMIT TO MANAGE GROUNDWATER AND WASTEWATER. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.

12. THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED LAND SURVEYOR.

13. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK IN ACCORDANCE WITH THE SPECIFICATIONS AND/OR OWNER APPROVAL.

14. MAINTAIN FLOW FOR ALL EXISTING UTILITIES, CULVERTS, AND DITCHES.

15. PRIOR TO BIDDING PROJECT, THE CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING CONDITIONS.

16. ALL PHYSICAL FEATURES, INDIVIDUAL TREES, LANDSCAPING OR UTILITY LOCATIONS COULD NOT BE POSSIBLY SHOWN ON THE CONTRACT DRAWINGS. EACH BIDDER IS ENCOURAGED TO PERSONALLY INSPECT ALL AREAS OF PROPOSED WORK, IN ORDER TO ENSURE THAT HE IS FAMILIAR WITH THE PHYSICAL LAYOUT OF THE AREA AND THE REQUIREMENTS OF THE WORK.

17. PROPERTY LINES ARE APPROXIMATE AS INTERPOLATED FROM EXISTING MAPPING AND ARE SHOWN FOR REFERENCE ONLY. SEE LIST OF MAP REFERENCES FOR FURTHER INFORMATION.

18. ALL PROPOSED WORK MAY BE VARIED IN THE FIELD BY THE OWNER OR OWNER REPRESENTATIVE TO MEET EXISTING CONDITIONS.

19. WHERE PRACTICAL, ALL EROSION CONTROL MEASURES SHALL BE PUT INTO PLACE PRIOR TO BEGINNING CONSTRUCTION.

ADDITIONAL NOTES:

1. THE CONTRACTOR SHALL:
   A. VERIFY ALL CONDITIONS IN THE FIELD PRIOR TO COMMENCEMENT OF WORK AND NOTIFY THE OWNER OF ANY DISCREPANCIES.
   B. EXAMINE THE SITE AND INCLUDE IN HIS/HER WORK THE EFFECT OF ALL EXISTING CONDITIONS ON THE WORK.
   C. PROVIDE AND INSTALL ALL MATERIALS AND PERFORM ALL WORK IN ACCORDANCE WITH RECOGNIZED GOOD STANDARD PRACTICE.
   D. HOLD THE OWNER HARMLESS AGAINST ANY AND ALL CLAIMS ARISING FROM WORK DONE BY THE CONTRACTOR ON SITE.

2. ALL SOIL CUTTINGS SHALL BE MANAGED IN ACCORDANCE WITH THE SOIL MANAGEMENT PLANS.

3. MANAGEMENT OF CONTAMINATED SOILS/MEDIUM SHALL BE COMPLETED IN A MANNER THAT DOES NOT CONTAMINATE CLEAN AREAS OF THE SITE INCLUDING THE EXISTING ASPHALT PAD. ANY REMEDIATION OF CLEAN AREAS SUBSEQUENTLY CONTAMINATED WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO COST TO THE OWNER. NO WASTE MATERIALS (e.g. SOIL CUTTINGS) SHALL BE LEFT EXPOSED OVERNIGHT.

4. DISPOSAL OF DRILL CUTTINGS AND OTHER WASTE MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

5. REMOVAL OF ITEMS SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

INDEX OF DRAWINGS

No.	Submittal / Revision	App'd	By	Date
1	NYSDEC SUBMITTAL	RML	BB/GM	09/12

SI Group THE SUBSTANCE INSIDE

RICHARD M. LOEWENSTEIN JR.
069787

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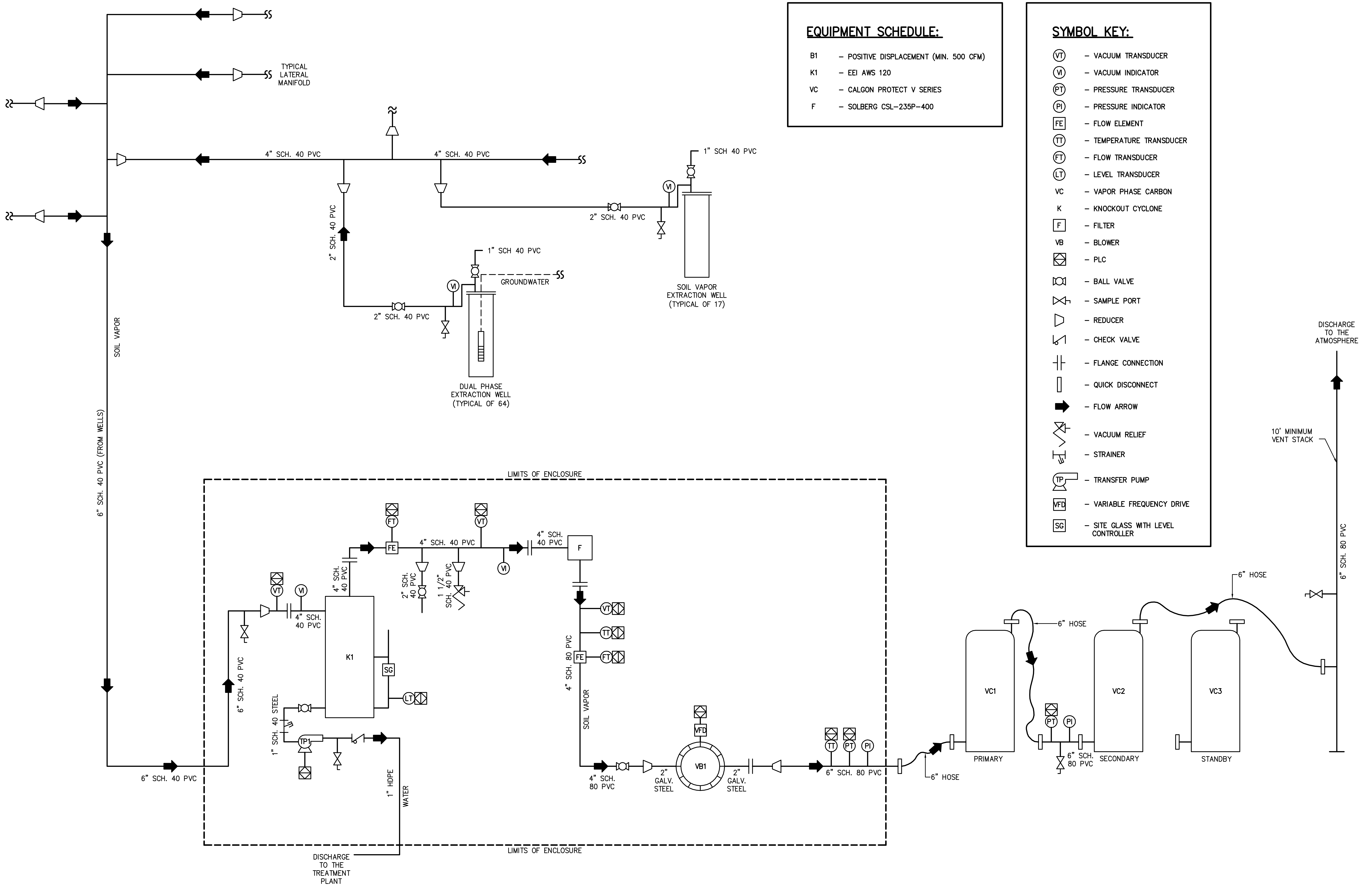
SI GROUP
CONGRESS STREET FACILITY
PHASE 2 SITE PREPARATION

LEGEND, GENERAL NOTES AND
INDEX OF DRAWINGS

Issue Date: 9/2012 | Project No.: 15091 | Scale: AS NOTED

L-01



SVE – PROCESS, INSTRUMENTATION AND CONTROL DIAGRAM

NOT TO SCALE

EQUIPMENT SCHEDULE:

B1	– POSITIVE DISPLACEMENT (MIN. 500 CFM)
K1	– EEI AWS 120
VC	– CALGON PROTECT V SERIES
F	– SOLBERG CSL–235P–400

SYMBOL KEY:

VT	– VACUUM TRANSDUCER
VI	– VACUUM INDICATOR
PT	– PRESSURE TRANSDUCER
PI	– PRESSURE INDICATOR
FE	– FLOW ELEMENT
TT	– TEMPERATURE TRANSDUCER
FT	– FLOW TRANSDUCER
LT	– LEVEL TRANSDUCER
VC	– VAPOR PHASE CARBON
K	– KNOCKOUT CYCLONE
F	– FILTER
VB	– BLOWER
⊠	– PLC
⋈	– BALL VALVE
⋈	– SAMPLE PORT
▷	– REDUCER
	– CHECK VALVE
╫	– FLANGE CONNECTION
▯	– QUICK DISCONNECT
➡	– FLOW ARROW
	– VACUUM RELIEF
	– STRAINER
TP	– TRANSFER PUMP
VFD	– VARIABLE FREQUENCY DRIVE
SG	– SITE GLASS WITH LEVEL CONTROLLER

No.	Submittal / Revision	App'd	By	Date
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PHASE 2 SITE PREPARATION

PROCESS, INSTRUMENTATION AND
CONTROL DIAGRAM

Issue Date: 9/2012 Project No.: 15091 Scale: AS NOTED

I-01

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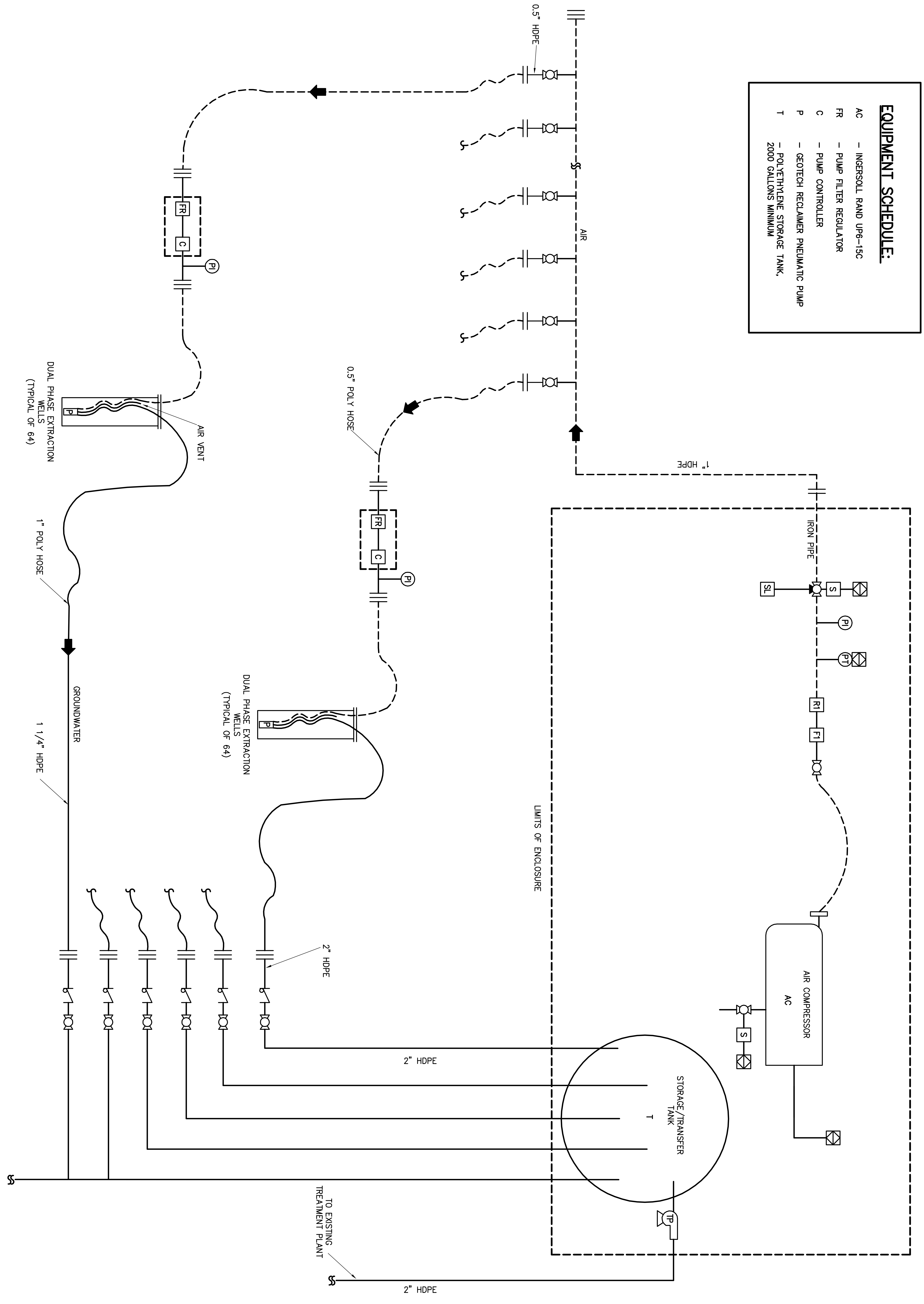
SYMBOL KEY:

PT	– PRESSURE TRANSDUCER
PI	– PRESSURE INDICATOR
S	– SILENCER
F	– FILTER
⊠	– PROCESS LOGIC CONTROLLER
⋈	– BALL VALVE
⟋	– CHECK VALVE
⊣⊢	– FLANGE CONNECTION
▭	– QUICK DISCONNECT
⬇	– FLOW ARROW
TP	– TRANSFER PUMP
AC	– AIR COMPRESSOR
T	– TANK
⫲	– FLANGE CONNECTION
⋈	– 3 WAY SOLENOID

EQUIPMENT SCHEDULE:

AC	– INGERSOLL RAND UP6–15C
FR	– PUMP FILTER REGULATOR
C	– PUMP CONTROLLER
P	– GEOTECH RECLAIMER PNEUMATIC PUMP
T	– POLYETHYLENE STORAGE TANK, 2000 GALLONS MINIMUM



GROUNDWATER EXTRACTION – PROCESS, INSTRUMENTATION AND CONTROL DIAGRAM

NOT TO SCALE

I-02

SI GROUP
CONGRESS STREET FACILITY
PHASE 2 SITE PREPARATION

PROCESS, INSTRUMENTATION AND CONTROL DIAGRAM

Issue Date: 9/2012
Project No.: 15091
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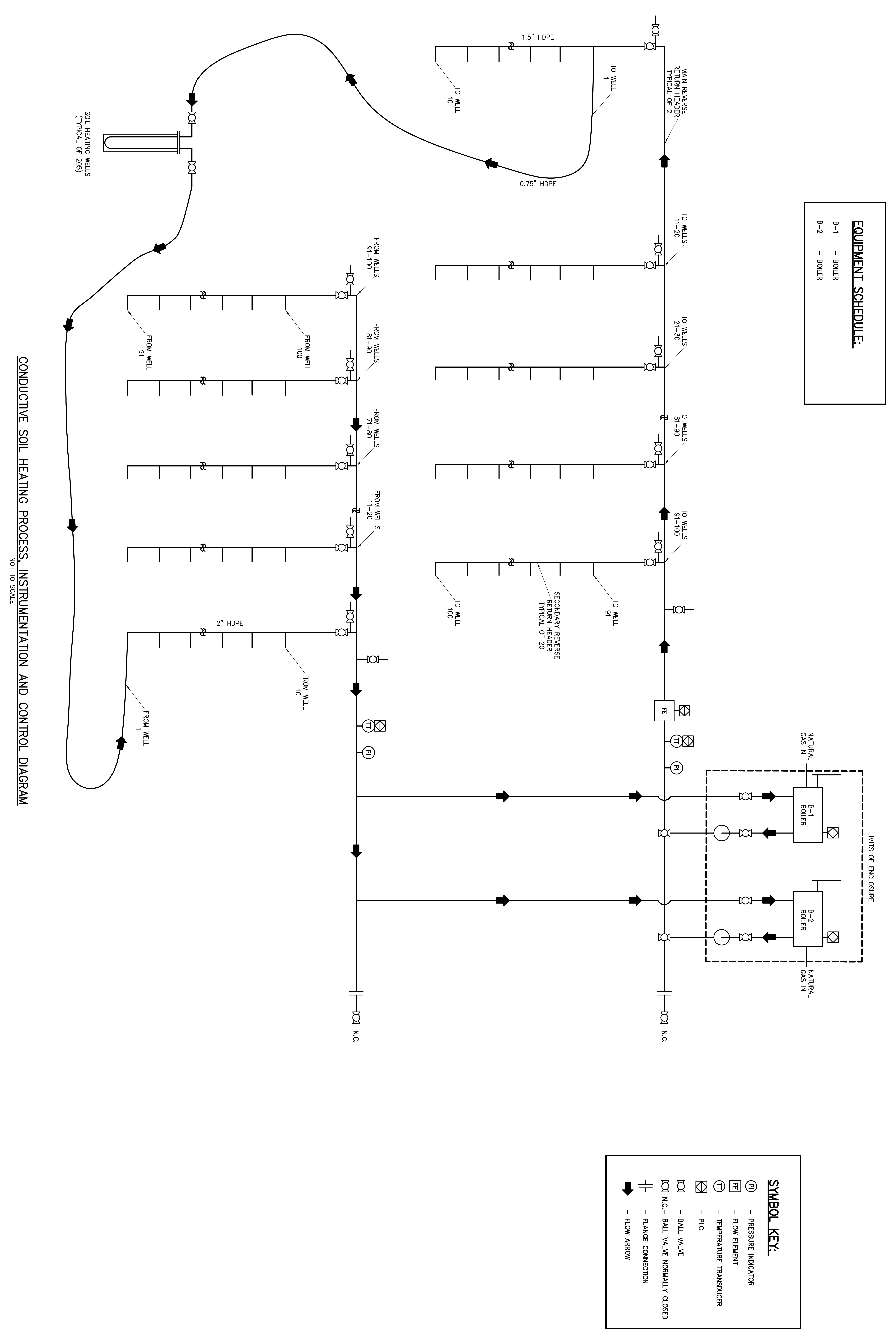

CONDUCTIVE SOIL HEATING PROCESS, INSTRUMENTATION AND CONTROL DIAGRAM

NOT TO SCALE

EQUIPMENT SCHEDULE:

B-1 – BOILER
B-2 – BOILER

SYMBOL KEY:

(PI) – PRESSURE INDICATOR
[FE] – FLOW ELEMENT
(TT) – TEMPERATURE TRANSDUCER
⊠ – PLC
⋈ – BALL VALVE
⋈ N.C. – BALL VALVE NORMALLY CLOSED
⊣⊢ – FLANGE CONNECTION
⬇ – FLOW ARROW

I-03

SI GROUP
CONGRESS STREET FACILITY
PHASE 2 SITE PREPARATION

PROCESS, INSTRUMENTATION AND CONTROL DIAGRAM

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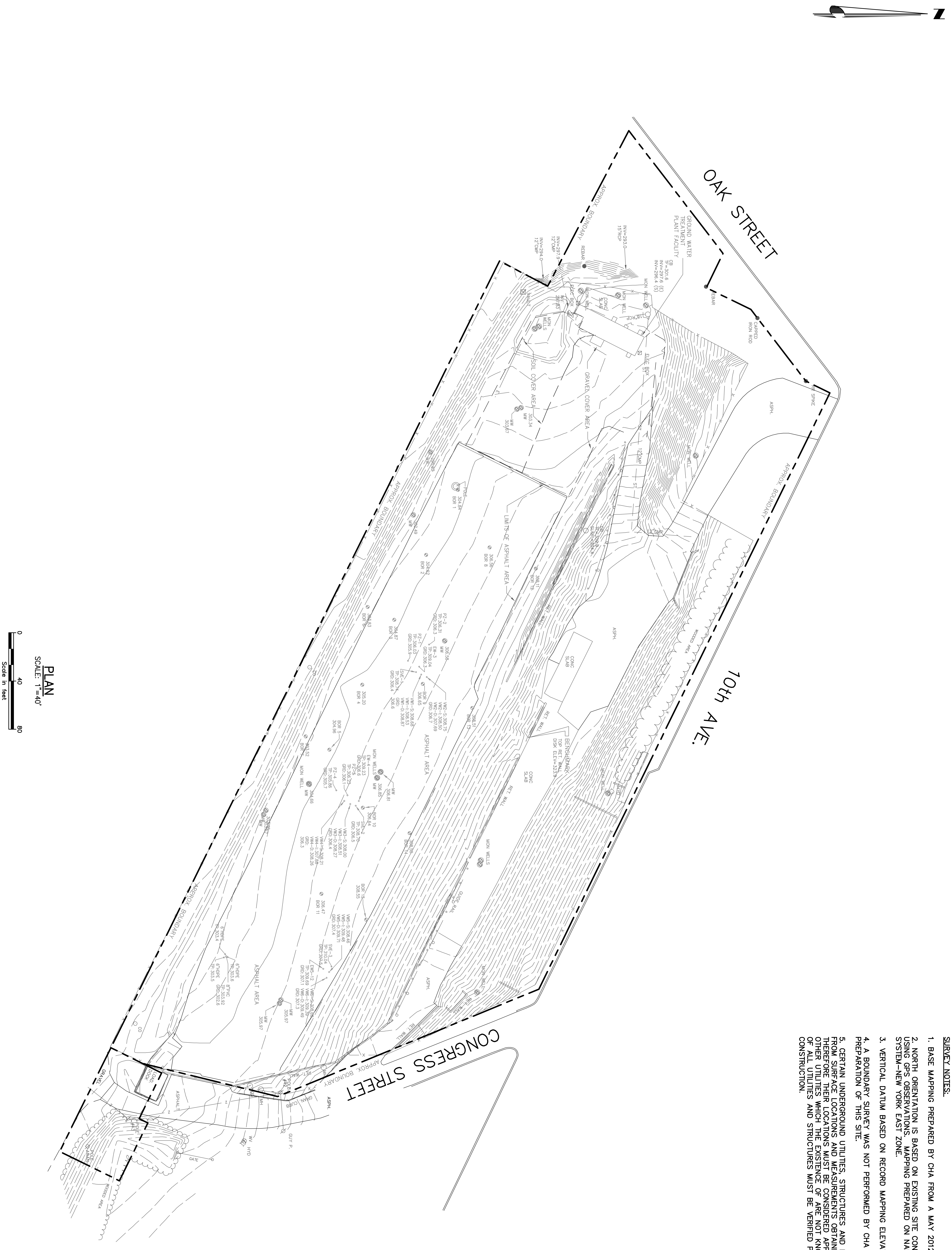

PLAN
SCALE: 1"=40'

SURVEY NOTES:

1. BASE MAPPING PREPARED BY CHA FROM A MAY 2012 FIELD SURVEY.

2. NORTH ORIENTATION IS BASED ON EXISTING SITE CONTROL ESTABLISHED BY CHA USING GPS OBSERVATIONS. MAPPING PREPARED ON NAD83 STATE PLANE COORDINATE SYSTEM–NEW YORK EAST ZONE.

3. VERTICAL DATUM BASED ON RECORD MAPPING ELEVATIONS PROVIDED BY THE CLIENT.

4. A BOUNDARY SURVEY WAS NOT PERFORMED BY CHA IN CONJUNCTION WITH THE PREPARATION OF THIS SITE.

5. CERTAIN UNDERGROUND UTILITIES, STRUCTURES AND FACILITIES HAVE BEEN SHOWN FROM SURFACE LOCATIONS AND MEASUREMENTS OBTAINED FROM A FIELD SURVEY, THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHER UTILITIES WHICH THE EXISTENCE OF ARE NOT KNOWN. SIZE, TYPE AND LOCATION OF ALL UTILITIES AND STRUCTURES MUST BE VERIFIED PRIOR TO ANY AND ALL CONSTRUCTION.

G-01

SI GROUP
CONGRESS STREET FACILITY
PHASE 2 SITE PREPARATION

EXISTING CONDITIONS PLAN

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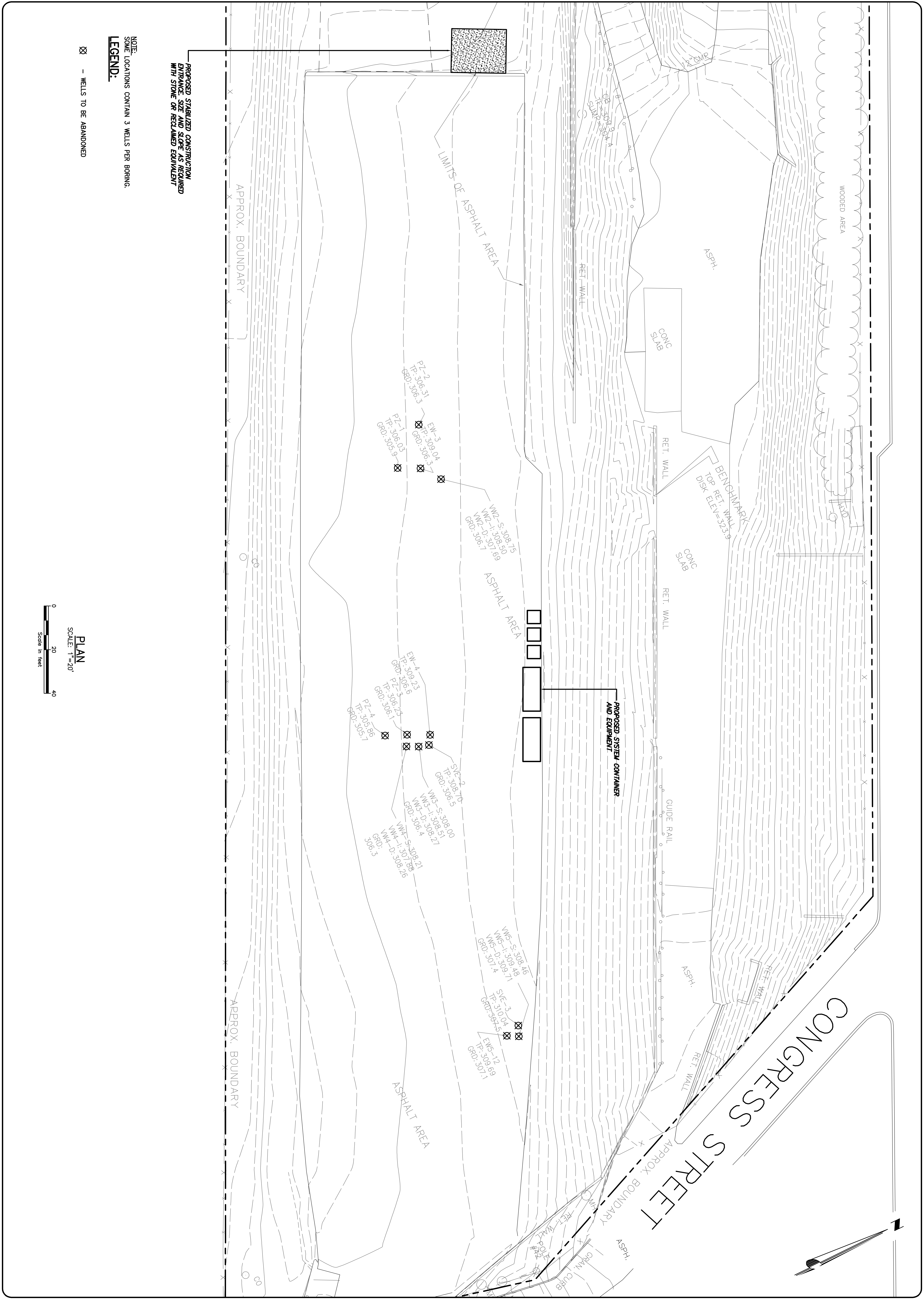

G-02

SI GROUP
CONGRESS STREET FACILITY
PHASE 2 SITE PREPARATION

SITE PREPARATION PLAN

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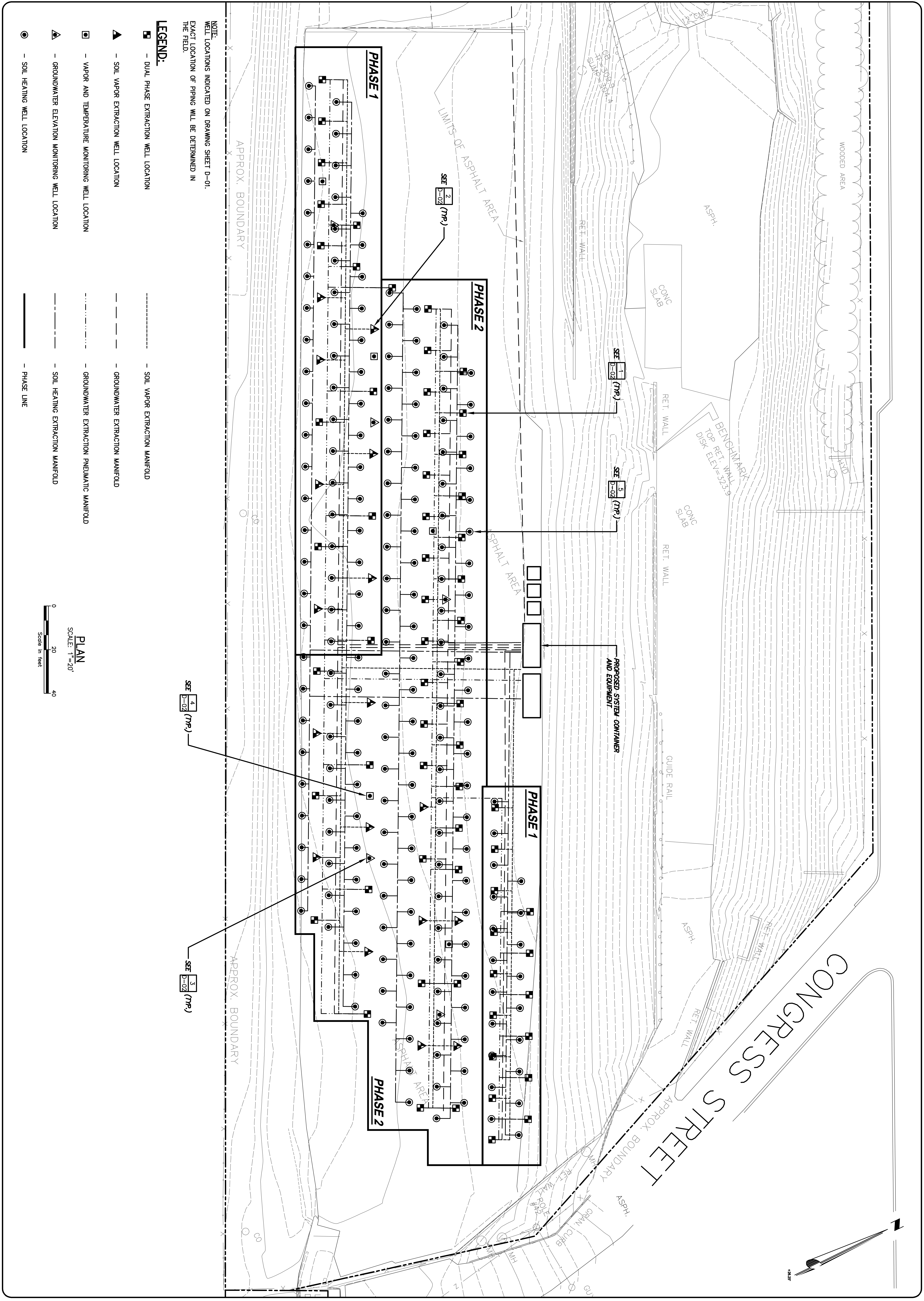

NOTE:
WELL LOCATIONS INDICATED ON DRAWING SHEET D-01. EXACT LOCATIONS OF PIPING WILL BE DETERMINED IN THE FIELD.

LEGEND:

- ◪ – DUAL PHASE EXTRACTION WELL LOCATION
- ▲ – SOIL VAPOR EXTRACTION WELL LOCATION
- ▣ – VAPOR AND TEMPERATURE MONITORING WELL LOCATION
- △ – GROUNDWATER ELEVATION MONITORING WELL LOCATION
- ⊙ – SOIL HEATING WELL LOCATION
- - - - - - – SOIL VAPOR EXTRACTION MANIFOLD
- — — — – GROUNDWATER EXTRACTION MANIFOLD
- ·-·-·-· – GROUNDWATER EXTRACTION PNEUMATIC MANIFOLD
- —·—·— – SOIL HEATING EXTRACTION MANIFOLD
- ━━━ – PHASE LINE

M-01

SI GROUP
CONGRESS STREET FACILITY
PHASE 2 SITE PREPARATION

OVERALL WELL SYSTEMS PLAN

Issue Date: 9/2012 | Project No.: 15091 | Scale: AS NOTED

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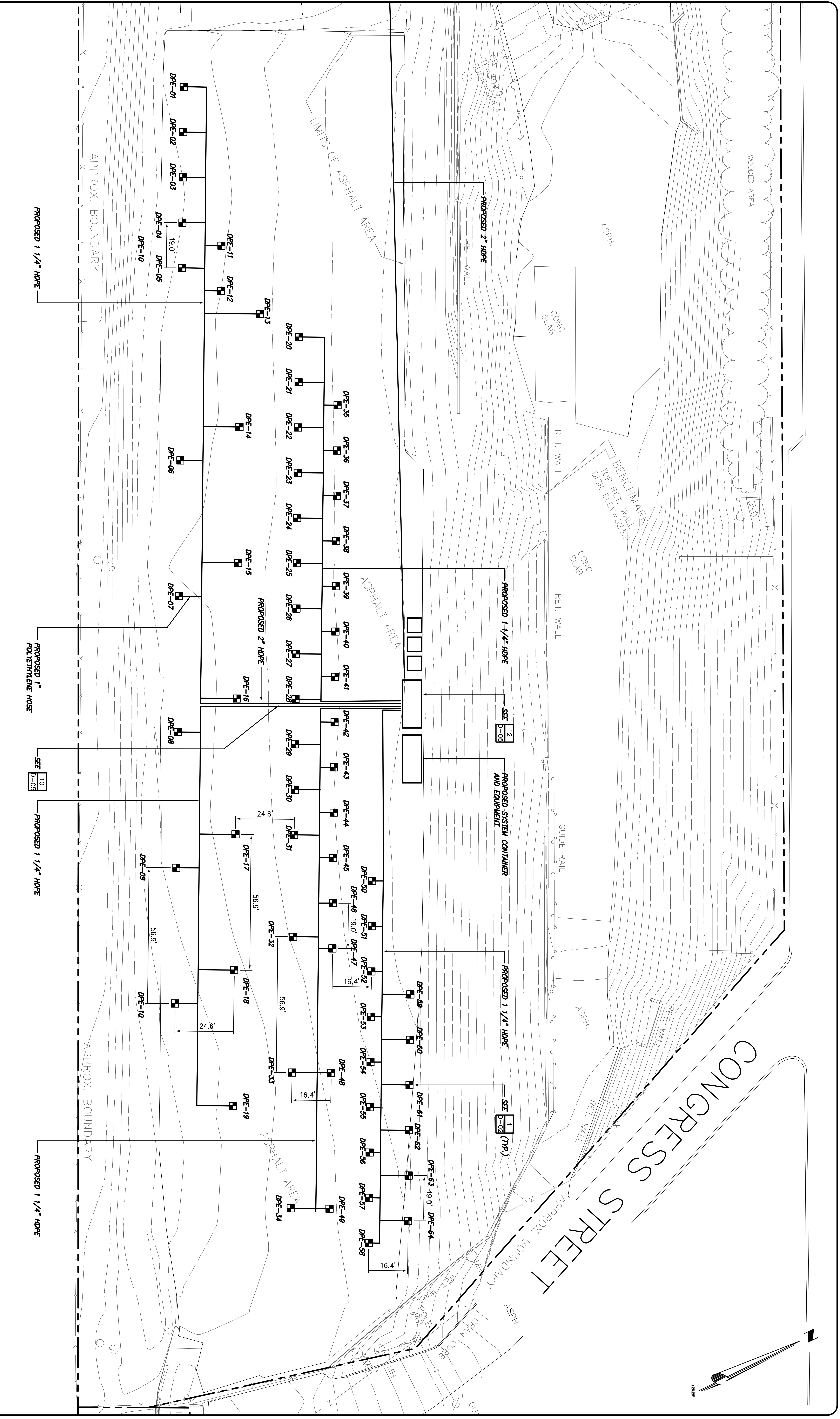
NOTE:
WELL LOCATIONS INDICATED ON DRAWING SHEET D-01.
EXACT LOCATION OF PIPING WILL BE DETERMINED IN THE FIELD.

LEGEND:

▪ - DUAL PHASE EXTRACTION WELL LOCATION



PLAN
SCALE: 1"=20'

0 20 40
Scale in feet

M-02

SI GROUP
CONGRESS STREET FACILITY
PHASE 2 SITE PREPARATION

GROUNDWATER EXTRACTION
MANIFOLD PLAN

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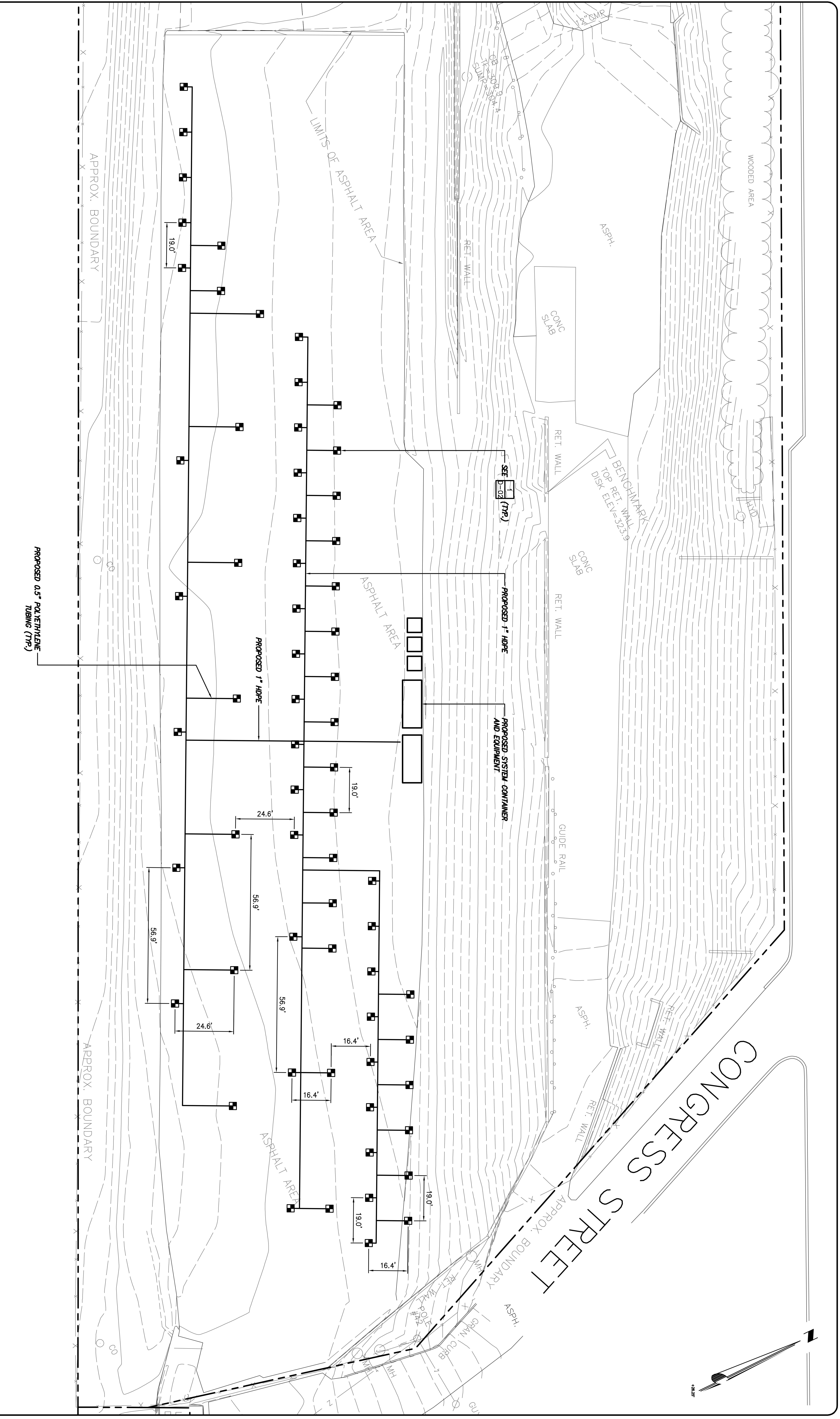
NOTE:
WELL LOCATIONS INDICATED ON DRAWING SHEET D-01. EXACT LOCATION OF PIPING WILL BE DETERMINED IN THE FIELD.

LEGEND:
▪ - DUAL PHASE EXTRACTION WELL LOCATION

PLAN
SCALE: 1"=20'
0 20 40
Scale in feet



M-03

SI GROUP
CONGRESS STREET FACILITY
PHASE 2 SITE PREPARATION

GROUNDWATER EXTRACTION
COMPRESSED AIR SYSTEM PLAN

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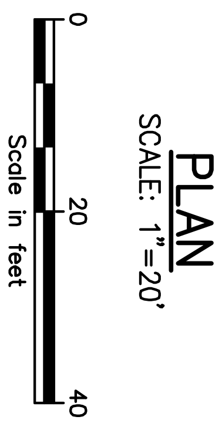
NOTE:
WELL LOCATIONS INDICATED ON DRAWING SHEET D-01. EXACT LOCATION OF PIPING WILL BE DETERMINED IN THE FIELD.

LEGEND:

- ◘ - DUAL PHASE EXTRACTION WELL LOCATION
- ▲ - SOIL VAPOR EXTRACTION WELL LOCATION



PLAN
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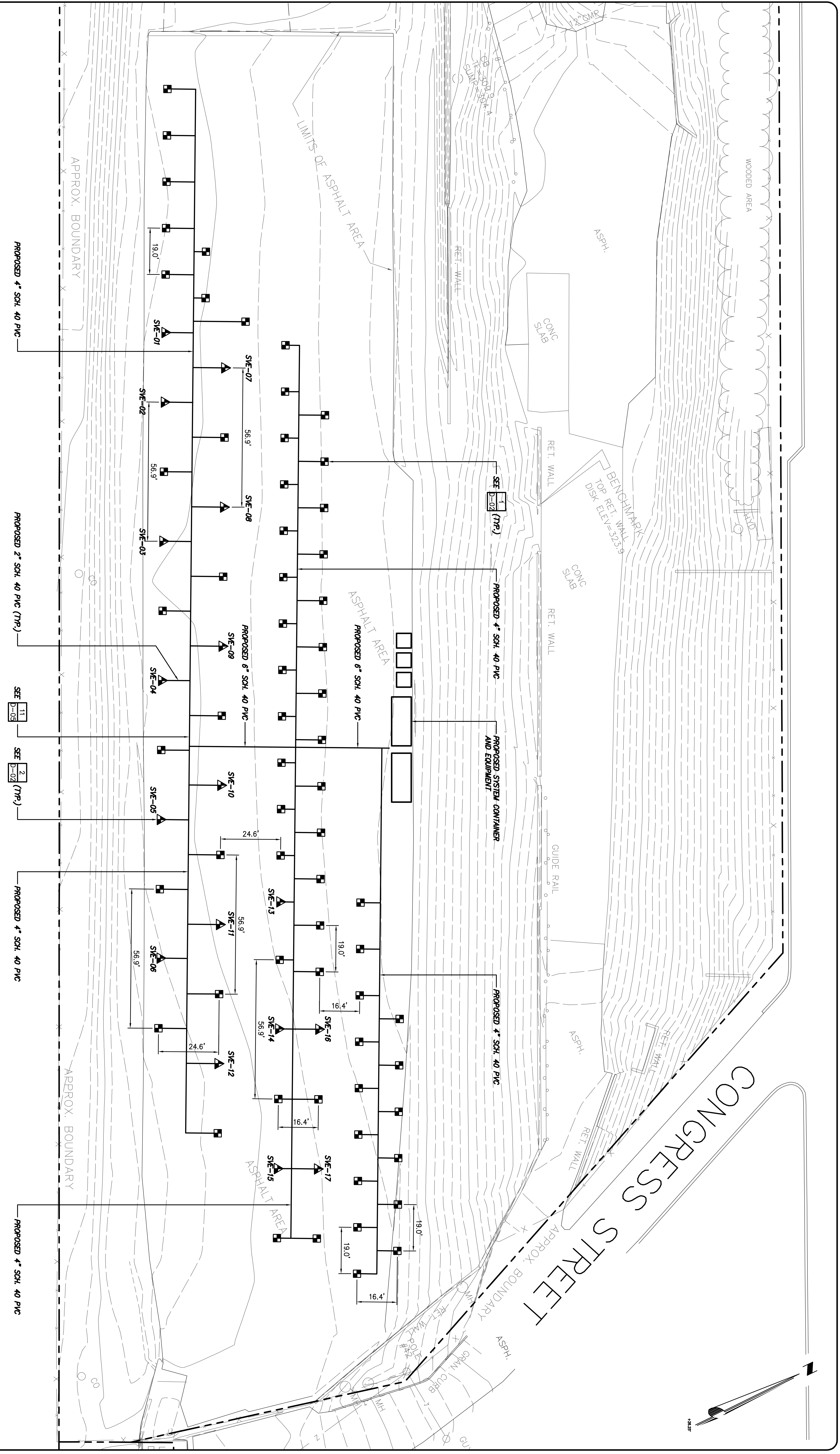
Scale in feet



M-04

SI GROUP
CONGRESS STREET FACILITY
PHASE 2 SITE PREPARATION

SOIL VAPOR EXTRACTION SYSTEM
MANIFOLD PLAN

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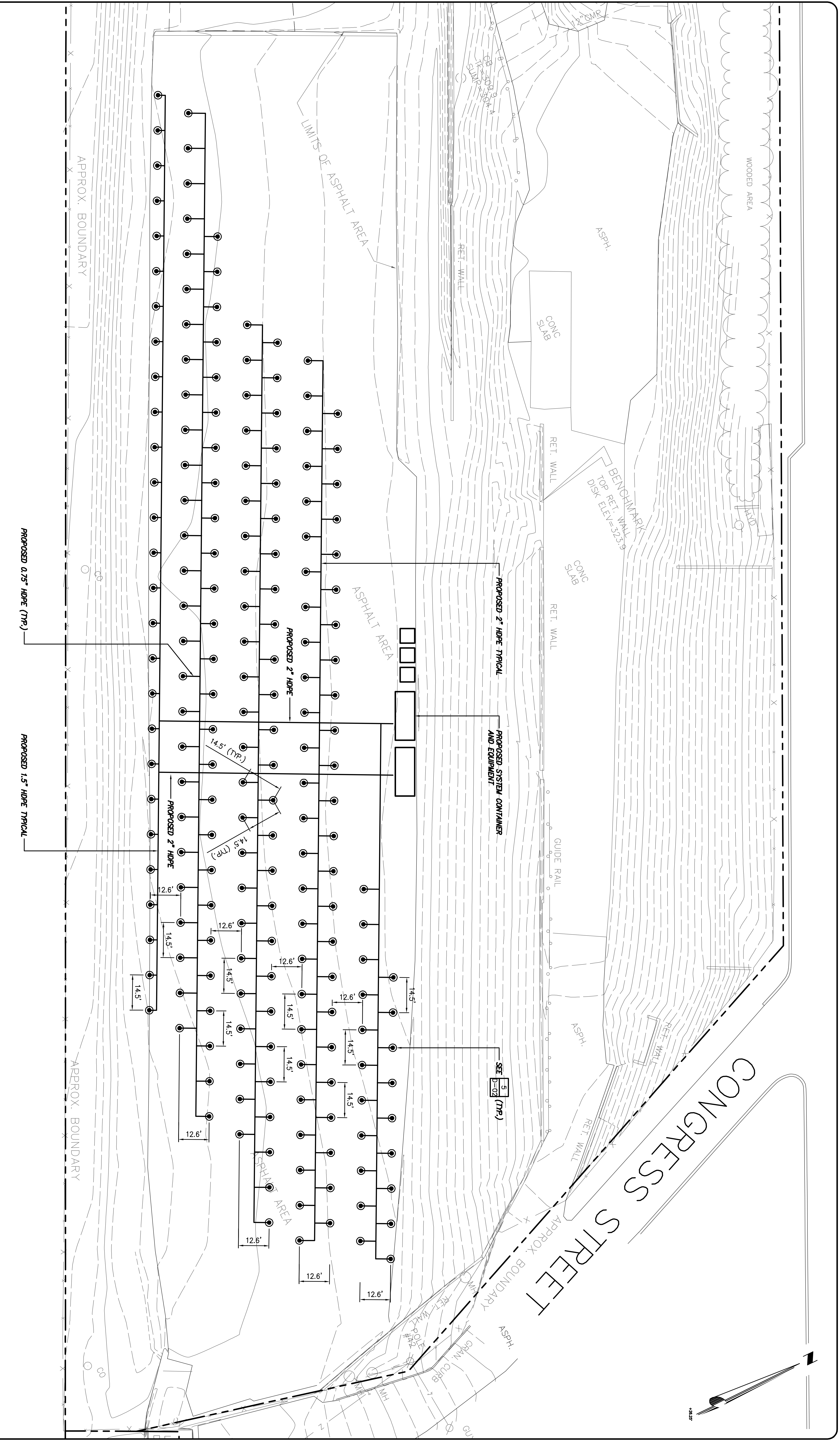
NOTES:
LOCATE BORINGS WITH RESPECT TO OTHER WELL SYSTEMS, LOCATIONS IDENTIFIED ON DRAWING SHEET D-01.
EXACT PIPING LOCATION WILL BE DETERMINED IN THE FIELD.
RETURN LINES WILL BE RUN PARALLEL AND DIRECTLY ADJACENT TO LINES DEPICTED

LEGEND:
● - SOIL HEATING WELL LOCATION



PLAN
SCALE: 1"=20'
0 20 40
Scale in feet

M-05

SI GROUP
CONGRESS STREET FACILITY
PHASE 2 SITE PREPARATION

CONDUCTIVE SOIL HEATING SYSTEM
PLAN

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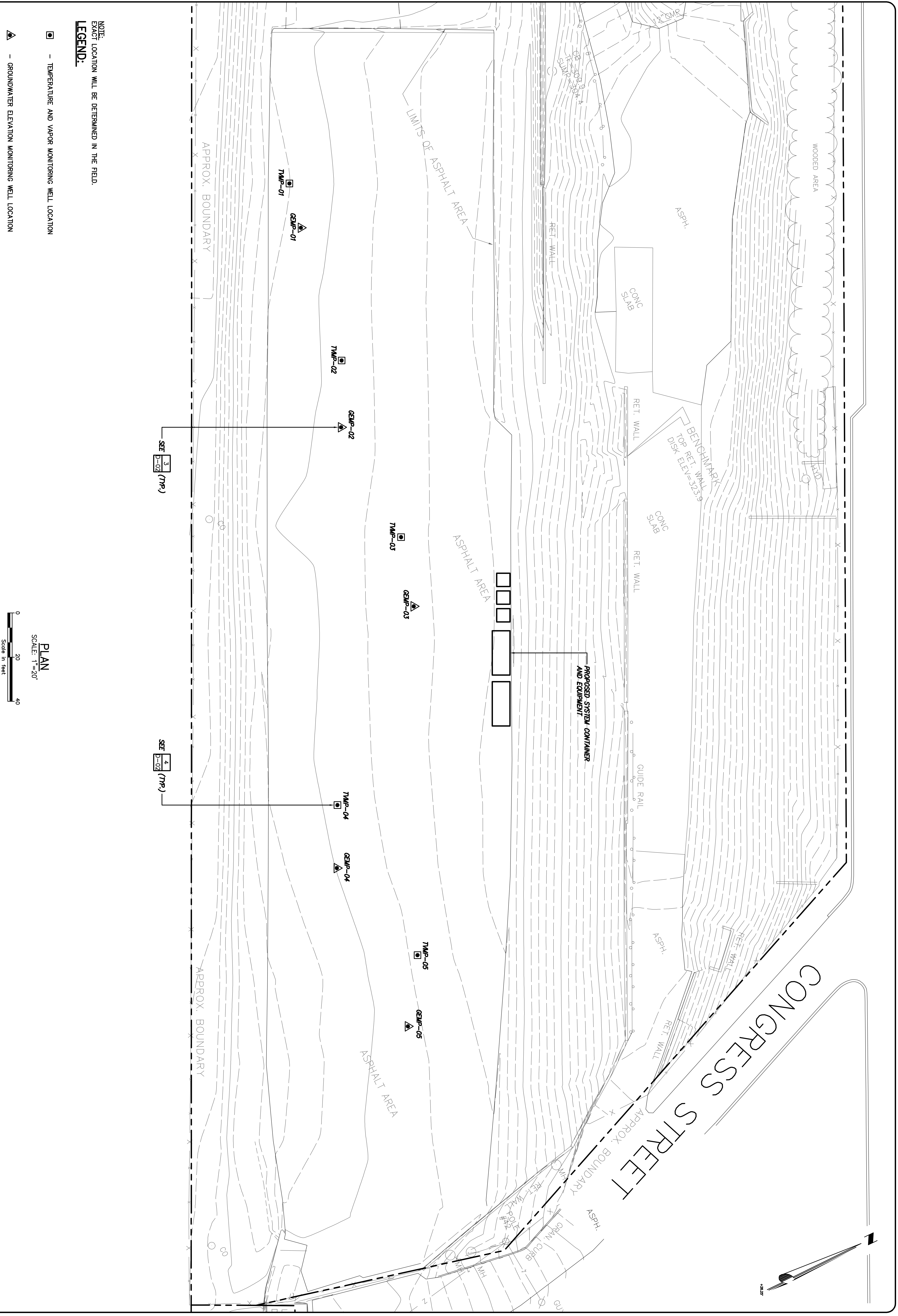
NOTE:
EXACT LOCATION WILL BE DETERMINED IN THE FIELD.

LEGEND:

- ▣ – TEMPERATURE AND VAPOR MONITORING WELL LOCATION
- ◬ – GROUNDWATER ELEVATION MONITORING WELL LOCATION



M-06

SI GROUP
CONGRESS STREET FACILITY
PHASE 2 SITE PREPARATION

MONITORING SYSTEM PLAN

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SOIL VAPOR EXTRACTION WELL SCHEDULE

WELL #	NORTHING	EASTING	GROUND ELEV.	TOP SCREEN ELEV.	BOTTOM SCREEN ELEV.
SVE-01	1442894.43	639319.83	304.50'	299.50'	284.50'
SVE-02	1442881.60	639345.22	304.50'	299.50'	284.50'
SVE-03	1442855.94	639396.00	304.75'	299.75'	284.75'
SVE-04	1442830.28	639446.78	304.25'	299.25'	284.25'
SVE-05	1442804.62	639397.56	304.25'	299.25'	284.25'
SVE-06	1442779.51	639548.36	304.00'	299.00'	284.00'
SVE-07	1442909.96	639343.58	305.50'	300.50'	285.50'
SVE-08	1442884.35	639394.41	305.50'	300.50'	285.50'
SVE-09	1442858.68	639445.18	305.50'	300.50'	285.50'
SVE-10	1442833.03	639395.97	305.50'	300.50'	285.50'
SVE-11	1442807.37	639446.74	305.25'	300.25'	285.25'
SVE-12	1442781.70	639597.51	304.50'	299.50'	284.50'
SVE-13	1442833.59	639549.36	306.25'	301.25'	286.25'
SVE-14	1442810.18	639595.72	305.75'	300.75'	285.75'
SVE-15	1442784.43	639646.69	305.50'	300.50'	285.50'
SVE-16	1442724.82	639603.11	306.50'	301.50'	286.50'
SVE-17	1442799.08	639654.09	306.00'	301.00'	286.00'

MONITORING POINT WELL SCHEDULE

WELL #	NORTHING	EASTING	GROUND ELEV.	TOP SCREEN ELEV.	BOTTOM SCREEN ELEV.
TVMP-01	1442918.73	639272.60	304.50'	NA	NA
GEMP-01	1442914.51	639292.85	304.50'	299.50'	284.50'
TVMP-02	1442904.51	639354.76	304.50'	NA	NA
GEMP-02	1442890.94	639381.72	304.75'	299.75'	284.75'
TVMP-03	1442813.97	639534.05	304.75'	NA	NA
GEMP-03	1442801.16	639559.45	304.25'	299.25'	284.25'
TVMP-04	1442893.30	639438.20	304.25'	NA	NA
GEMP-04	1442884.59	639468.77	304.25'	299.25'	284.25'
TVMP-05	1442816.44	639610.86	304.25'	NA	NA
GEMP-05	1442798.32	639637.78	304.00'	299.00'	284.00'

DUAL PHASE EXTRACTION WELL SCHEDULE

WELL #	NORTHING	EASTING	GROUND ELEV.	TOP SCREEN ELEV.	BOTTOM SCREEN ELEV.
DPE-01	1442939.25	639230.89	304.50'	299.50'	284.50'
DPE-02	1442930.70	639247.82	304.25'	299.25'	284.25'
DPE-03	1442922.15	639264.75	304.00'	299.00'	284.00'
DPE-04	1442913.60	639281.67	304.00'	299.00'	284.00'
DPE-05	1442905.05	639298.60	304.25'	299.25'	284.25'
DPE-06	1442868.77	639370.61	304.50'	299.50'	284.50'
DPE-07	1442843.12	639421.39	304.50'	299.50'	284.50'
DPE-08	1442817.46	639472.17	304.25'	299.25'	284.25'
DPE-09	1442791.80	639522.95	304.25'	299.25'	284.25'
DPE-10	1442923.99	639297.54	303.50'	298.50'	283.50'
DPE-11	1442766.13	639573.72	304.75'	299.75'	284.75'
DPE-12	1442915.44	639314.47	305.00'	300.00'	285.00'
DPE-13	1442925.82	639330.34	305.75'	300.75'	285.75'
DPE-14	1442897.17	639369.02	305.50'	300.50'	285.50'
DPE-15	1442871.51	639419.79	305.75'	300.75'	285.75'
DPE-16	1442845.85	639470.57	305.50'	300.50'	285.50'
DPE-17	1442820.19	639521.35	305.50'	300.50'	285.50'
DPE-18	1442794.54	639572.14	304.75'	299.75'	284.75'
DPE-19	1442768.87	639622.91	304.25'	299.25'	284.25'
DPE-20	1442936.21	639346.21	306.50'	301.50'	286.50'
DPE-21	1442927.66	639363.14	306.50'	301.50'	286.50'
DPE-22	1442919.11	639380.07	306.50'	301.50'	286.50'
DPE-23	1442910.55	639397.00	306.50'	301.50'	286.50'
DPE-24	1442902.00	639413.93	306.50'	301.50'	286.50'
DPE-25	1442893.45	639430.86	306.50'	301.50'	286.50'
DPE-26	1442884.90	639447.79	306.50'	301.50'	286.50'
DPE-27	1442876.35	639464.72	306.50'	301.50'	286.50'
DPE-28	1442867.80	639481.65	306.50'	301.50'	286.50'
DPE-29	1442859.25	639498.57	306.50'	301.50'	286.50'
DPE-30	1442850.70	639515.50	306.50'	301.50'	286.50'
DPE-31	1442842.15	639532.43	306.25'	301.25'	286.25'
DPE-32	1442822.93	639570.53	306.00'	301.00'	286.00'
DPE-33	1442797.26	639621.30	305.50'	300.50'	285.50'
DPE-34	1442771.61	639672.09	305.25'	300.25'	285.25'
DPE-35	1442938.04	639379.01	307.00'	302.00'	287.00'
DPE-36	1442929.49	639395.94	307.00'	302.00'	287.00'
DPE-37	1442920.94	639412.87	307.00'	302.00'	287.00'
DPE-38	1442912.39	639429.80	307.00'	302.00'	287.00'
DPE-39	1442903.84	639446.73	307.00'	302.00'	287.00'
DPE-40	1442895.29	639463.66	307.00'	302.00'	287.00'
DPE-41	1442886.74	639480.59	307.00'	302.00'	287.00'
DPE-42	1442878.19	639497.51	307.00'	302.00'	287.00'
DPE-43	1442869.64	639514.44	307.00'	302.00'	287.00'
DPE-44	1442861.09	639531.37	307.00'	302.00'	287.00'
DPE-45	1442852.54	639548.30	307.00'	302.00'	287.00'
DPE-46	1442843.98	639565.23	306.75'	301.75'	286.75'
DPE-47	1442835.43	639582.16	306.75'	301.75'	286.75'
DPE-48	1442811.90	639628.70	306.25'	301.25'	286.25'
DPE-49	1442786.14	639679.43	305.75'	300.75'	285.75'
DPE-50	1442862.92	639564.17	307.50'	302.50'	287.50'
DPE-51	1442854.37	639581.10	307.50'	302.50'	287.50'
DPE-52	1442845.82	639598.03	307.50'	302.50'	287.50'
DPE-53	1442837.27	639614.96	307.25'	302.25'	287.25'
DPE-54	1442828.72	639631.89	307.00'	302.00'	287.00'
DPE-55	1442820.17	639648.82	306.75'	301.75'	286.75'
DPE-56	1442811.62	639665.75	306.50'	301.50'	286.50'
DPE-57	1442803.07	639682.66	306.50'	301.50'	286.50'
DPE-58	1442794.52	639699.60	306.50'	301.50'	286.50'
DPE-59	1442856.21	639613.90	308.25'	303.25'	288.25'
DPE-60	1442847.65	639630.83	307.75'	302.75'	287.75'
DPE-61	1442839.10	639647.76	307.50'	302.50'	287.50'
DPE-62	1442830.55	639664.69	307.50'	302.50'	287.50'
DPE-63	1442822.00	639681.62	307.00'	302.00'	287.00'
DPE-64	1442813.45	639698.54	307.00'	302.00'	287.00'

NOTES:

1. ALL SHOWN ELEVATIONS AND DEPTHS SHALL BE CONSIDERED APPROXIMATE, SUBJECT TO FIELD VERIFICATION.
2. LOCATIONS AND ELEVATIONS FOR EACH OF THE CONDUCTIVE SOIL HEATING BORINGS WILL NOT BE SHOWN THE BORINGS WILL BE LOCATED IN THE FIELD USING THE ESTABLISHED OFFSET INDICATED ON SHEET M-06.

No.	Submittal / Revision	App'd	By	Date
1	NYSDEC SUBMITTAL	RML	BB/GM	09/12

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THE SUBSTANCE INSIDE

RICHARD M. LOEWENSTEIN JR.
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PHASE 2 SITE PREPARATION

WELL SCHEDULES

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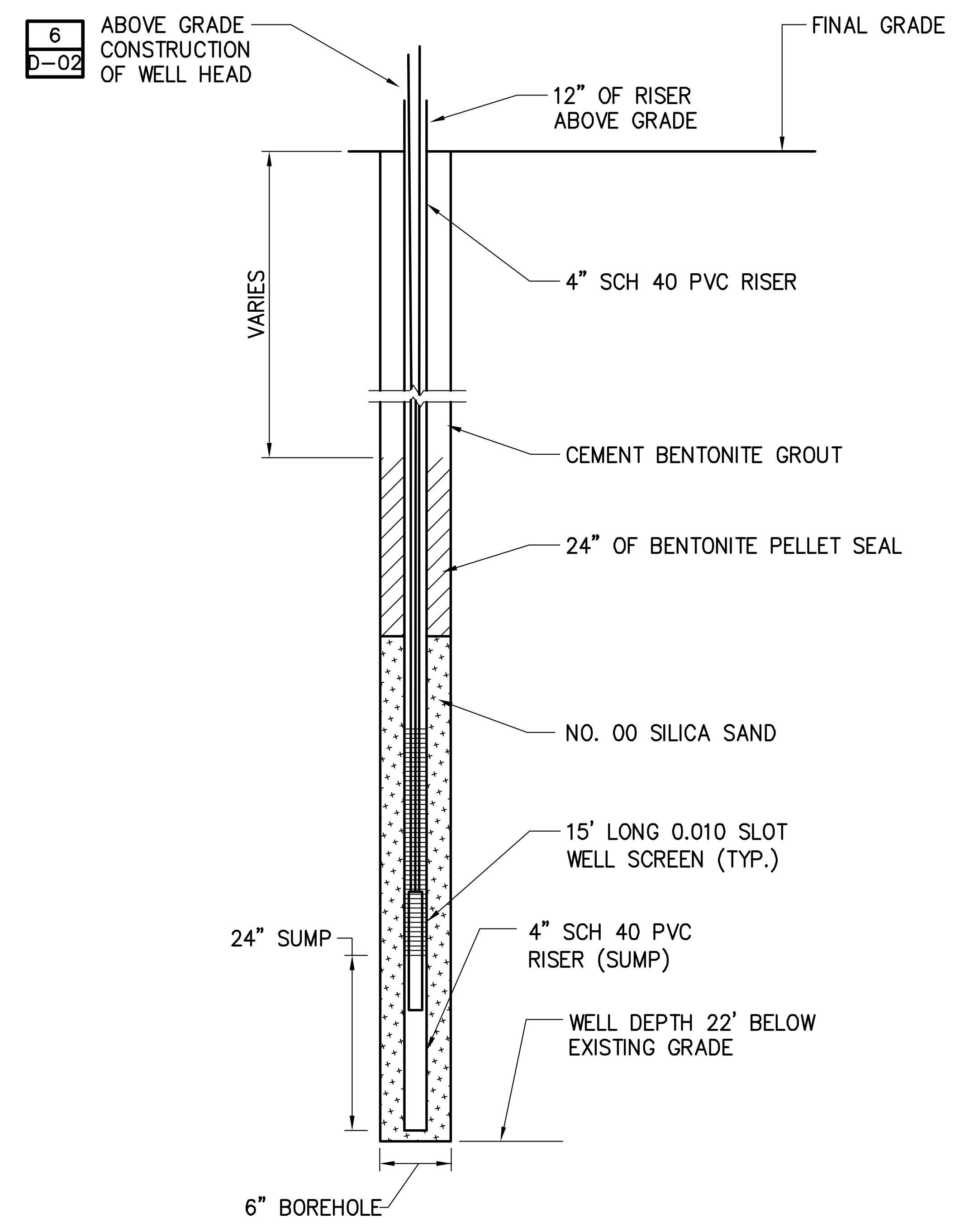
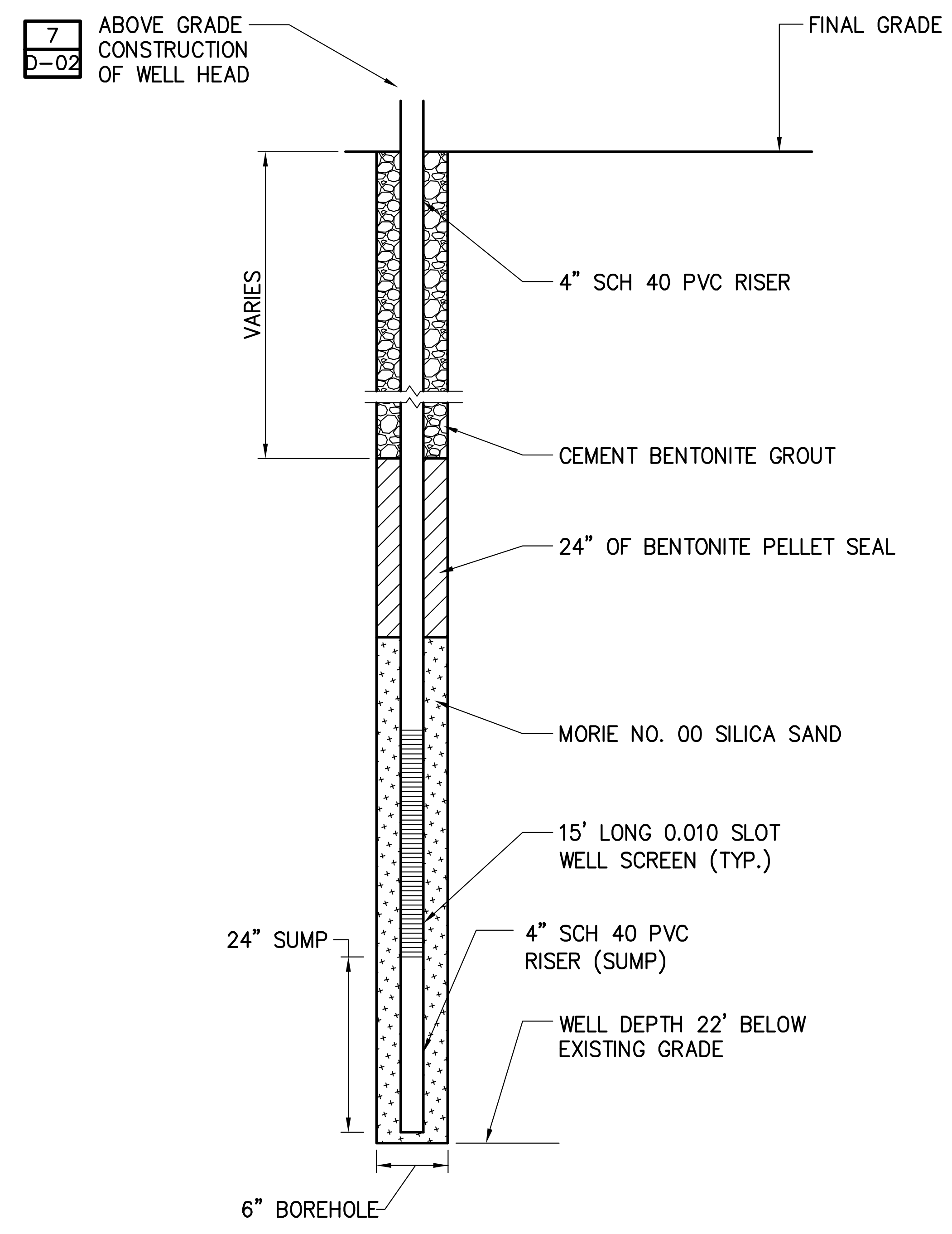
D-01



1 **TYPICAL DUAL PHASE EXTRACTION WELL DETAIL**
NOT TO SCALE



2 **TYPICAL SOIL VAPOR EXTRACTION WELL DETAIL**
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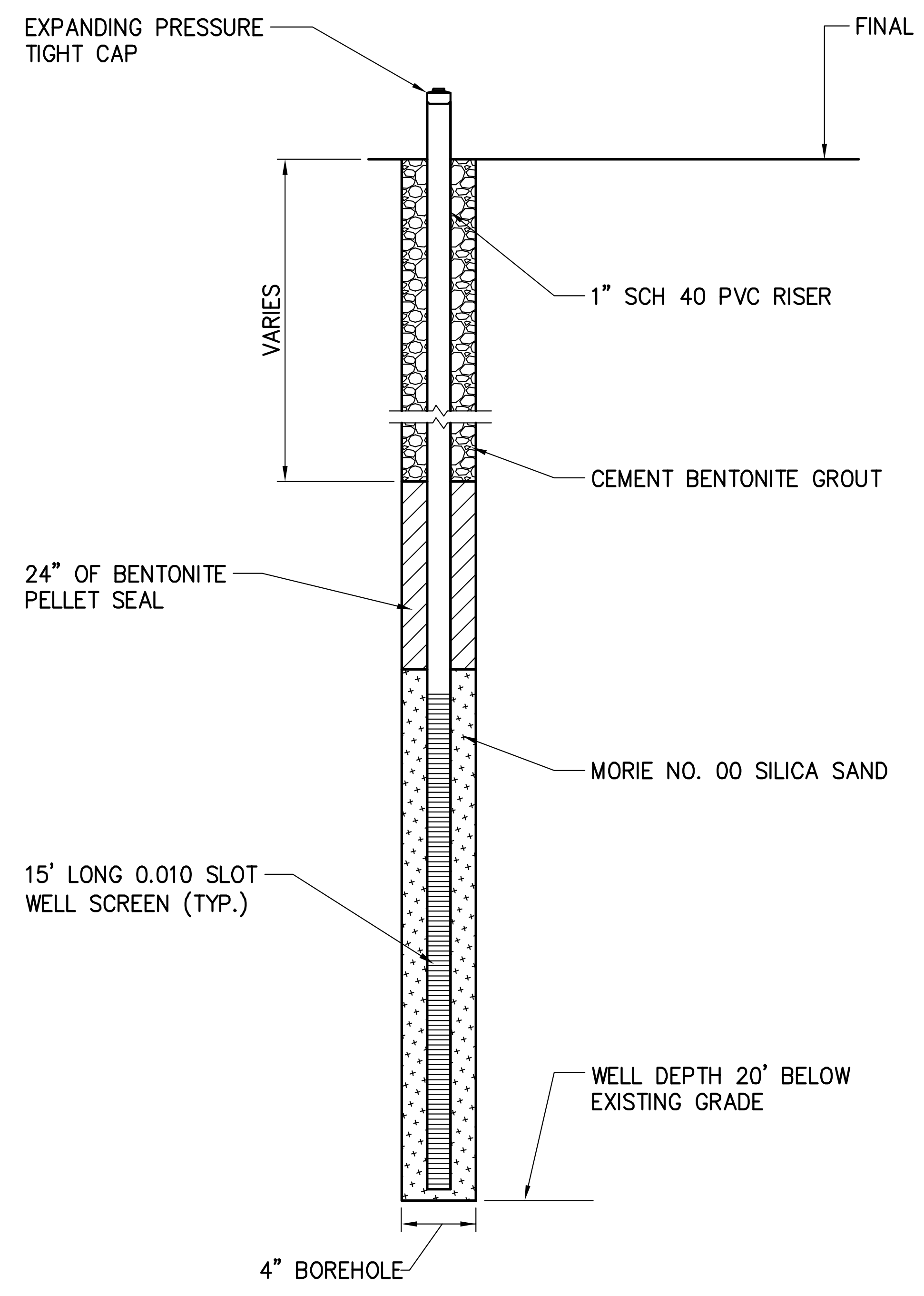

3 **TYPICAL GROUNDWATER ELEVATION MONITORING WELL DETAIL**
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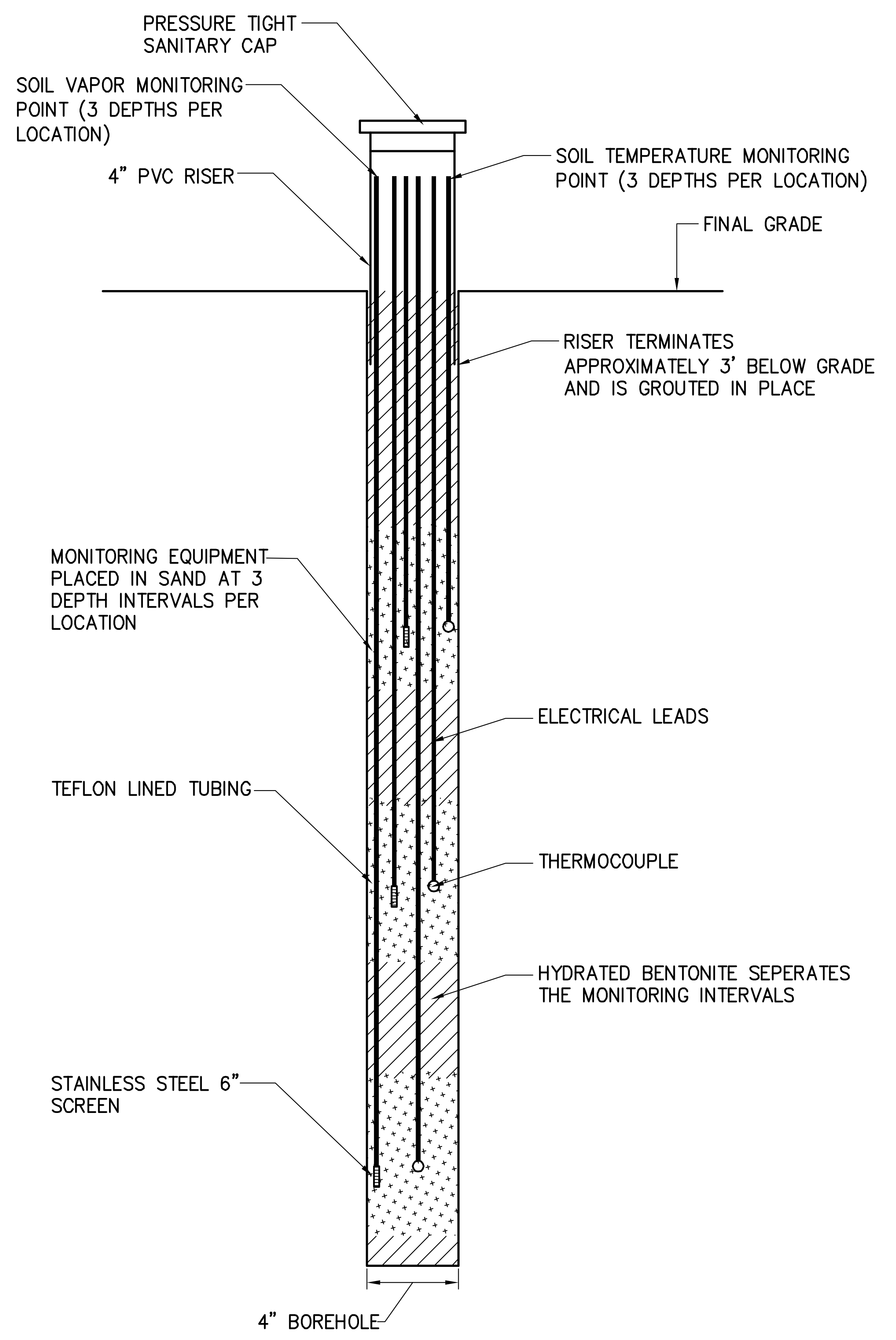

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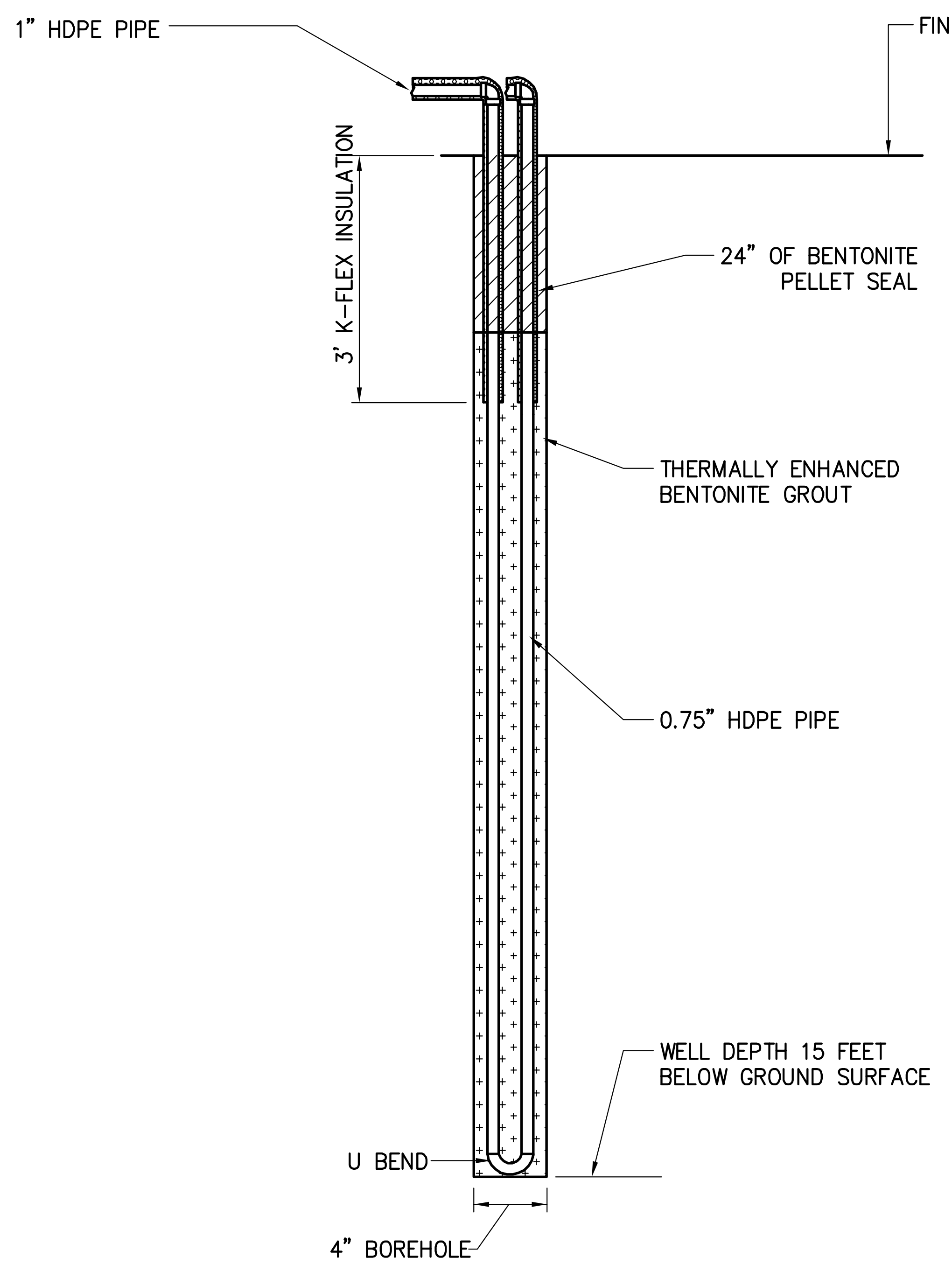
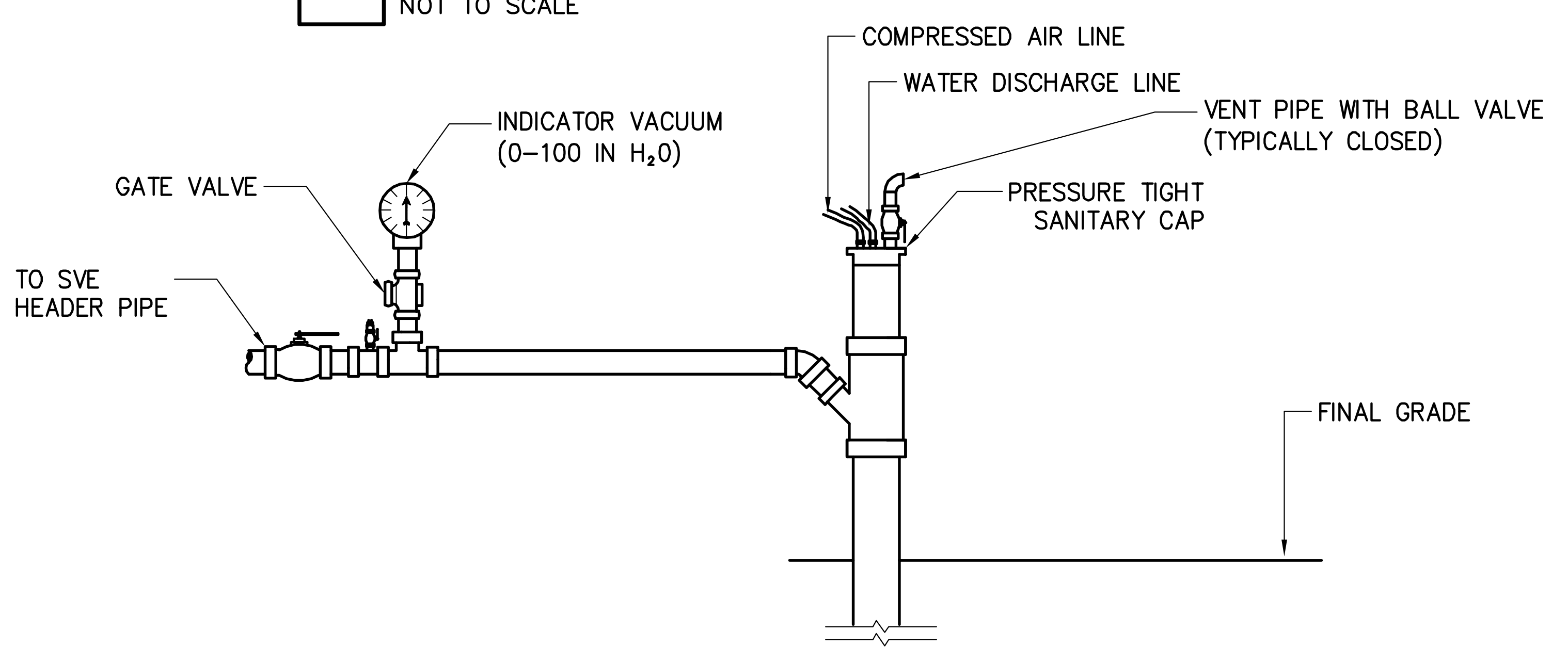


5 **TYPICAL CONDUCTIVE SOIL HEATING WELL**
NOT TO SCALE



6 **TYPICAL DUAL PHASE EXTRACTION WELL HEAD DETAIL**
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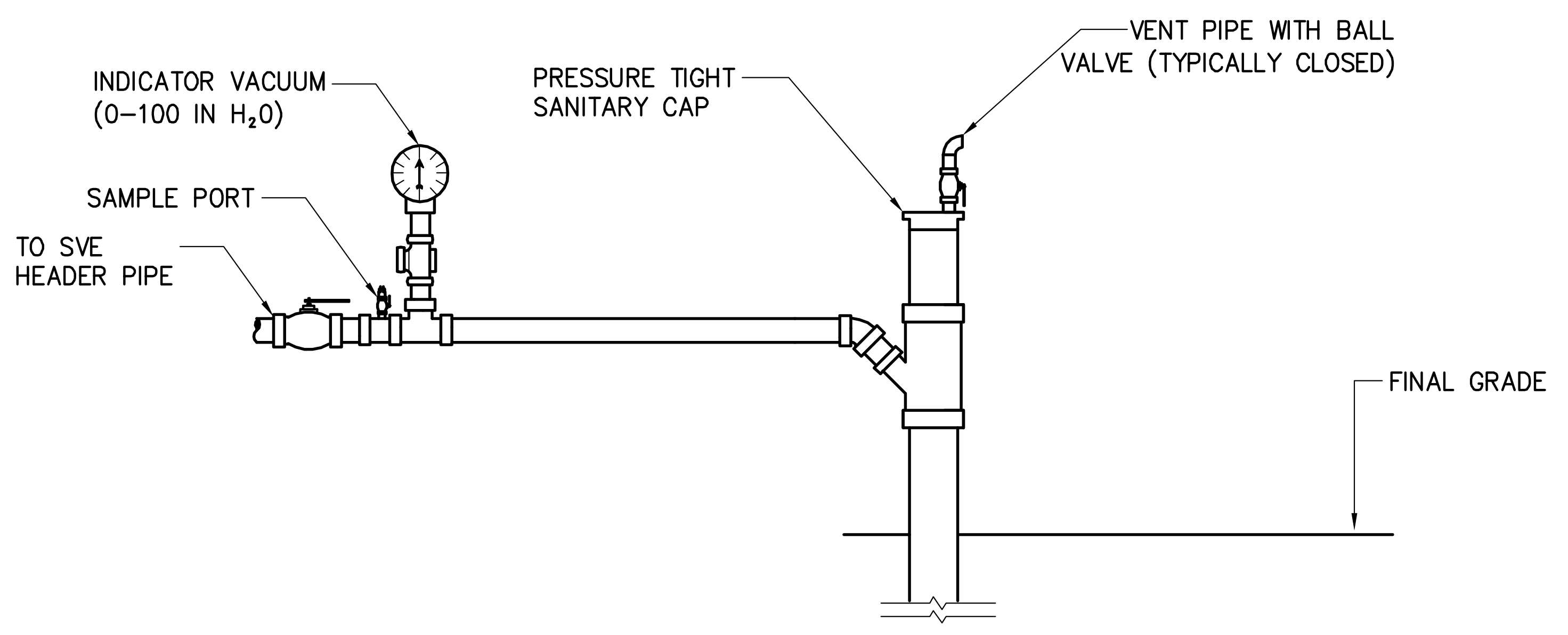

7 **TYPICAL SOIL VAPOR EXTRACTION WELL HEAD DETAIL**
NOT TO SCALE

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SYSTEM COMPONENT DETAILS

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Project No.: 15091
Scale: AS NOTED

D-02

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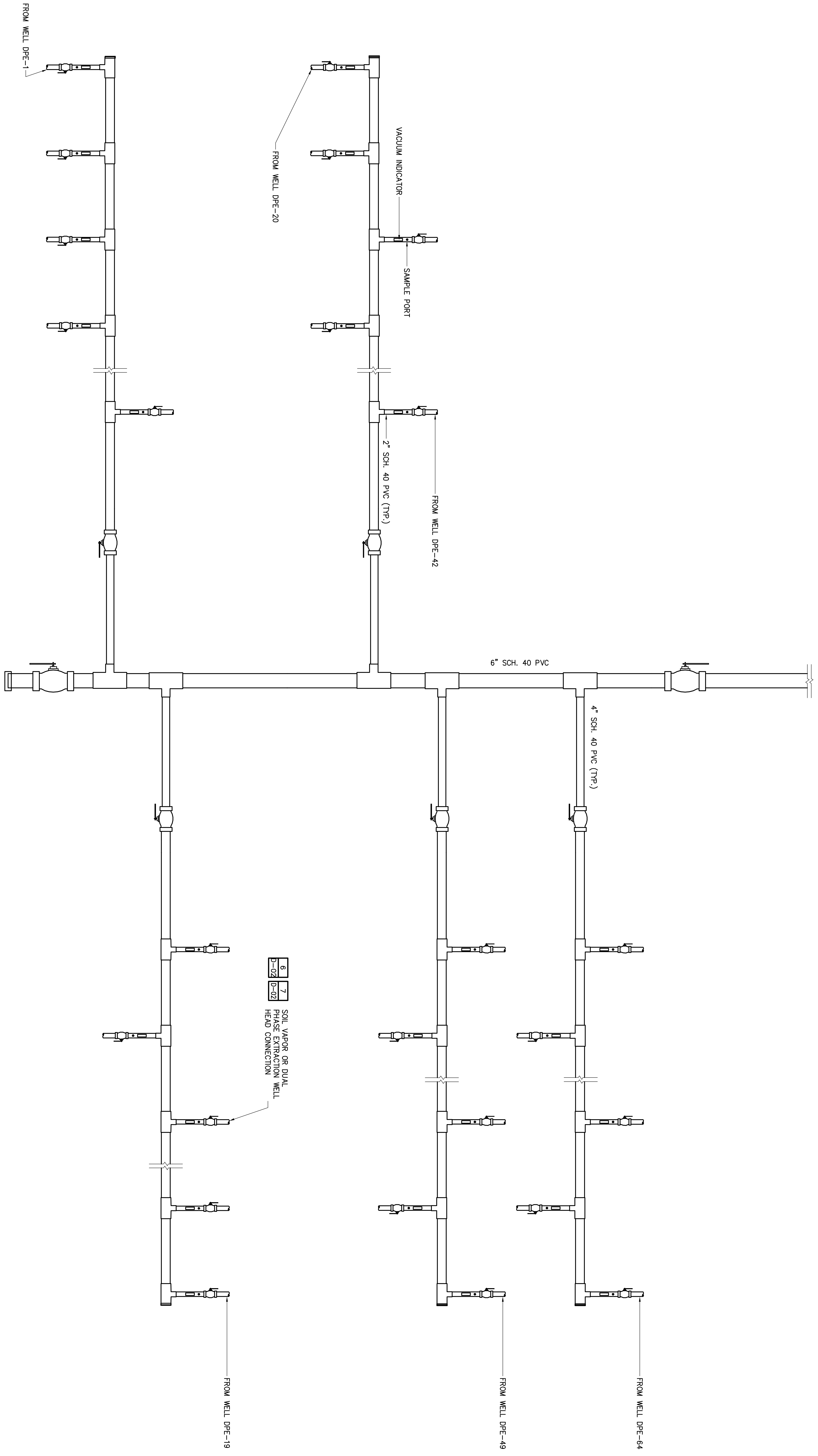

8

VACUUM MANIFOLD DETAIL

NOT TO SCALE

D-03

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CONGRESS STREET FACILITY
PHASE 2 SITE PREPARATION

SOIL VAPOR EXTRACTION SYSTEM
DETAILS

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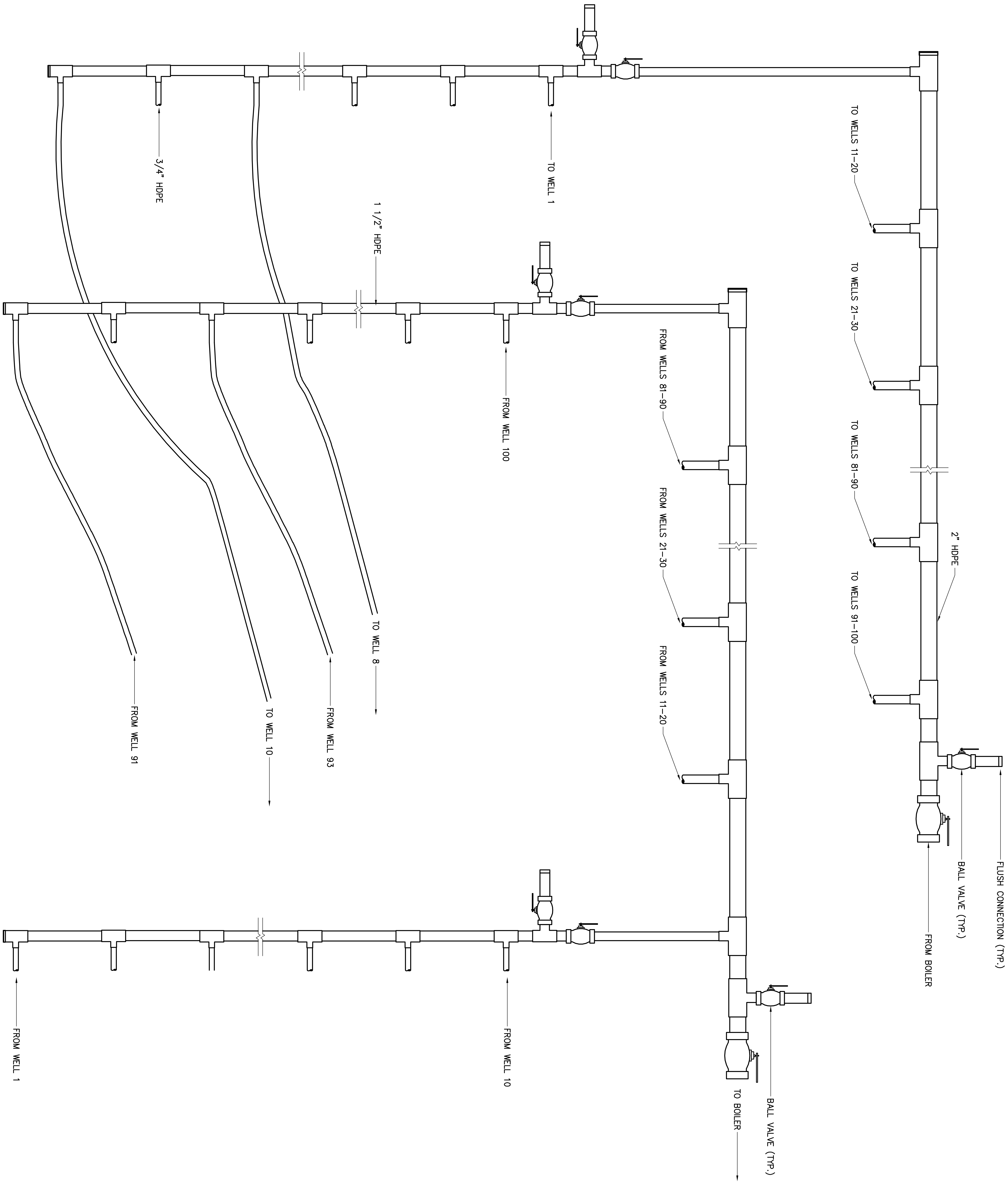
NOTE:
ABOVE GROUND PIPING TO BE FITTED WITH INSULATION
TO MINIMIZE HEAT LOSS.



9 SOIL HEATING MANIFOLD DETAIL
NOT TO SCALE

D-04

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PHASE 2 SITE PREPARATION

SOIL HEATING SYSTEM DETAILS

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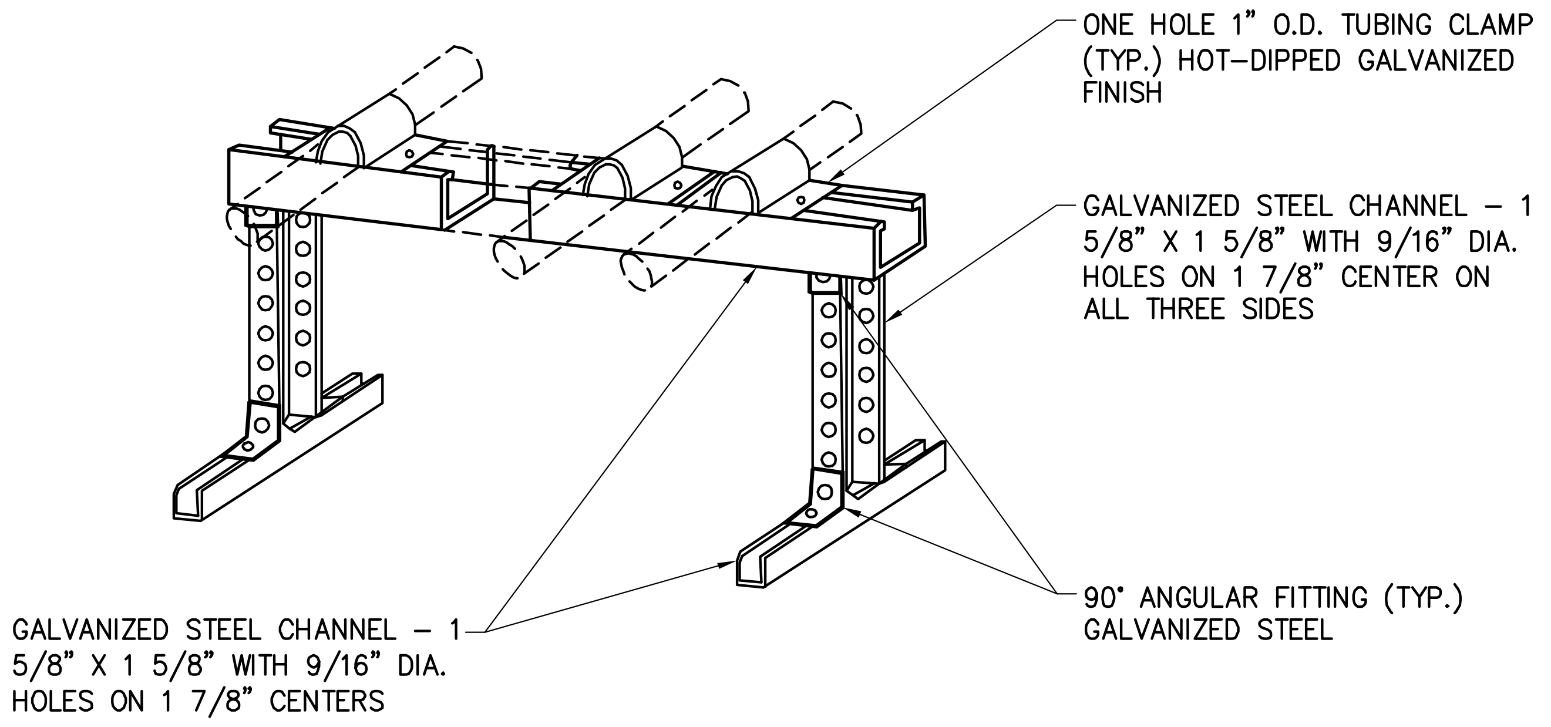

10 RACK TYPE PIPE SUPPORTS DETAIL

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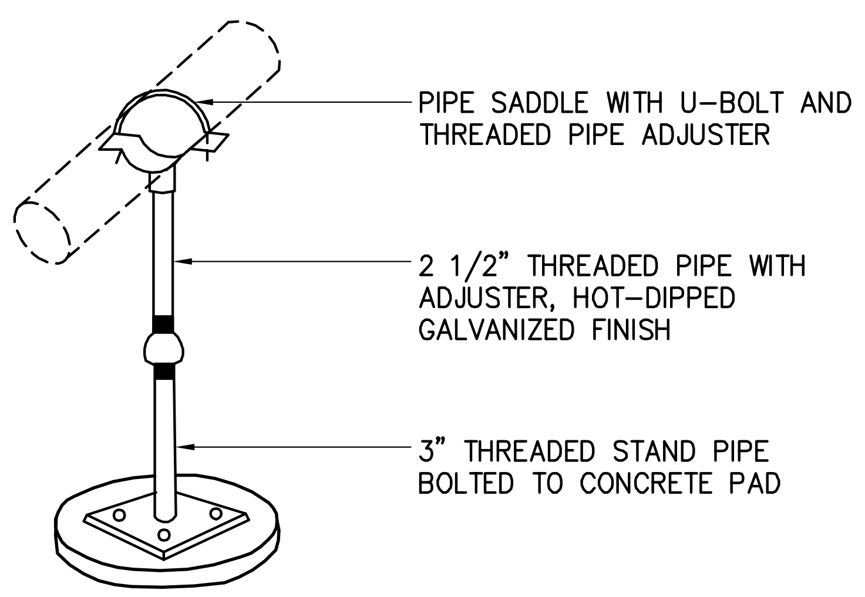
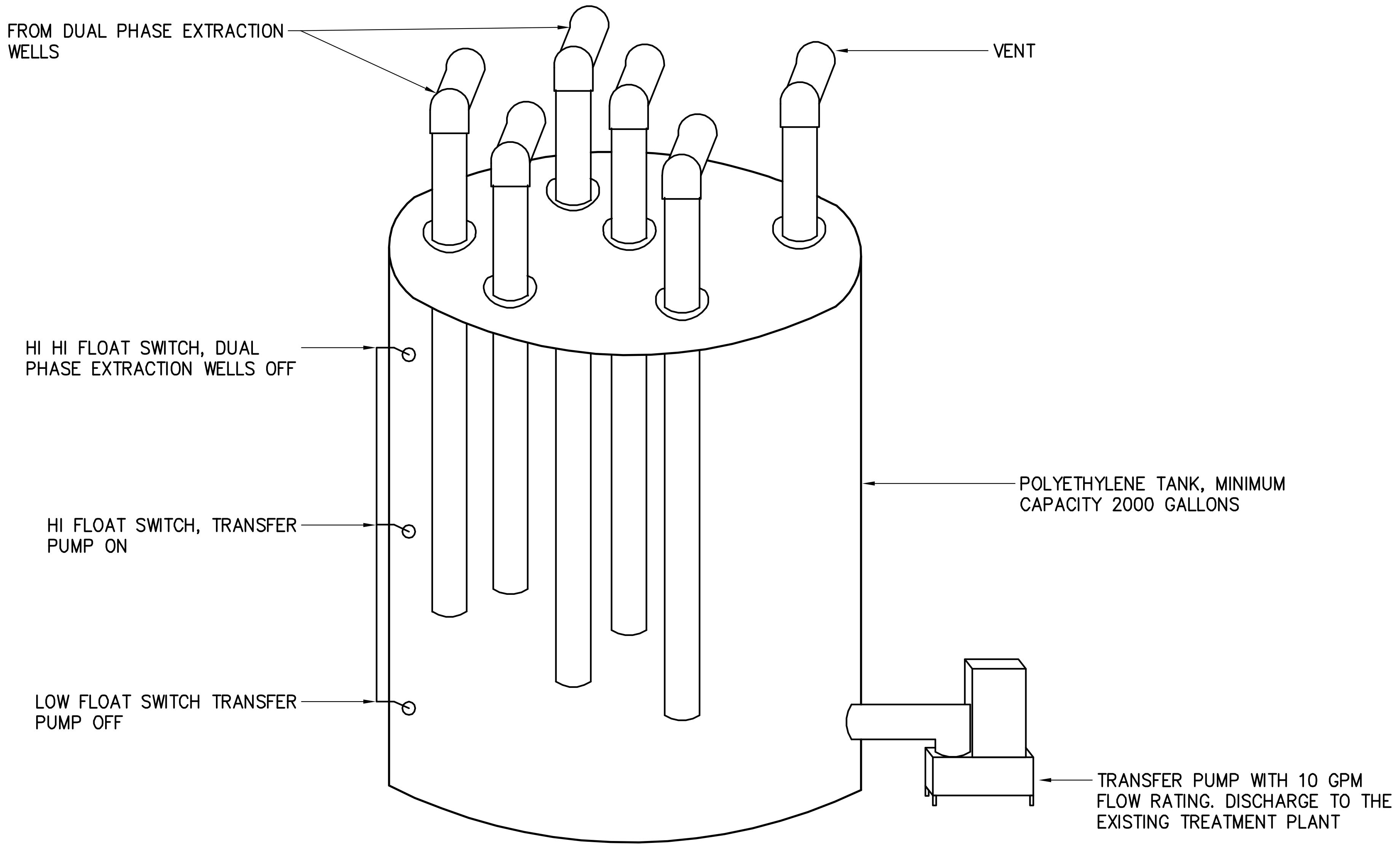


11 SINGLE PIPE SUPPORT DETAIL

NOT TO SCALE



12 GROUNDWATER STORAGE AND TRANSFER TANK

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SYSTEM PLAN AND DETAILS

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D-05

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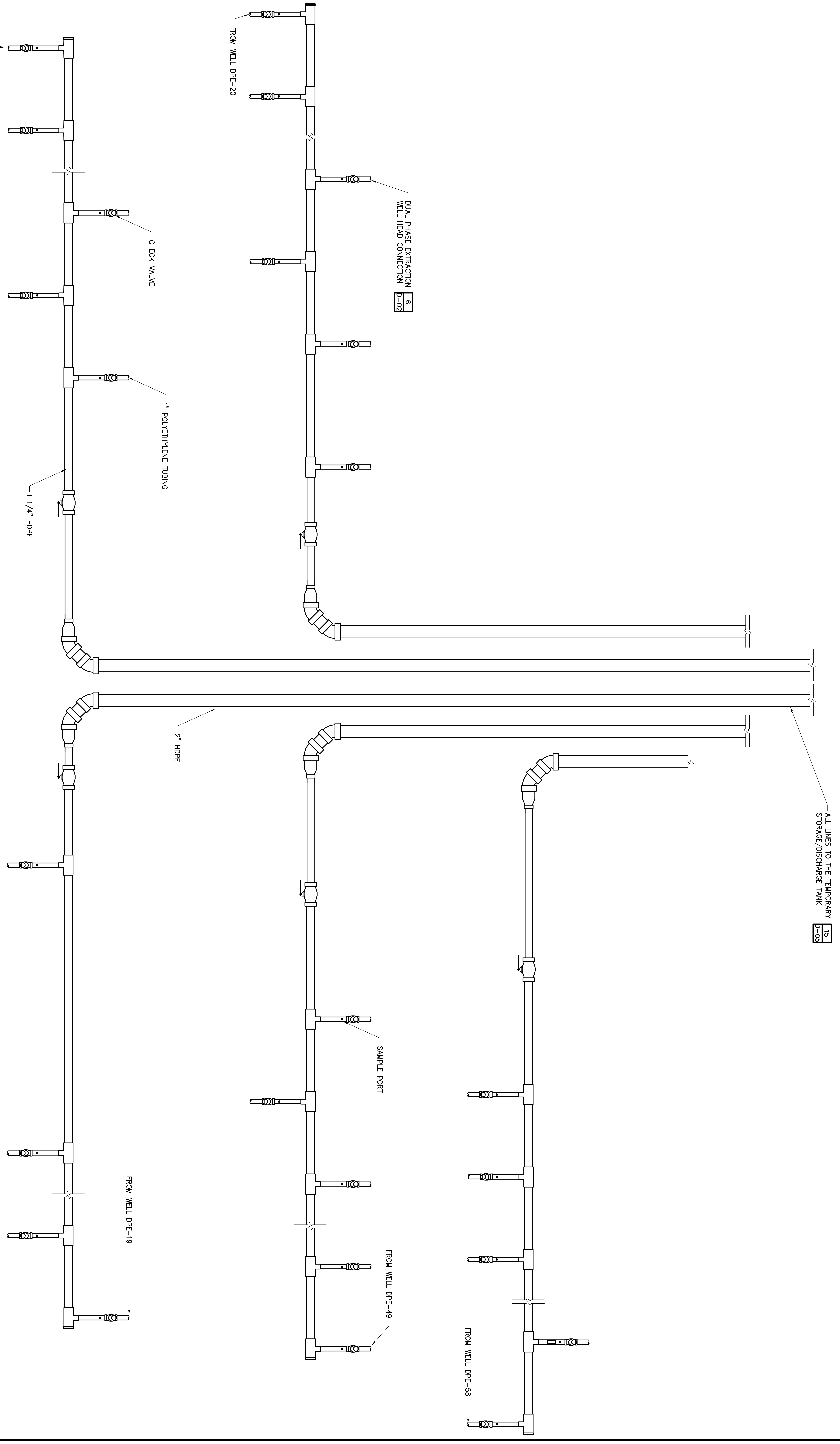
13 DEWATERING SYSTEM MANIFOLD DETAIL

NOT TO SCALE



D-06

SI GROUP
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PHASE 2 SITE PREPARATION

DEWATERING SYSTEM DETAIL

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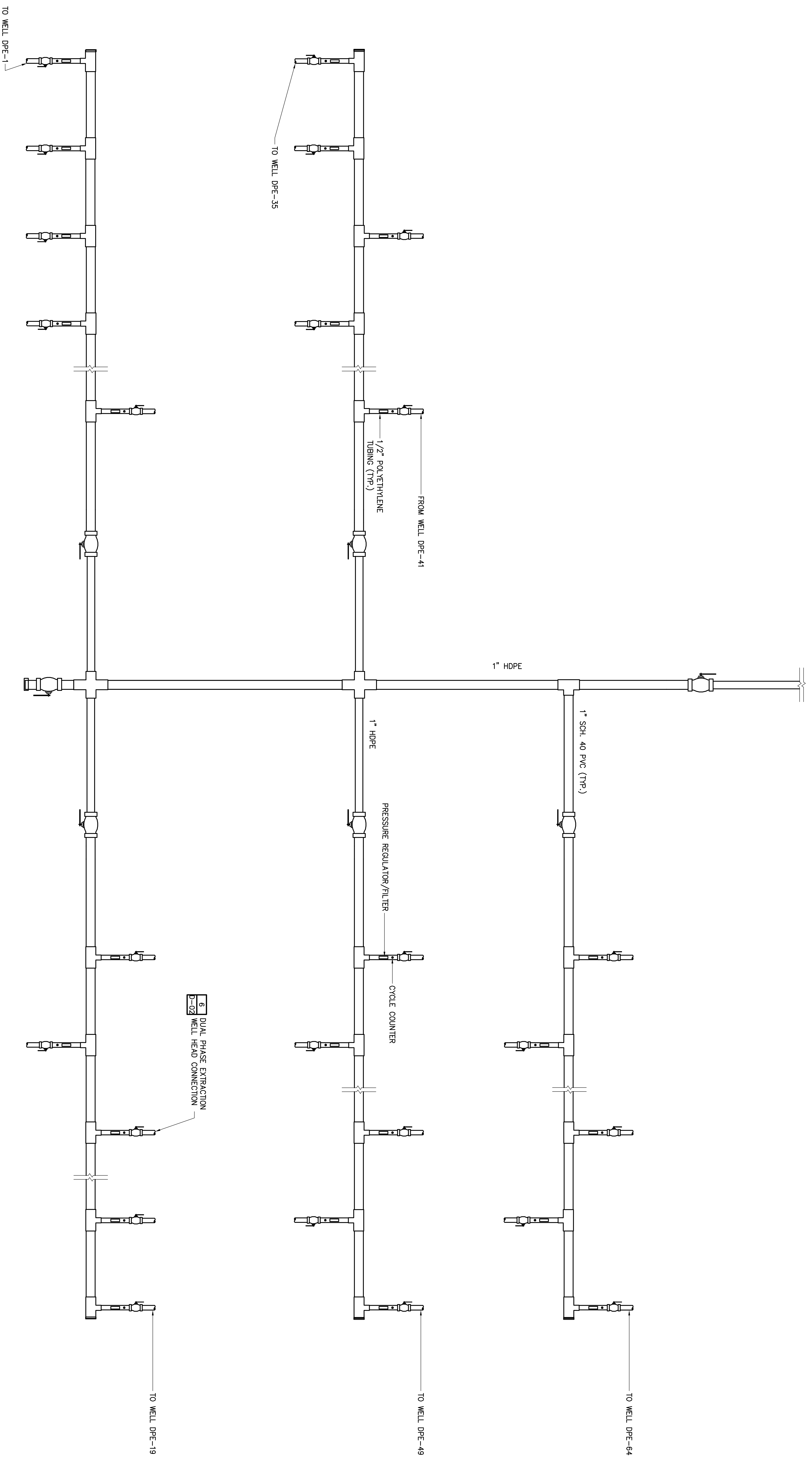

14 COMPRESSED AIR MANIFOLD DETAIL

NOT TO SCALE

D-07

SI GROUP
CONGRESS STREET FACILITY
PHASE 2 SITE PREPARATION

COMPRESSED AIR SYSTEM DETAILS

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APPENDIX B

NYSDEC Record of Decision

RECORD OF DECISION

Schenectady International -10th St Plant
Operable Unit Numbers: 02
State Superfund Project
Schenectady, Schenectady County
Site No. 447007
December 2010

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - RECORD OF DECISION

Schenectady International -10th St Plant
Operable Unit Number 02
State Superfund Project
Schenectady, Schenectady County
Site No. 447007
December 2010

Statement of Purpose and Basis

This document presents the remedy for Operable Unit Number 02 of the Schenectady International -10th St Plant site, a Class 2 inactive hazardous waste disposal site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law, 6 NYCRR Part 375, and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for Operable Unit Number 02 of the Schenectady International -10th St Plant and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

The estimated present worth cost to implement the remedy for the Process Area Alternative P-5A) is $3,790,000.00. The cost to construct the remedy is estimated to be $3,790,000.00 and the estimated average annual cost is $0.00. The annual cost is $0.00 because this cost is part of the remedy for Operational Unit Number 1.

The estimated present worth cost to implement the remedy for the Fill Area (Alternative F-3) is $500,000.00. The cost to construct the remedy is estimated to be $500,000.00 and the estimated average annual cost is $0.00. The annual cost is $0.00 because this cost is part of the remedy for Operational Unit Number 1.

The elements of the proposed remedy are as follows:

Process Area Alternative P-5A (Thermally-Enhanced SVE):

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance and monitoring of the remedial program. Selection of the soil heating technology will be made with the approval of the Department based on its effectiveness. If the heating technology is not effective, thermal desorption (Alternative P-7A) will be implemented.

2. In order to facilitate in-situ treatment of impacted soils on the Site, it will be necessary to first remove existing surface slabs, building footings, and other surface obstructions present in the Process Area. The portion of concrete is estimated to be on the order of 170 cubic yards of concrete.

3. In order to backfill areas where concrete and associated soil is removed, approximately 2,500 tons of clean fill will be imported to the Process Area. Backfill material imported to the site will meet the requirements for commercial use as set forth in 6NYCRR part 375-6.7(d).

4. Thermally enhanced SVE using conduction or convective technology will be installed using Geoprobe™ or conventional drilling techniques. SVE units will be installed to a minimum depth of 12 feet and will likely be extended an additional two to three feet into the groundwater.

5. A dewatering system will be required to lower the water level 2 to 3 feet to maximize the total column of unsaturated soil and allow treatment of the total area.

6. It is also anticipated that after an initial period of continuous heating and vacuum extraction, the system will be modified to cyclic pulsing of alternating extraction and injection (biosparging) to optimize for bioremediation of SVOCs.

7. A thermally-enhanced SVE system will require treatment of VOCs in the air/off-gases emitted from the SVE system. Carbon adsorption or equivalent technology, in which pollutants are removed from the soil vapor extracted from the ground, has been used for estimating purposes and will require additional piping and treatment units on-site during remedial activities.

8. The level of cleanup will be monitored. Based on the success of remediation, SI Group may be able to request termination of the groundwater collection in the Process Area. It has been estimated that the Groundwater Collection System (GWCS) will remain in operation for approximately fifteen years following remediation. However, it will not terminate until protection of groundwater SCOs are achieved.

9. Figure 7 lays out the boundaries of the area to be subject to in-situ treatment..

Fill Area Alternative F-3 (Permeable Cap and Natural Attenuation):

10. In order to facilitate the implementation of this alternative, it will be necessary to first remove existing surface slabs, the loading dock and other surface obstructions present in the Fill Area. Product or other man made materials will be removed, tested and disposed of off-site.

11. In order to backfill areas where concrete is removed, approximately 50 yd^3 of clean fill will need to be imported to the Fill Area.

12. A permeable cover system will be installed over the Fill Area to further contain the contamination present in the waste mass while also encouraging the maximum amount of surface water to flow through the waste mass to the GWCS. The cap will be installed to tie into the existing Fill Area features (i.e. the Treatment Facility) and topography to the extent possible. Following the installation of the cover system, it will be necessary to modify existing monitoring/pumping wells.

13. It is expected that monitoring wells will be used to monitor the attenuation of the residual contamination; however, the contaminant concentrations are not expected to reach the cleanup goals for a minimum of 30 years across the entire Fill Area.

14. Figure 7 lays out the boundaries of the permeable cap.

The following applies to the entire site:

15. A site cover will be installed in areas not addressed by the permeable cap to allow for industrial use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil exceeds the industrial soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d). The soil cover will be placed over a demarcation layer. The upper six inches of the soil will be of sufficient quality to maintain a vegetation layer. Non-vegetated areas (buildings, roadways, parking lots, etc.) will be covered by either a paving system or concrete at least 6 inches thick

16. The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

17. To maximize the net environmental benefit, green remediation and sustainability efforts will be considered in the design and implementation of the remedy to the extent practicable, including:

    - energy efficiency
    - reducing green house gas emissions
    - encouraging low carbon technologies
    - conserve natural resources
    - increase recycling and reuse of clean materials
    - preserve open space and working landscapes
    - design cover systems to be usable for habitat or recreation

18. The Department will impose institutional controls in the form of an environmental easement that:

(a) requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3).

(b) land use is subject to local zoning laws, the remedy allows the use and development of the controlled property for industrial use only.

(c) restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Department, NYSDOH or County DOH;

(d) prohibits agriculture or vegetable gardens on the controlled property;

(e) requires compliance with the Department approved Site Management Plan;

19. Since the remedy results in contamination remaining at the site that does not allow for unrestricted use, a Site Management Plan is required, which includes the following:

(a) an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to assure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls:

The Environmental Easement discussed in Paragraph 19 above.

Engineering Controls:

The soil cover discussed in Paragraph 16.

This plan includes, but may not be limited to:

(i) Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;

(ii) descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;

(iii) provisions for the management and inspection of the identified engineering controls;

(iv) maintaining site access controls and Department notification; and

(v) the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls;

(b) a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but is not limited to:

(i) monitoring of groundwater to assess the performance and effectiveness of the remedy and the attenuation of the residual contamination;

(ii) schedule of monitoring and frequency of submittals to the Department; and

(iii) provision to evaluate the potential for soil vapor intrusion for existing buildings if building use changes significantly or if a vacant building become occupied and for any buildings developed on the site, including provision for mitigation of any impacts identified.

(c) an Operation and Maintenance Plan to assure continued operation, maintenance, monitoring, inspection, and reporting of for any mechanical or physical components of the remedy. The plan includes, but is not limited to:

(i) compliance monitoring of treatment systems to assure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;

(ii) maintaining site access controls and Department notification; and

(iii) providing the Department access to the site and O&M records.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

DEC 21 2010

Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

RECORD OF DECISION

Schenectady International -10th St Plant
Schenectady, Schenectady County
Site No. 447007
October 2010

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that will be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: SITE DESCRIPTION AND HISTORY

The SI Group plant at Congress Street and Tenth Avenue is a former chemical manufacturing facility located at this location since 1910 in the City of Schenectady, Schenectady County. It is Site No. 447007 on the NYS Registry of Inactive Hazardous Waste Sites (Registry). The site is approximately 7.0 acres in size and is located southwest of the intersection of 10th Street and Congress Street. Residences in a suburban neighborhood are 400 feet to the north and east of the site. The facility sits on a steep embankment. At the bottom of this embankment is Cowhorn Creek, a Class C stream (suitable for fish survival and propagation). Railroad tracks and a service road lie south of the site and outside of the security fence. A spur from the railroad and an area that previously contained tanks are uphill (partly up the embankment) from the swale and inside the security fence. In July 1996, the Department made the decision to split the site into two operable units. An operable unit represents a portion of the site remedy that for technical or administrative reasons can be addressed separately to eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. The first operable unit, (OU1), addressed terminating the pathways by which the contaminants were being released off-site. The ROD for OU1, issued in March 1998, required the installation of groundwater extraction wells and a treatment system. The system is currently active. Operable Unit (OU) No. 2 consists of the Fill area that is an area in the southwest corner of the facility where materials from the operations were placed, and the Process area that is the area on-site that was historically used for chemical processing, storage and handling. From the early 1900's to 1997, SI Group manufactured insulating coatings and other chemical products at their Congress Street facility. Spills, ranging from a few gallons to a few hundred gallons, over the period of operation have contaminated a significant volume of soils. Contaminated soils are beneath the former process buildings, in transportation areas, southwest of the process buildings and up to the "swale area" between the facility and the railroad tracks.

Operable Unit (OU) Number 02, which is the subject of this document, consists of the Fill area that is an area in the southwest corner of the facility where materials from the operations were placed, and the Process area that is the area on-site that was historically used for chemical processing, storage and handling.

A site location map is attached as Figure 1.

SECTION 3: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings when assessing the nature and extent of contamination. For this site, alternatives that may restrict the use of the site to criteria as described in Part 375-1.8(g) were evaluated in addition to unrestricted SCGs.

A comparison of the appropriate SCGs for the identified land use against the unrestricted use SCGs for the site contaminants is available in the RI/FS.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRP for the site, documented to date, is SI Group Inc.

The Department and SI Group entered into a Consent Order (#R-0888-90-12) in August 22, 1997. The Order obligates the responsible parties to implement a full remedial program.

SECTION 5: SITE CONTAMINATION

5.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Survey of residential water supply wells,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater and soil vapor,
- Sampling of surface water and sediment, groundwater,
- Ecological and Human Health Exposure Assessments.

5.1.1: **Standards, Criteria, and Guidance (SCGs)**

The remedy must conform with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCG in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/2393.html

5.1.2: **RI Information**

The analytical data collected on this site includes data for:

- groundwater
- surface water
- soil
- sediment
- soil vapor

The data has identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in section 5.4. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

spent non-halogenated solvents

total cresols and acrylic acid) (F004)
xylene, acetone and ethylbenzene (F003)
phenols (U188)
naphthalene based compounds (U165)

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable standards, criteria and guidance for:

- groundwater
- soil

5.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

Product (a mixture of naphthalene, xylene and toluene) floating on the groundwater table was found in several groundwater monitoring wells. This Light Non-Aqueous Phase Liquid (LNAPL) originated from releases that had occurred in the Process area including a tank spill circa 1974. Beginning in July 2008, extraction by bailer was conducted on a weekly, then monthly and now on a quarterly basis to remove as much LNAPL as possible before a final remedy for OU2 is implemented.

5.3: Summary of Human Exposure Pathways

This section describes the current or potential human exposures to persons at or around the site that may result from the contamination. A more detailed discussion of the human exposure pathways can be found in the RI Report (or appropriate document) available at the document repository. An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

Contaminated surface water in a ditch which receives runoff from the site was accessible to local residents. A fence has been installed around this area. The Cowhorn Creek, which receives the ditch outfall, is not contaminated. Groundwater contamination has been confirmed. However, ingestion of contaminated groundwater is not expected because residents in the area are served by a public water supply source.

5.4: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The Fish and Wildlife Impact Analysis (FWIA), which is included in the RI report, presents a detailed discussion of the existing and potential impacts from the site to fish and wildlife receptors.

Soils are contaminated with various organic compounds. A report received in March 1988 confirmed ethylbenzene, xylene, naphthalene, and phenolic contamination in groundwater.

A Remedial Investigation/ Feasibility Study (RI/FS) for Operable Unit 1 was completed in 1998, and a Record of Decision (ROD) was signed in March 1999. The ROD required: installation of a groundwater collection trench, installation of groundwater recovery wells (in areas outside the capture zone of the collection trench), and construction of a groundwater pump and treat (p&t) system for the collected groundwater.

Cowhorn Creek is located along the southern and western boundaries of the SI Group Congress Street facility and represents the primary receptor for contaminants migrating from the site (Figure 2). The Groundwater Collection System (OU1) addresses the migration of contaminants offsite and is monitored daily and evaluated quarterly to assure that the system is operating as designed.

The extent of contaminated soils under the buildings (which have been demolished) have been addressed by a supplemental RI to fill in the data gaps. The final results of a pilot test (at the RJ facility) have determined that a thermally enhanced SVE system is a viable technology for these remaining soils.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

To be selected the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the Site were identified, screened and evaluated.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that will be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring will cease after 30 years if remediation goals are not achieved.

6.1: Evaluation of Remedial Alternatives

The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the Feasibility Study report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy. The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

6.2: Elements of the Remedy

The basis for the Department's remedy is set forth at Exhibit E.

The estimated present worth cost to implement the remedy for the Process Area (Alternative P-5A) is $3,790,000.00. The cost to construct the remedy is estimated to be $3,790,000.00 and the estimated average annual cost is $0.00. The annual cost is $0.00 because this cost is part of the remedy for Operational Unit Number 1.

The estimated present worth cost to implement the remedy for the Fill Area (Alternative F-3) is $500,000.00. The cost to construct the remedy is estimated to be $500,000.00 and the estimated average annual cost is $0.00. The annual cost is $0.00 because this cost is part of the remedy for Operational Unit Number 1.

The elements of the selected remedy are as follows:

Process Area Alternative P-5A (Thermally-Enhanced SVE):

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance and monitoring of the remedial program. Selection of the soil heating technology will be made with the approval of the Department based on its effectiveness. If the heating technology is not effective, thermal desorption (Alternative P-7A) will be implemented.

2. In order to facilitate in-situ treatment of impacted soils on the Site, it will be necessary to first remove existing surface slabs, building footings, and other surface obstructions present in the Process Area. The portion of concrete is estimated to be on the order of 170 cubic yards of concrete.

3. In order to backfill areas where concrete and associated soil is removed, approximately 2,500 tons of clean fill will be imported to the Process Area. Backfill

material imported to the site will meet the requirements for commercial use as set forth in 6NYCRR part 375-6.7(d).

4. Thermally enhanced SVE using conduction or convective technology will be installed using Geoprobe™ or conventional drilling techniques. SVE units will be installed to a minimum depth of 12 feet and will likely be extended an additional two to three feet into the groundwater.

5. A dewatering system will be required to lower the water level 2 to 3 feet to maximize the total column of unsaturated soil and allow treatment of the total area.

6. It is also anticipated that after an initial period of continuous heating and vacuum extraction, the system will be modified to cyclic pulsing of alternating extraction and injection (biosparging) to optimize for bioremediation of SVOCs.

7. A thermally-enhanced SVE system will require treatment of VOCs in the air/off-gases emitted from the SVE system. Carbon adsorption or equivalent technology, in which pollutants are removed from the soil vapor extracted from the ground, has been used for estimating purposes and will require additional piping and treatment units on-site during remedial activities.

8. The level of cleanup will be monitored. Based on the success of remediation, SI Group may be able to request termination of the groundwater collection in the Process Area. It has been estimated that the Groundwater Collection System (GWCS) will remain in operation for approximately fifteen years following remediation. However, it will not terminate until protection of groundwater SCOs are achieved.

9. Figure 7 lays out the boundaries of the area to be subject to in-situ treatment..

Fill Area Alternative F-3 (Permeable Cap and Natural Attenuation):

10. In order to facilitate the implementation of this alternative, it will be necessary to first remove existing surface slabs, the loading dock and other surface obstructions present in the Fill Area. Product or other man made materials will be removed, tested and disposed of off-site.

11. In order to backfill areas where concrete is removed, approximately 50 yd^3 of clean fill will need to be imported to the Fill Area.

12. A permeable cover system will be installed over the Fill Area to further contain the contamination present in the waste mass while also encouraging the maximum amount of surface water to flow through the waste mass to the GWCS. The cap will be installed to tie into the existing Fill Area features (i.e. the Treatment Facility) and topography to the extent possible. Following the installation of the cover system, it will be necessary to modify existing monitoring/pumping wells.

13. It is expected that monitoring wells will be used to monitor the attenuation of the residual contamination; however, the contaminant concentrations are not expected to reach the cleanup goals for a minimum of 30 years across the entire Fill Area.

14. Figure 7 lays out the boundaries of the permeable cap.

The following applies to the entire site:

15. A site cover will be installed in areas not addressed by the permeable cap to allow for industrial use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil exceeds the industrial soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d). The soil cover will be placed over a demarcation layer. The upper six inches of the soil will be of sufficient quality to maintain a vegetation layer. Non-vegetated areas (buildings, roadways, parking lots, etc.) will be covered by either a paving system or concrete at least 6 inches thick

16. The operation of the components of the remedy will continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

17. To maximize the net environmental benefit, green remediation and sustainability efforts will be considered in the design and implementation of the remedy to the extent practicable, including:

    - energy efficiency
    - reducing green house gas emissions
    - encouraging low carbon technologies
    - conserve natural resources
    - increase recycling and reuse of clean materials
    - preserve open space and working landscapes
    - design cover systems to be usable for habitat or recreation

18. The Department will impose institutional controls in the form of an environmental easement that:

    (a) requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3).

    (b) land use is subject to local zoning laws, the remedy allows the use and development of the controlled property for industrial use only.

(c) restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Department, NYSDOH or County DOH;

(d) prohibits agriculture or vegetable gardens on the controlled property;

(e) requires compliance with the Department approved Site Management Plan;

19. Since the remedy results in contamination remaining at the site that does not allow for unrestricted use, a Site Management Plan is required, which includes the following:

(a) an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to assure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls:

The Environmental Easement discussed in Paragraph 19 above.

Engineering Controls:

The soil cover discussed in Paragraph 16.

This plan includes, but may not be limited to:

(i) Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;

(ii) descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;

(iii) provisions for the management and inspection of the identified engineering controls;

(iv) maintaining site access controls and Department notification; and

(v) the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls;

(b) a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but is not limited to:

(i) monitoring of groundwater to assess the performance and effectiveness of the remedy and the attenuation of the residual contamination;

(ii) schedule of monitoring and frequency of submittals to the Department; and

(iii) provision to evaluate the potential for soil vapor intrusion for existing buildings if building use changes significantly or if a vacant building become occupied and for any buildings developed on the site, including provision for mitigation of any impacts identified.

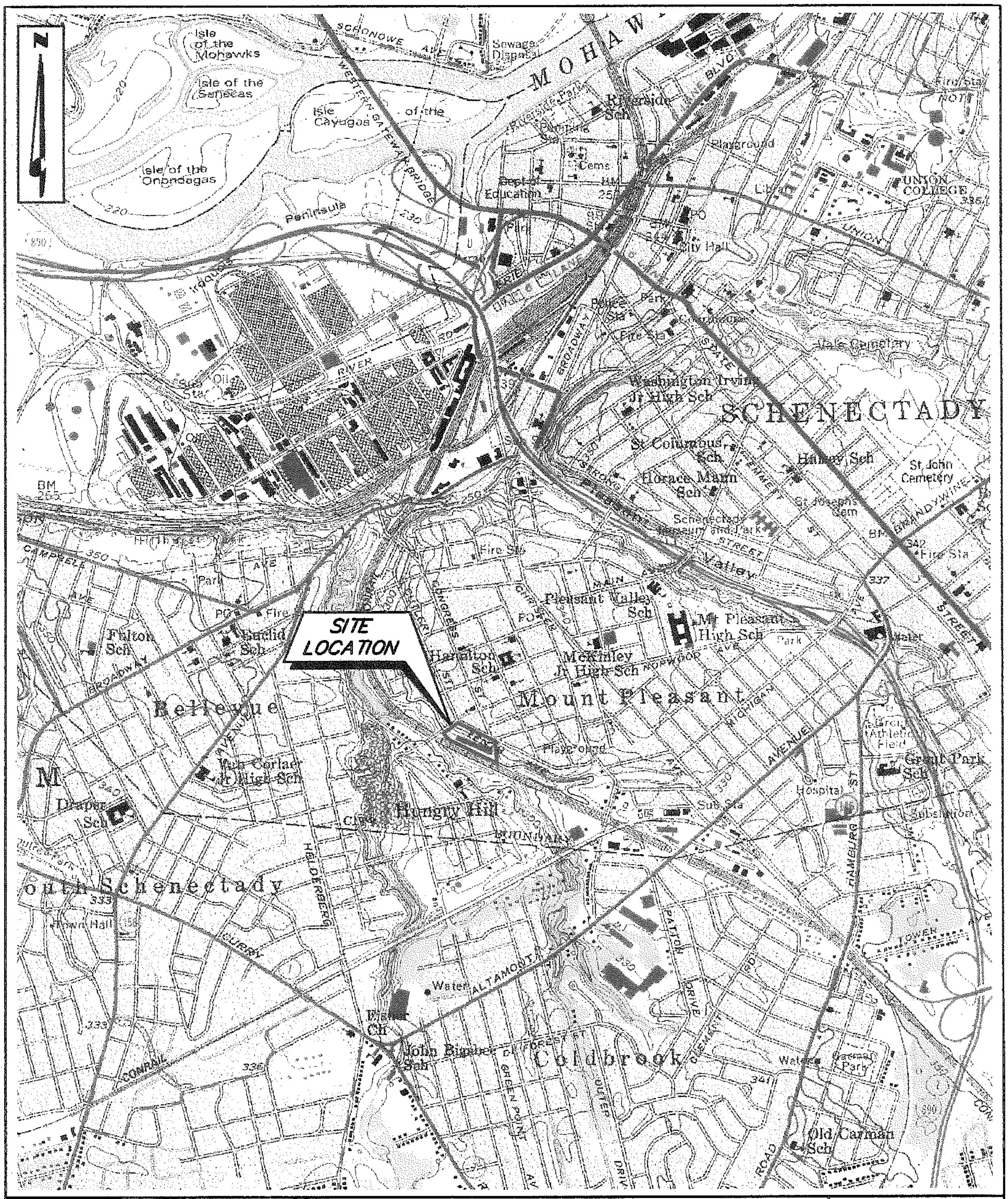
(c) an Operation and Maintenance Plan to assure continued operation, maintenance, monitoring, inspection, and reporting of for any mechanical or physical components of the remedy. The plan includes, but is not limited to:

(i) compliance monitoring of treatment systems to assure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;

(ii) maintaining site access controls and Department notification; and

(iii) providing the Department access to the site and O&M records.

File: M:\15091\CS\FEASIBILITY STUDY\ACAD\ACAD\FIGURE 1.DWG Saved: 4/15/2009 3:23:59 PM Plotted: 4/15/2009 3:25:59 PM User: Weatherby Jr., Bill



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SITE LOCATION

UPDATED FEASIBILITY STUDY

CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

PROJECT NO.
15091.2010.1102

DATE: 02/25/09

FIGURE 1

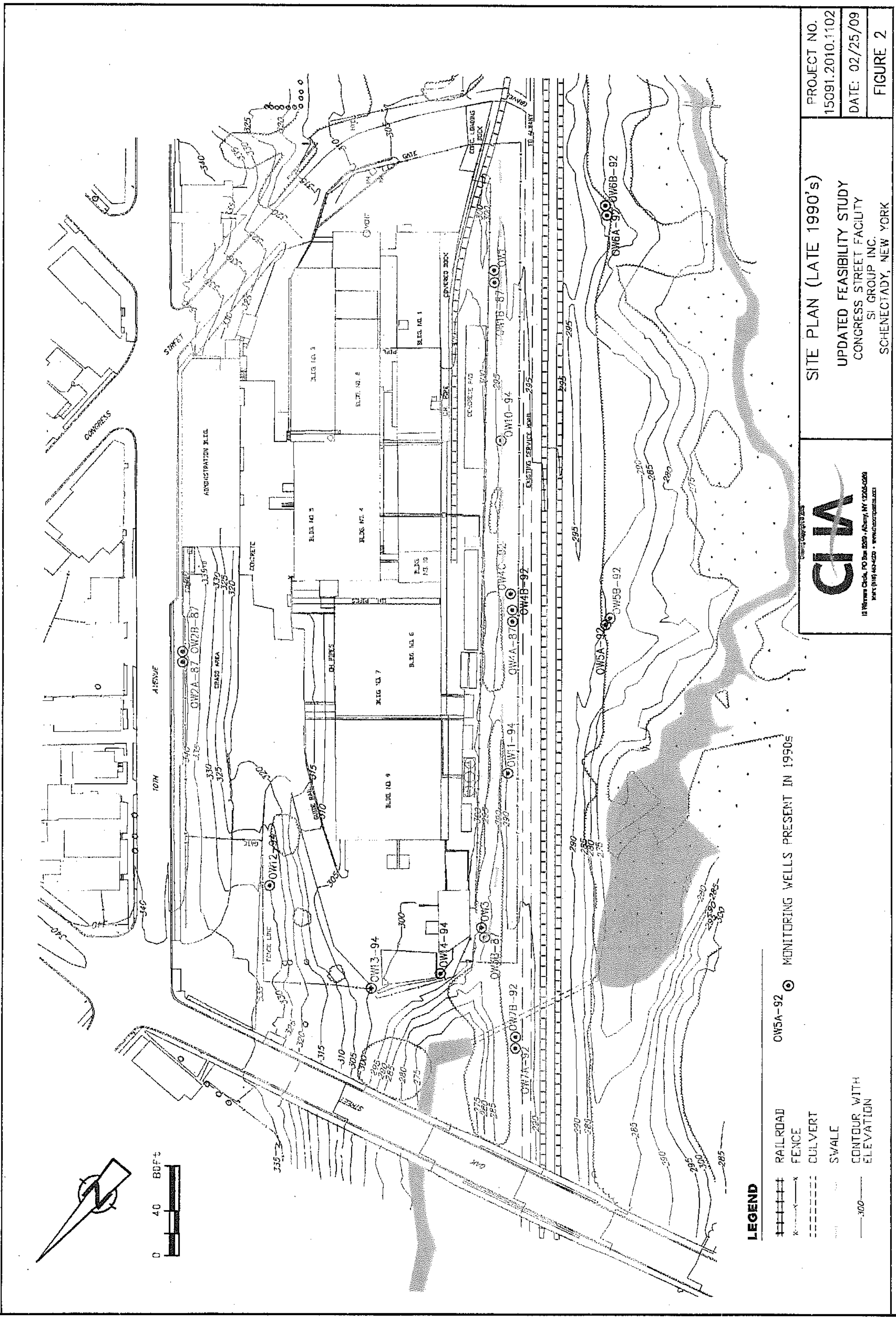

Figure 2: SI Group Congress Street Facility (before demolition).

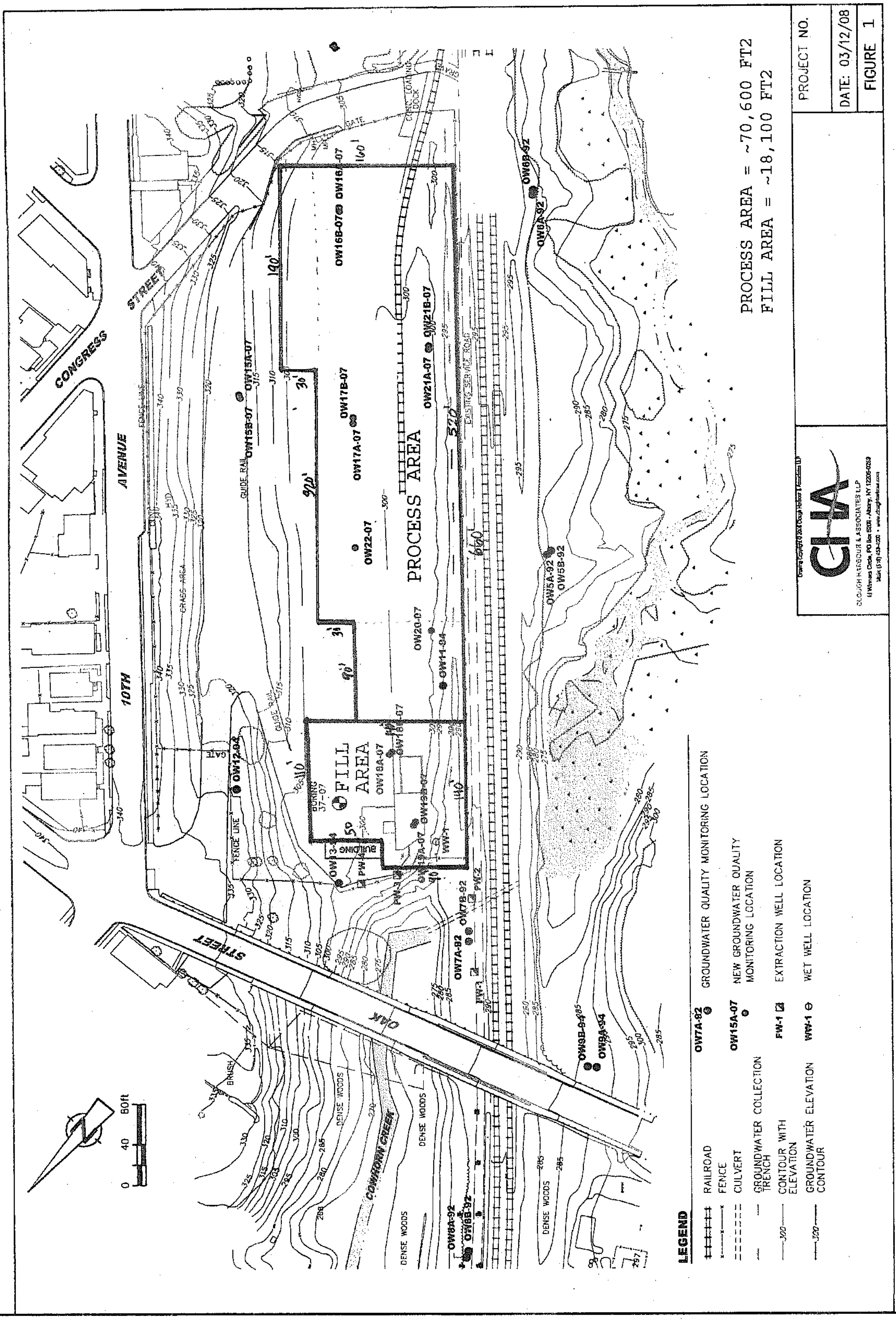

Figure 3: Areas of Concern for Operational Unit 2

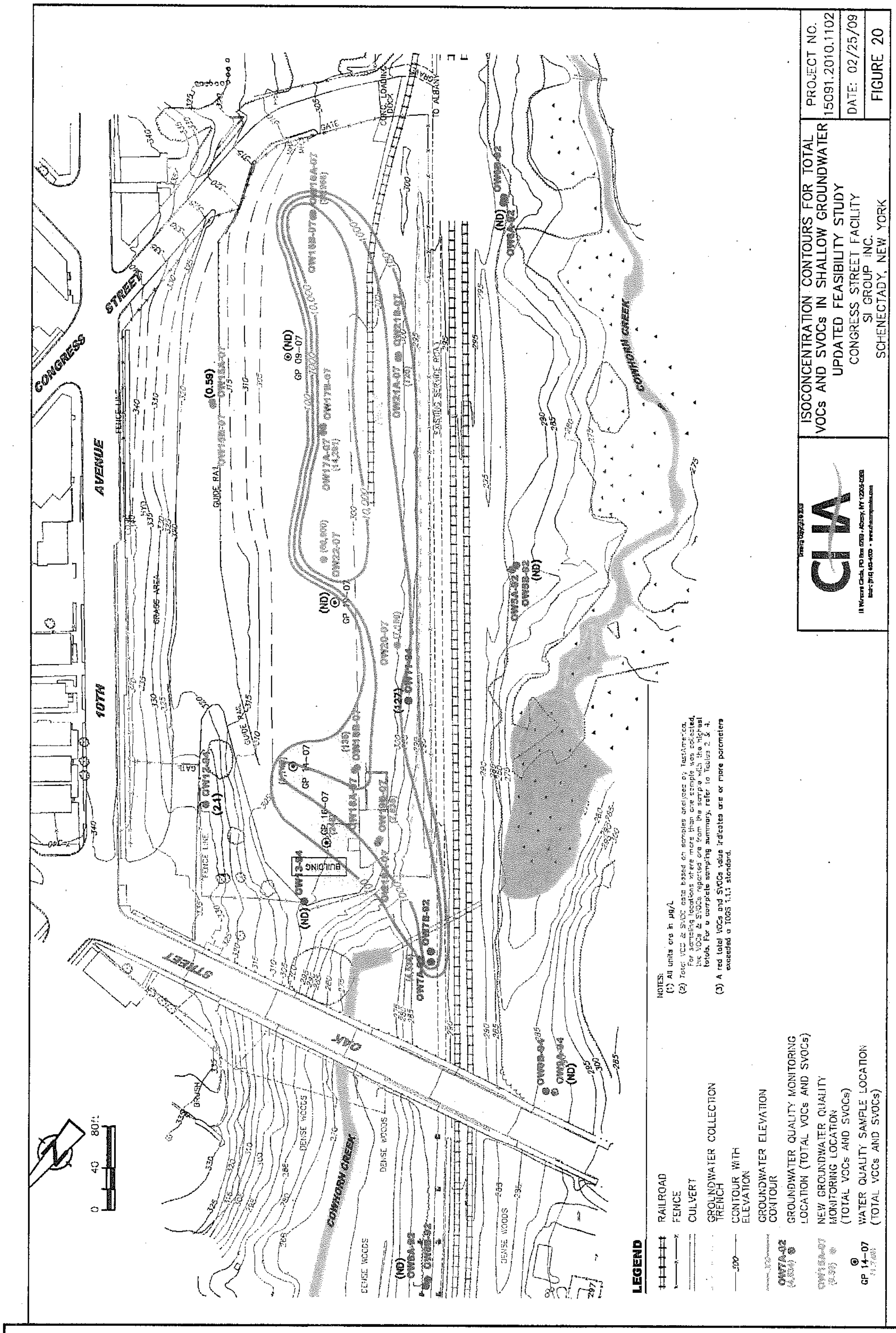

Figure 4: Extent of Groundwater Contamination

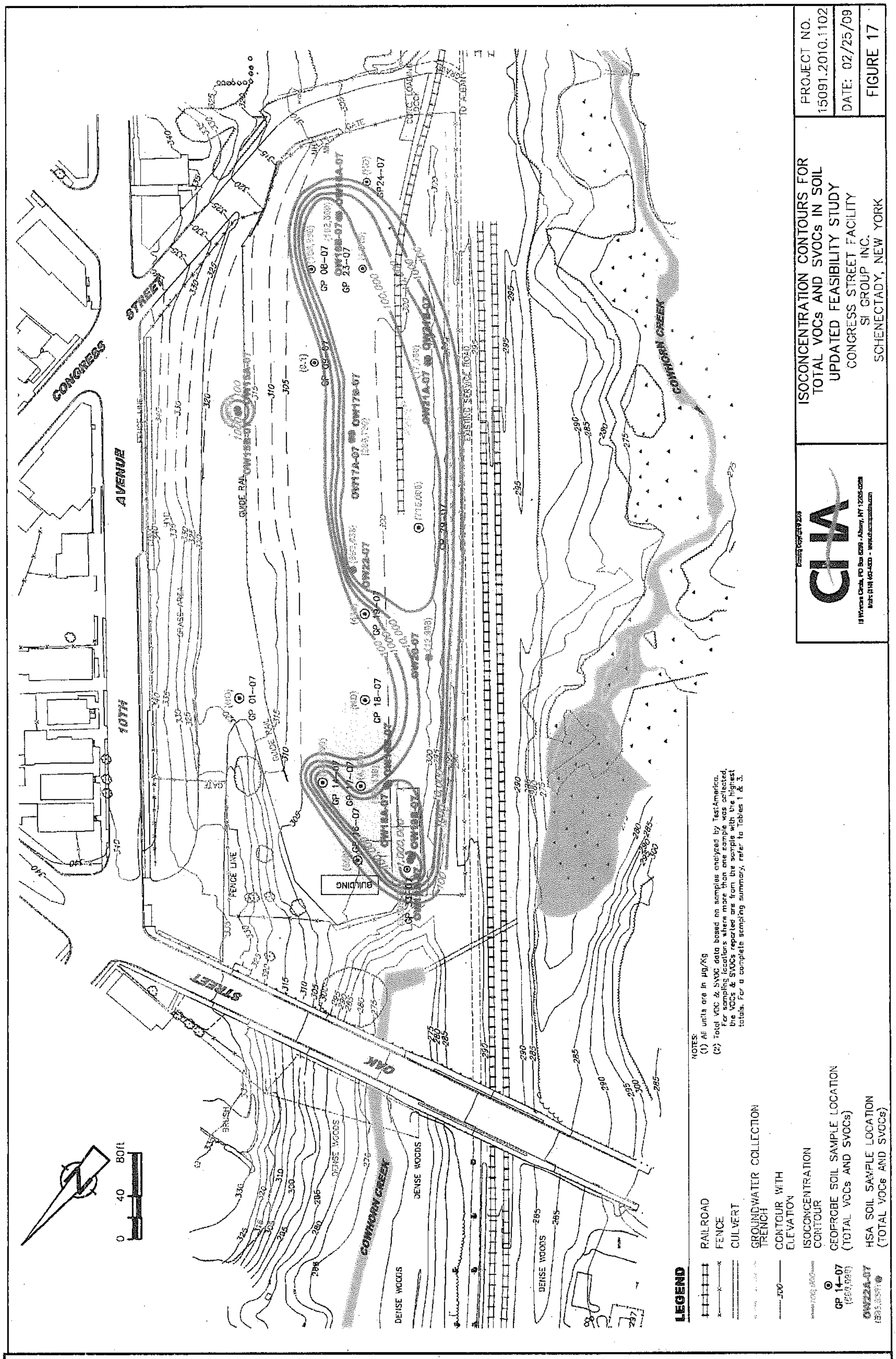

Figure 5: Extent of Soil Contamination

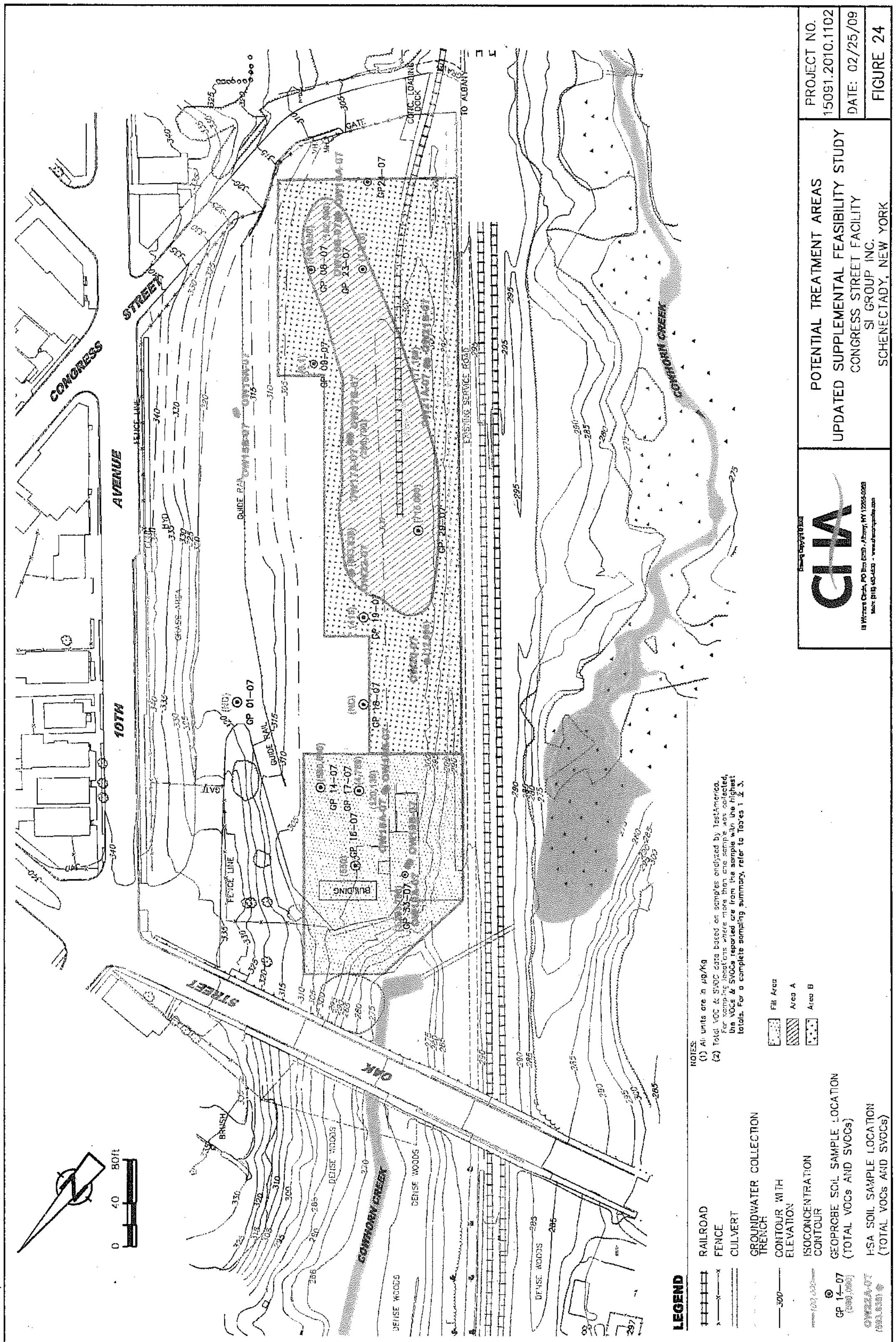

Figure 6: Fill Area and Process Area (Area A and Area B)

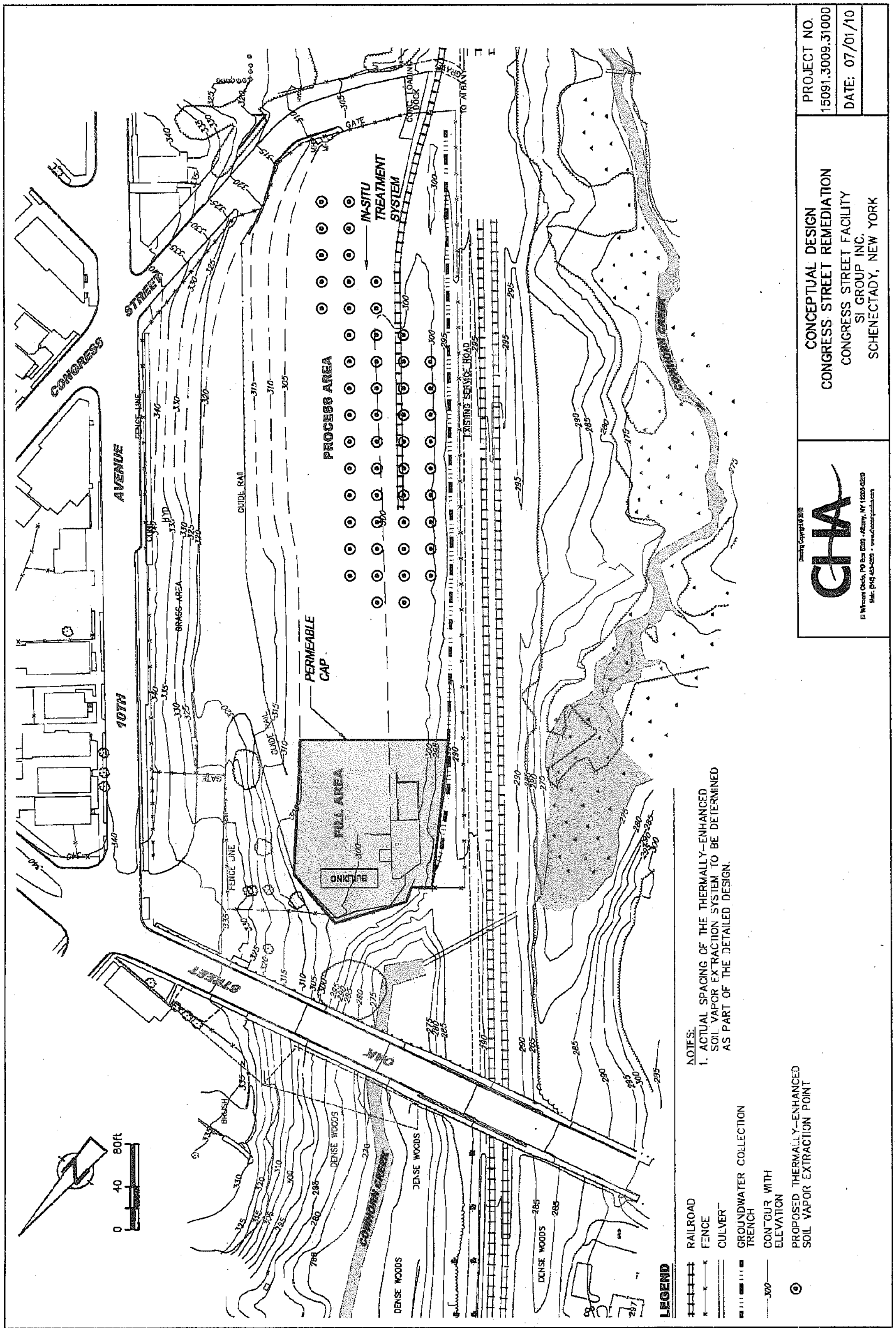

Figure 7: Fill Area and Process Area Conceptual Design

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial investigation. As described in the RI report, waste/ source materials were identified at the site and are impacting groundwater, and soil.

Waste/Source Areas

Wastes are defined in 6 NYCRR Part 375-1.2 (aw) and include solid, industrial and/or hazardous wastes. Source Areas are defined in 6 NYCRR Part 375 (au). Source areas are areas of concern at a site were substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. Wastes and Source areas were identified at the site include product (a mixture of naphthalene, xylene and toluene) floating on the groundwater table in the Process area; and a black tar-like material (cresols) found in the subsurface of the Fill area and under and between concrete slabs in the Process area (Figure 2).

Certain of the waste/source areas identified at the site were addressed by the IRM(s) described in Section 5.2. The remaining waste/source area(s) identified during the RI will be addressed in the remedy selection process.

This section describes the findings for all environmental media that were evaluated. As described in the RI report, groundwater, soil, and soil vapor intrusion samples were collected to characterize the nature and extent of contamination.

For each media, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into four categories; volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides/ polychlorinated biphenyls (PCBs), and inorganics (metals). For comparison purposes the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCG identified in Section 3 are also presented.

Groundwater

Groundwater samples were collected from monitoring wells and the direct push/Geoprobe® drilling program. The samples were collected to assess groundwater conditions onsite for the purpose of selecting a remedy for OU2. Contaminants detected above the groundwater standards are shown in Table #1.

	Table #1 - Groundwater		
Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
Benzene	.35-31	1	8 of 45
Ethylbenzene	3.8-14,000	5	17 of 45
Toluene	.77-10,000	5	12 of 45
Total Xylenes	.59-45,000	5	19 of 45
SVOCs			
2,4-Dimethyphenol	1.8-990	1	15 of 45
Methylnapthalene	1.4-1700	50	4 of 45
2-Methylphenol	1.9-420	1	9 of 45
4-Methylphenol	.46-2500	1	12 of 45
Acenaphthene	.63-190	20	4 of 45
Benzo(A)Anthracene	36	.002	1 of 45
Di-N-Butylphthalate	1000	50	1 of 45
Fluoranthene	52	50	1 of 45
Fluorene	1.2-120	50	1 of 45
Napthalene	.65-3100	10	12 of 45
Phenanthrene	1.9-200	50	1 of 45
Phenol	.89-150	1	8 of 45
Pyrene	63.3	50	1 of 45

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

The primary groundwater contaminants are benzene, toluene, xylene, naphthalene and phenol. The extent of the shallow groundwater contamination (above 15 feet) is shown in Figure 4. There is little deep groundwater contamination (below 15 feet).

Based on the findings of the Updated RI, the disposal of hazardous waste (spills) has resulted in the contamination of groundwater. Migration of contaminated groundwater offsite is controlled by the Groundwater Extraction System installed as part of the remedy for OU1.

Soil

Soil samples were collected from the surface down to the water table throughout the site during the RI. Little to no contamination was detected below the water table. Contaminants detected above the unrestricted SCG's are shown in Table #2. There were no exceedences of metal SCOs.

Table #2 - Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Restricted Industrial Use SCG[c] (ppm)	Frequency Exceeding Unrestricted SCG
VOCs				
Acetone	0.01-2.8	0.05	1000	5 of 24
Benzene	0.003-0.89	0.06	89	3 of 24
Ethylbenzene	0.002-190	1	780	7 of 24
Methylene Chloride	0.004-0.220	0.05	1000	1 of 24
Toluene	2-240	0.7	1000	5 of 24
Total Xylenes	0.12-710	0. 26	1000	10 of 24
SVOCs				
2-Methylnapthalene	0.073-63	36.4		1 of 24
2-Methylphenol	0.11-100	0.1		4 of 24
2-Nitroaniline	130	0.4		1 of 24
4-Methylphenol	0.057-580	0.5		4 of 24
Benzo(A)Anthracene	0.12-6.1	1		2 of 24
Benzo(A)Pyrene	0.096-4.1	1		6 of 24
Benzo(B)Fluoranthene	0.13-7.1	1		1 of 24
Benzo(K)Fluoranthene	0.078-2.8	0.8		1 of 24
Dibenzo(A,H)	0.072-2.3	0.33		4 of 24

Table #2 - Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Restricted Industrial Use SCG[c] (ppm)	Frequency Exceeding Unrestricted SCG
Anthracene				
Di-N-Butylphthalate	0.35-120	8.1		2 of 24
Indeno(1,2,3-Cd)Pyrene	0.074-7	0.5		1 of 24
Napthalene	0.086-180	12		5 of 24
Phenol	0.12-210	0.33		5 of 24

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Industrial Use Soil Cleanup Objectives; For the compounds that do not have a listed soil cleanup objective, the Department may develop cleanup standards using the Technical Support Document.

The primary soil contaminants are benzene, ethylbenzene, toluene, xylene, naphthalene and phenols. Figure 5 shows the extent of the contamination. The majority of the soil contamination in the Fill area is phenols located below 15 feet in contrast to the Process area where the contamination is benzene, ethylbenzene, toluene, xylene, naphthalene located above 15 feet. Comparing the soil contamination to the groundwater contamination we have concluded that the phenols in the Fill area located below 15 feet minimally contribute to the site's total groundwater contamination. The Process area soil contamination therefore contributes most of the groundwater contamination.

Based on the findings of the Remedial Investigation, the disposal of hazardous waste has resulted in the contamination of soil.

Soil Vapor Intrusion

The evaluation of the potential for soil vapor intrusion resulting from the presence of site related soil and groundwater contamination was evaluated by the sampling of soil vapor. At this site no buildings were present in impacted areas, so only soil vapor was evaluated.

Based on the soil vapor results, contaminated soil vapor does not appear to be migrating from the site to off-site locations at levels requiring further investigations. However, there is a potential for exposures via soil vapor intrusion if buildings are constructed on-site in the future.

A site management plan developed for the site shall include an evaluation for the potential that soil vapor intrusion might occur in any buildings constructed on-site in the future. (See Section 6.2).

Exhibit B

SUMMARY OF THE REMEDIATION OBJECTIVES

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial objectives for this site are:

Public Health Protection

Groundwater

- Prevent people from drinking groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with contaminated groundwater.
- Prevent inhalation of contaminants from groundwater.

Soil

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of contaminants volatilizing from the soil.

Environmental Protection

Groundwater

- Restore the groundwater aquifer to meet ambient groundwater quality criteria, to the extent feasible.
- Prevent discharge of contaminated groundwater to surface water.

Soil

- Prevent migration of contaminants that will result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Exhibit C

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Exhibit B) to address the contaminated media identified at the site as describe in Section 5:

Due to distinct soil and engineering concerns the site is divided into two areas for remediation purposes: Process and Fill Areas (Figure 3). Alternatives are presented for each area and designated with "P" for Process Area and "F" for Fill Area.

*Note: For all the remedial alternatives the Groundwater Collection System (OU1) will continue to operate, providing hydraulic containment of the contaminated groundwater. The annual cost for OU1 is $194,000 and the present worth assuming 30 years of operation and a 5% discount rate is $2,980,000 (Table 20 of Updated FS). The annual costs (if any) for OU2 are included in the Capital Cost for each alternative.

The following alternatives were considered to address the contaminated media identified for the Process Area:

Alternative P-1: No Further Action

The No Further Action Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 5.2. This alternative leaves the site in its present condition and does not provide any additional protection of the environment.

Alternative P-2: Permeable Soil Cover with Site Management

This alternative will include:

- Installation of a Permeable Soil Cover over the Process Area
- Institutional/Engineering Controls
- Natural Attenuation
- Surface Water and Groundwater Monitoring
- Site Management Plan

This alternative consists of the excavation of all concrete slabs and footings and installation of a one foot thick permeable soil cover system across the Process Area. Natural attenuation of the contaminated soils will occur in conjunction with the Groundwater Collection System (OU1).

This alternative is expected to achieve industrial SCOs for the Process Area.

Present Worth: *$1,426,000**
Capital Cost: *$1,426,000*
Annual Costs: *$0**

Alternative P-3: Excavation (Restoration to Pre-Disposal or Unrestricted Conditions)

This alternative achieves all of the SCGs discussed in Section 5.1.1 and soil meets the unrestricted soil clean objectives listed in Part 375-6.8 (a). This alternative will include:

- Excavation of Impacted Soils in Process Area, Off-site Disposal
- Institutional/Engineering Controls

Under this alternative all on-site debris and soils located in the vadose zone (above the water table) of the Process Area, which exceed the unrestrictive SCOs will be excavated and transported off-site for disposal. Approximately 91,500 cubic yards of soil and debris will be removed. Clean fill will then be brought in to replace the excavated soil and establish the designed grades at the site. There is no contamination below the vadose zone.

This alternative is expected to achieve unrestricted SCOs and protection of groundwater SCOs for the Process Area.

Capital Cost:.. $56,290,000

Alternative P-4: Limited Excavation

This alternative will include:
- Limited Excavation of Impacted Soils in Process Area, Off-site Disposal
- Institutional/Engineering Controls
- Surface Water and Groundwater Monitoring
- Site Management Plan

Under this alternative the most contaminated debris and soils located in the vadose zone (above the water table) of the Process Area, which exceed the unrestricted SCOs will be excavated and transported off-site for disposal. Approximately 14,570 cubic yards of soil and debris will be removed. Clean fill will then be brought in to replace the excavated soil and establish the designed grades at the site. Approximately 96% of the contamination will be removed with the remainder of the soil remediated by natural attenuation during the operational period of the Groundwater Collection System (OU1).

This alternative is expected to achieve unrestricted SCOs for the Process Area.

Present Worth:.. $12,160,000*
Capital Cost:.. $12,160,000
Annual Costs:.. $0*

Alternative P-5: Thermally-Enhanced Soil Vapor Extraction

This alternative will include:
- In-Situ Treatment in Process Area Using Thermally-Enhanced SVE
- Bioventing/Biosparging
- Removal of Slabs, Surface Obstructions and Building Footings
- Institutional/Engineering Controls
- Surface Water and Groundwater Monitoring
- Site Management Plan

Soil vapor extraction (SVE) is an in-situ technology used to treat volatile organic compounds (VOCs) in soil. The process physically removes contaminants from the soil by applying a vacuum to a SVE well that has been installed into the vadose zone (the area below the ground but above the water table). The vacuum draws air through the soil matrix which carries the VOCs from the soil to the SVE well. The air extracted from the SVE wells is then run through an activated carbon treatment canister or equivalent system to remove the VOCs before the air is discharged to the atmosphere.

Thermally enhanced SVE uses conduction (e.g., using hot water in pipes) or convection (e.g., hot-air injection) to transmit heat through the unsaturated zone to increase the volatilization rate of both volatiles and semi-volatiles and to facilitate extraction. Both heating technologies were tested at SI Group's Rotterdam Junction facility (RJ) for two years and found to be equally effective. Since the soils and contamination at Rotterdam Junction are similar to that at SI Group's Congress Street facility, the results of this study are being used in this document.

Using the extraction wells already in place, SVE is followed by bioventing or biosparging to promote natural biodegradation of semi-volatile organics (SVOCs), which are not as effectively removed by SVE as volatiles. Bioventing provides oxygen to stimulate naturally occurring soil microorganisms to degrade compounds in unsaturated zones. Biosparging is the cyclic pulsing of alternating air extraction and injection to optimize for the bioremediation of SVOCs.

Cost estimates for the treatment of two different areas have been prepared for the Process Area (Figure 6). Alternative P-5A treats only Area A (26,260 ft2) and is expected to address approximately 96% of the contaminant mass in the Process Area. Alternative P-5B treats Areas A and B of the designated Process Area and is expected to address approximately 98% of the contamination in the Process Area. These variations were prepared to enable the comparison with both Alternative 4, which treats a limited area, and Alternative 3, which addresses the entire Process Area. The relative costs to treat the additional area will also be applicable to Alternatives P-6 and P-7.

This alternative is expected to achieve industrial SCOs for the Process Area.

Alternative P-5A

Present Worth: $3,790,000*

Capital Cost: $3,790,000

Annual Costs:.. $0*

Alternative P-5B
Present Worth:.. $7,050,000*
Capital Cost:.. $7,050,000
Annual Costs:.. $0*

Alternative P-6: Multi-Phase Extraction

This alternative will include:
- In-Situ Treatment in Process Area Using Multi-Phase Extraction
- Bioventing/Biosparging
- Removal of Slabs, Surface Obstructions and Building Footings
- Institutional/Engineering Controls
- Surface Water and Groundwater Monitoring
- Site Management Plan

Multi-phase extraction (MPE) involves removal of contaminated groundwater, free-phase product contamination, and soil vapors from a common extraction well under vacuum conditions. Essentially, MPE is the coupling of soil vapor extraction (SVE) and groundwater pump and treat. Groundwater recovery is achieved by pumping at or below the water table. The applied vacuum extracts soil vapor and enhances groundwater recovery.

A network of SVE/dewatering wells will be installed to a minimum depth of 12 feet and will likely be extended an additional 2 to 3 feet below the groundwater. In order to effectively remove contaminant mass, the groundwater will be lowered 2 to 3 feet to allow the remediation of the entire area by SVE. It is anticipated that a dual-pump multi-phase extraction unit will be used. This method of remediation will allow for removal of the VOCs and an appreciable fraction of the SVOCs. The enhanced air flow through the subsurface will increase the volume and percentage of oxygen available in the subsurface to aid in biodegradation of the organics that are not removed. It is anticipated that the system will operate continuously for up to two years. After this, it is expected that vapor concentrations may decline to a level that post extraction treatment is not necessary. At that time, it is anticipated that the system will be modified to a cyclic pulsing of alternating air extraction and injection to optimize for bioremediation of SVOCs or to passive bioventing.

This system is expected to achieve the restricted industrial SCOs for the Process Area.

Alternative P-6A (Area A)
Present Worth:.. $3,480,000*
Capital Cost:.. $3,480,000
Annual Costs:.. $0*

Alternative P-6B (Area A and B)

Present Worth:	$6,750,000*
Capital Cost:	$6,750,000
Annual Costs:	$0*

Alternative P-7: In-Situ Treatment Using ISTD

This alternative will include:
- In-Situ Treatment Using in-situ thermal desorption (ISTD)
- Removal of Slabs, Surface Obstructions and Building Footings
- Institutional/ Engineering Controls
- Surface Water and Groundwater Monitoring
- Site Management Plan

Soils and waste containing VOCs and SVOCs will be remediated by in-situ thermal desorption (ISTD). In ISTD, soil is heated in-situ to higher temperatures than typically used for thermally-enhanced SVE (Alternative P5). Volatile and semi-volatile contaminants are vaporized and rise to the unsaturated zone where they are removed by vacuum extraction and then run through an activated carbon treatment canister or equivalent system to remove the VOCs before the air is discharged to the atmosphere.

Benefits of ISTD include the ability to treat and/or destroy a wide range of contaminants. In addition, ISTD can treat free product in the form of LNAPL. However, costs associated with this technology are high due to the energy required and extensive operation and maintenance costs. Furthermore, SVOCs are not as readily treated as VOCs.

Alternative P-7 includes installation of vertical ISTD heaters at approximately 12 ft spacing for a total of approximately 250 heater-only wells for Area A and 640 for Areas A and B (Figure 6). Vapors will be extracted from approximately 50 or 125 vertical multi-phase extraction wells, respectively. The heaters will extend to a minimum depth of 12 feet and will likely be extended an additional two to three feet into the groundwater. Off-gas treatment will include an un-heated vapor collection manifold, a condensing front end prior to vapor treatment, and liquid separation with granular-activated carbon (GAC) for condensate and groundwater treatment. The non-condensable vapors will be treated by a thermal oxidizer.

These alternatives are expected to achieve the restricted industrial SCOs for the Process Area.

Alternative P-7A (Area A)

Present Worth:	$6,220,000*
Capital Cost:	$6,220,000

Annual Costs:	$0*

Alternative P-7B (Area A and B)

Present Worth:	$10,430,000*
Capital Cost:	$10,430,000
Annual Costs:	$0*

The following alternatives were considered to address the contaminated media identified for the Fill Area:

Alternative F-1: No Further Action

The No Further Action Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 5.2. This alternative leaves the site in its present condition and does not provide any additional protection of the environment.

Alternative F-2: Capping with Site Management

This alternative includes:
- Installation of an Impervious Cap over the Fill Area
- Institutional/Engineering Controls
- Long-Term Groundwater Hydraulic Containment, On-site Treatment
- Surface Water and Groundwater Monitoring
- Site Management Plan

The installation of an impermeable cap, with continued operation of the GWCS, will reduce the current level of risk to human health and the environment associated with the Fill Area by further isolating the waste mass and associated contamination. The cap will restrict the infiltration of precipitation and surface water and will be installed over most existing concrete slabs and asphalt. Based on the known presence of landfill materials (construction/demolition debris, etc.) as well as the tar-like contamination identified during the Updated RI, it is anticipated that restricting the infiltration of surface water will reduce the leaching of contaminants into the groundwater.

This alternative is expected to achieve industrial restricted SCOs for the Fill area.

Present Worth:	$280,000*
Capital Cost:	$280,000
Annual Costs:	$0*

Alternative F-3: Permeable Cap and Natural Attenuation

This alternative includes:
- Natural Attenuation
- Institutional/Engineering Controls
- Installation of a Permeable Cap over the Fill Area
- Long-Term Groundwater Hydraulic Containment, On-site Treatment
- Surface Water and Groundwater Monitoring
- Site Management Plan

Natural attenuation is a remedial method that reduces the mass and concentration of contaminants in the environment without human intervention. Long-term monitoring of the site conditions is needed to confirm whether or not the contaminants are being degraded at reasonable rates to ensure protection of human health and the environment. Site data should clearly indicate whether concentrations of contaminated media are being adequately reduced without active remediation.

The installation of a permeable cap, with continued operation of the GWCS, will reduce the current level of risk to human health and the environment associated with the Fill Area by further isolating the waste mass and associated contamination. The permeable cap will promote the infiltration of precipitation and surface water, enhancing natural soil flushing and thus removing contaminants at a higher rate. Based on the known presence of landfill materials (construction/demolition debris, etc.) as well as the black tar-like contamination identified during the Updated RI, it is anticipated that enhancing the infiltration of surface water will increase the leaching of contaminants into the groundwater, which will then be removed and treated by the GWCS.

This alternative is expected to achieve industrial restricted SCOs for the Fill area.

Present Worth:	*$500*,000*
Capital Cost:	*$500*,000
Annual Costs:	*$0**

Alternative F-4: Restoration to Pre-Disposal or Unrestricted Conditions.

This alternative will include:
- Excavation of Impacted Soils in Fill Area, Off-site Disposal
- Relocation of Treatment Facility
- Institutional/Engineering Controls
- Surface Water and Groundwater Monitoring

Under this alternative all on-site soils located in the vadose zone (above the water table) of the Fill area which exceed Unrestricted SCOs will be excavated and transported off-site for disposal. Approximately 40,400 cubic yards of soil and debris will be removed. Clean fill will then be brought in to replace the excavated soil and establish the designed grades at the site.

Engineering and institutional controls will be used during remediation of the Fill Area. The GWCS will continue to be operated until the groundwater meets the RAOs. An extensive stabilization system will need to be implemented to facilitate waste and soil excavation given the inherent slope instability.

This alternative is expected to achieve unrestrictive SCOs and protection of groundwater SCOs for the Fill Area.

Capital Cost: *$29,810,000*

Alternative F-5: Limited Excavation

This alternative includes:
- Limited Excavation of Impacted Soils in Fill Area, Off-site Disposal
- Installation of a Permeable Cap over the Fill Area
- Institutional/Engineering Controls
- Surface Water and Groundwater Monitoring
- Site Management Plan

Alternative F-5 is the partial excavation and removal of the contaminated material above unrestricted SCOs in the Fill Area. The excavation will use conventional benching and shoring techniques. Upon completion of the excavation, a permeable cap will be placed over the waste mass remaining in place. Engineering and institutional controls will be used to restrict disturbance of the Fill Area. The GWCS will continue to be operated in the long-term to control groundwater migration from the area. A long-term groundwater and surface water monitoring program will be maintained to ensure containment of the Fill Area. Alternative F-5 is similar to Alternative F-4, but will not remove all of waste mass in the Fill Area.

This alternative is expected to achieve unrestricted SCOs for the Fill area.

Present Worth: *$6,690*,000*
Capital Cost: *$6,690*,000
Annual Costs: *$0**

Alternative F-6: Soil Vapor Extraction and Capping

This alternative includes:
- In-Situ Treatment in Fill Area Using Conventional SVE

- Bioventing/Biosparging
- Installation of a Permeable Cap over the Fill Area
- Removal of Slabs, Surface Obstructions and Building Footings (excepting Treatment Facility)
- Institutional/Engineering Controls
- Surface Water and Groundwater Monitoring
- Site Management Plan

Alternative F-6 is the in-situ treatment of the Fill Area using conventional soil vapor extraction (SVE) technology (see Alternative P-5). Following removal of the VOCs, the system will be converted to biosparging to promote bioremediation of the waste mass. A permeable cap (see Alternative F-3) will be placed over the Fill Area since the SVE system will only remove a small component of the waste mass. Engineering and institutional controls will be used to restrict disturbance of the Fill Area since contamination and solid waste materials will remain. The GWCS will continue to be operated in the long term to control groundwater migration from the area and to remove contaminated groundwater from the Fill Area. A groundwater and surface water monitoring program will be maintained to ensure containment of the Fill Area. In addition, Alternative F-6 includes the removal of surface slabs, the loading dock, and other surface obstructions as well as in-situ treatment using conventional SVE and biosparging.

This technology will not address contamination present within the black tar-like material observed in the Fill Area, as demonstrated during the treatability analyses conducted by SI Group (see Section 2.7.3.1 of the Updated FS), nor will it address solid waste materials. Therefore, while the technology will remove some contamination in the short term, the GWCS will need to continue operating in order to remove and treat contaminated groundwater.

This alternative is expected to achieve industrial restricted SCOs for the Fill Area.

Present Worth:	*$6,040,000**
Capital Cost:	*$6,040,000*
Annual Costs:	*$0**

Alternative F-7: Thermally-Enhanced In-Situ Treatment

This alternative includes:
- In-Situ Treatment in Fill Area Using Thermally-Enhanced SVE
- Bioventing/Biosparging
- Installation of Permeable Cap over the Fill Area
- Removal of Slabs, Surface Obstructions and Building Footings (excepting Treatment Facility)
- Institutional/Engineering Controls
- Surface Water and Groundwater Monitoring
- Site Management Plan

Alternative F-7 is the in-situ treatment of some contamination in the Fill Area using thermally-enhanced SVE followed by biosparging (see Alternative P-5). A permeable cap will be placed over the Fill Area since the SVE system will only remove a small portion of the waste mass.

Engineering and institutional controls will be used to restrict disturbance of the Fill Area since contamination and solid waste materials will remain. The GWCS will continue to be operated in the long term to control groundwater migration from the area and to remove contaminated groundwater from the Fill Area. A long term groundwater and surface water monitoring program will be maintained to ensure containment of the Fill Area.

This technology will not address contamination present within the black tar-like material observed in the Fill Area, as demonstrated during the treatability analyses conducted by SI Group (see Section 2.7.3.1), nor will it address solid waste materials. Therefore, while the technology will remove some additional contamination in the short-term, the GWCS will need to continue operating in order to remove and treat contaminated groundwater.

This alternative is expected to achieve industrial restricted SCOs for the Fill Area.

Present Worth: $6,600,000*
Capital Cost: $6,600,000
Annual Costs: $0*

Alternative F-8: Multi-Phase Extraction

This alternative includes:
- In-Situ Treatment in Fill Area Using Multi-Phase Extraction
- Bioventing/Biosparging
- Installation of Permeable Cap over the Fill Area
- Removal of Slabs, Surface Obstructions and Building Footings (excepting Treatment Facility)
- Institutional/Engineering Controls
- Surface Water and Groundwater Monitoring
- Site Management Plan

Alternative F-8 includes the in-situ treatment of some contamination in the Fill Area using multi-phase extraction technology (see Alternative P-6).

Following removal of the VOCs, the system will be converted to biosparging to promote bioremediation of the waste mass. A permeable cap will be placed over the Fill Area since the MPE system will only remove a small portion of the contamination in the waste mass. Engineering and institutional controls will be used to restrict disturbance of the Fill Area since contamination and solid waste materials will remain.

A network of SVE/dewatering wells will be installed to depths ranging from 15 to 28 feet depending on location within the Fill Area. Wells will be installed on a 25-foot grid to maximize efficiency of the system. This method of remediation will allow for removal of the volatile organic compounds. The enhanced air flow through the subsurface will increase the volume and percentage of oxygen available in the subsurface to aid in biodegradation of the waste. Lowering the groundwater will increase the area available for treatment.

This technology will not address contamination present within the black tar-like material observed in the Fill Area, as demonstrated during the treatability analyses conducted by SI Group (see Section 2.7.3.1 of RI), nor will it address solid waste materials. Therefore, while the technology will remove some contamination in the short-term, the GWCS will continue to operate, removing and treating contaminated groundwater. The majority of contamination, as well as the solid waste materials, will remain in the Fill Area and will thus require that a permeable cover system be installed. It is expected that the monitoring program will continue to monitor the reduction in contaminant levels in the Fill Area.

This alternative is expected to achieve industrial restricted SCOs for the Fill Area.

Present Worth:	$6,070,000*
Capital Cost:	$6,070,000
Annual Costs:	$0*

Exhibit D

Table 3
Remedial Alternative Costs
Process Area Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
P-1: No Action	0	$0*	$0*
P-2: Capping	1,426,000	$0*	1,426,000*
P-3: Excavation	55,420,000	$0*	55,420,000*
P-4: Limited Excavation	12,160,000	$0*	12,160,000*
P-5A: Thermal SVE Area A	3,790,000	$0*	3,790,000*
P-5B: Thermal SVE Area A and B	7,050,000	$0*	7,050,000*
P-6A: Multi-Phase Area A	3,480,000	$0*	3,480,000*
P-6B: Multi-Phase Area A and B	6,750,000	$0*	6,750,000*
P-7A: ISTD Area A	6,220,000	$0*	6,220,000*
P-7B: ISTD Area A and B	10,430,000	$0*	10,430,000*

Table 4
Fill Area Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
F-1: No Action	0	$0*	$0*
F-2: Capping	280,000	$0*	280,000*
F-3: Permeable Cap and Natural Attenuation	500,000	$0*	500,000*
F-4: Excavation	28,940,000	$0*	28,940,000*
F-5: Limited Excavation	6,690,000	$0*	6,690,000*
F-6: Conventional SVE	6,040,000	$0*	6,040,000*
F-7: Thermal SVE	6,600,000	$0*	6,600,000*
F-8: Multi-Phase	6,070,000	$0*	6,070,000*

Exhibit E

SUMMARY OF THE PROPOSED REMEDY

The Department is proposing Alternative F-3 (Permeable Cap) for the Fill Area and for the Process area P-5A (In-Situ Treatment of Area A Using Enhanced Soil Vapor Extraction and Biosparging and Natural Attenuation of Area B of the Process Area) with Alternative P-7A as a contingency if the results from P-5A are deemed unsatisfactory by the Department. The elements of each remedy are described in section 6.2.

Basis for Selection

The proposed remedies are based on the results of the RI and the evaluation of alternatives.

Process Area:

Threshold criteria - Alternative P-1 (No Further Action) provides no additional protection to public health and the environment and will not be evaluated further. All of the other alternatives for the process area meet these criteria.

Long-term Effectiveness and Permanence – Alternative P-2 (Physical Containment via a Permeable Cap) does not remove any waste and relies on natural attenuation; thus, this alternative does not have much long-term effectiveness or permanence. Alternative P-3 has the most effectiveness and permanence, since it calls for the complete removal of the contamination. Alternatives P-4 through P-7 will not remove all of the contamination, but the magnitude of remaining risks will be low, the engineering controls will limit the risks and the reliability of the controls is good.

Reduction of Toxicity, Mobility or Volume – Alternative P-2 does not remove any waste and relies on natural attenuation; thus, the reduction of toxicity or volume of contamination will be minimal, while the mobility of the contamination could potentially increase. Alternative P-3 (Excavation) will result in the greatest reduction of toxicity, mobility and volume, since it calls for the complete removal of the contamination. Alternatives P-4 through P-7 will not remove all of the contamination, but will permanently and significantly reduce in varying degrees the toxicity, mobility and volume of the current contamination; at a minimum, all of these alternatives will reduce the contamination down to at least industrial soil SCOs.

Short-term Impacts and Effectiveness – Alternative P-2 will have a minimal short-term impact and will only take a few months to complete. Alternative P-3 will have a large short-term impact because of the amount of material to be removed and the number of trucks needed to remove that soil; this alternative will last only a few months. Alternative P-4 (Partial Excavation) is similar to the impacts and time of Alternative P-3, but will have smaller impacts and take less time. Alternatives P-5 through P-7 will have small short-term impacts because the small amount of soil to be removed and the control of any air emissions, but could take several years to complete.

Implementability - All of the Alternatives should have little technical or administrative difficulties, although Alternative P-3 will require a large amount of removal equipment and trucks.

Cost-Effectiveness – The costs for each Alternative are laid out in Table 3 above. Of all of the Alternatives, Alternative P-5A (Treatment of Area A and Natural Attenuation of Area B) is the most cost effective because it is less expensive; will have significant long-term effectiveness and permanence through the removal of approximately 96% of the contamination in the Process Area and the remediation of the remaining contamination through pump & treat and natural attenuation; will have little short-term impact; and is easily implemented.

Land Use – Other than Alternative P-3, the unrestricted SCOs may not be achieved. Current zoning of the property will only allow industrial use . It is expected that Alternatives P-2, and P-4 through P-7 will clean up the soils to industrial SCOs.

Community Acceptance – The community appears to accept this proposed remedy with some minor comments.

Fill Area:

Threshold criteria - Alternative F-1 (No Further Action) provides no additional protection to public health and the environment and will not be evaluated further. All of the other alternatives for the process area meet these criteria.

Long-term Effectiveness and Permanence – Alternative F-2 (Impervious Cap) does not remove any waste and relies on natural attenuation; thus, this alternative does not have much long-term effectiveness or permanence. Alternative F-3 (Pervious Cap) has some long-term effectiveness/permanence because it does allow precipitation to penetrate the cap and mobilize the contaminants, so that they can be removed by the groundwater pump and treat system of OU1. Alternative F-4 (Excavation) has the most effectiveness and permanence, since it calls for the complete removal of the contamination. Alternatives F-5 through F-8 will not remove all of the contamination, but the magnitude of remaining risks will be low, the controls will limit the risks and the reliability of the controls is good.

Reduction of Toxicity, Mobility or Volume – Alternative F-2 does not remove any waste and relies on natural attenuation; thus, the reduction of toxicity or volume of contamination will be minimal, while the mobility of the contamination could potentially increase. Alternative F-3 does not remove any waste, but, since it will allow the penetration of precipitation and will funnel the contaminants to the groundwater pump and treat system, it will reduce the toxicity and volume of waste. Alternative F-4 will result in the greatest reduction of toxicity, mobility and volume, since it calls for the complete removal of the contamination. Alternatives F-5 through F-8 will not remove all of the contamination, but will permanently and significantly reduce in varying degrees the toxicity, mobility and volume of the current contamination; at a minimum, all of these alternatives will reduce the contamination down to at least industrial soil SCOs.

Short-term Impacts and Effectiveness – Alternatives F-2 and F-3 will have a minimum short-term impact and will only take a few months to complete. Alternative F-4 will have a large short-term impact because of the amount of material to be removed and the number of trucks needed to remove that soil; this alternative will last only a few months. Alternative F-5 (Limited excavation) is similar to the impacts and time of Alternative F-4, but smaller impacts and less time. Alternatives F-6 through F-8 will have small short-term impacts because the small amount of soil to be removed and the control of any air emissions, but could take several years to complete.

Implementability - Alternatives F-2, F-3 and F-6 through F-8 should have little technical or administrative difficulties. Alternatives F-4 and F-5 will require a large amount of specialized removal equipment because the contaminants are located 15 feet below ground; a large number of trucks because the amount of material to be removed is large; and be difficult to accomplish because it impact on the nearby structure.

Cost-Effectiveness – The costs for each Alternative are laid out in Table 4 above. Of all of the Alternatives, Alternative F-3 (Installation of a Permeable Cap and Natural Attenuation) is the most cost effective because it is less expensive; will have long-term effectiveness and permanence by funneling the contamination to the pump & treat where they will be removed and natural attenuation; will have little short-term impact; and is easily implemented.

Land Use – Other than Alternative F-4, the unrestricted SCOs may not be achieved. SIG has indicated that they want the property to be used only for industrial purposes. It is expected that Alternatives F-2 through F-7 will clean up the soils to industrial SCOs.

Community Acceptance – The community appears to accept this proposed remedy with some minor comments.

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Schenectady International – 10th St. Plant
Operable Unit No. 2
State Superfund Project
City of Schenectady, Schenectady County, New York
Site No. 447007

The Proposed Remedial Action Plan (PRAP) for the Schenectady International -10th St Plant site, was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on September 15, 2010. The PRAP outlined the remedial measure proposed for the contaminated soil, and groundwater at the Schenectady International - 10th St Plant site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy. A public meeting was held on September 29, 2010, which included a presentation of the remedial investigation and feasibility study (RI/FS) for the Schenectady International -10th St Plant as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on October 15, 2010.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

COMMENT 1: Why can't we excavate and remove all the contamination regardless of cost?

RESPONSE 1: Excavation to remove the bulk of the contamination was evaluated by the Feasibility Study and it was determined that this is not the best option. Excavation has impacts beyond the monetary cost. Short term impacts such as increased truck traffic and noise would be greatly increased for an extended period of time to implement the removal alternative. The risk for nuisance odors is also increased because an open excavation of contaminated soil would be exposed for an extended time. Also, the full removal would require significant shoring and bracing of existing buildings and measures to maintain the stability of the slopes in the area to be excavated. The in-situ treatment remedy selected will achieve similar cleanup levels resulting in a comparable degree of protection of public health and the environment without these impacts.

COMMENT 2: Why hurry the cleanup? Why not let nature take its course?

RESPONSE 2: Some of the contamination will be remediated using “natural” attenuation and the existing groundwater treatment system. However for the most heavily contaminated soils use of in-situ treatment will speed up the cleanup of the site significantly, allowing groundwater and soil to meet applicable SCGs in a more timely manner. The Department believes that the selected remedy will achieve the cleanup goals while achieving the best balance of costs, effectiveness, implementability, and reduction of toxicity, mobility, and volume of the hazardous wastes.

COMMENT 3: Why didn’t some of the people near SI Group’s facility receive the fact sheet and the notice for this meeting?

RESPONSE 3: The mailing list that was used for this PRAP was the one prepared for the PRAP for OU1 which includes nearby residents. Based on this comment, the Department will modify this list to ensure that all attendees are added .

QUESTION 4: Is there or was there any contamination going into our neighborhood?

RESPONSE 4: The residences along 10th Avenue and Congress Street are located upgradient of the groundwater flow direction and therefore we do not expect contamination from the site to migrate toward homes or other buildings on these streets. Soil vapor points on the perimeter of the site nearest 10th Avenue were also sampled and did not indicate the presence of contaminated soil vapor that could represent a health concern or warrant further investigations.

QUESTION 5: Is the excavation and off-site removal of contaminated soil not being considered because it is too hazardous/dangerous for the surrounding community?

RESPONSE 5: No. The selected remedy of limited excavation, capping and treatment of soils in place (in situ) using a combination of heating and vacuum extraction of soil gases and natural biological biodegredation will require similar measures to minimize the off-site migration of site related contaminants to the nearby community. Such measures, at a minimum, will include monitoring of air and dust at the site's perimeter, utilizing odor and dust suppression techniques, covering truck beds of trucks transporting contaminated soil off-site, and if needed washing of truck tires before trucks exit the site. If the soil excavation for off-site disposal was the selected remedy, similar measures would also be taken to ensure that the surrounding community is protected, however the added volume of excavation would add significant additional time for these measures to be in place with limited additional protection as a result of these short term impacts (also see Response 1).

QUESTION 6: How do you know that this remedy will work?

RESPONSE 6: The in-situ treatment component of the remedy is expected to work based on lab scale and pilot testing. However, should it not prove successful, the ROD includes a contingent remedy which could then be implemented.

QUESTION 7: Why didn't I know that this was a contaminated site? I have lived right next door for nine years.

RESPONSE 7: The contamination is not readily apparent at the surface of the site , rather it is located below ground and was only discovered after collecting and analyzing groundwater and soil samples from below the surface. Residents are notified when a site is identified and at decision points as a site is cleaned up. In this case residents were notified in 2001 when the initial cleanup was done and in 2010 for the current cleanup. At no time has there been an immediate threat to the surrounding community due to the presence of the site.

QUESTION 8: Is SI Group responsible for the cleanup at the site? How do we know they will do it right? Do they make all the final decisions on what needs to be done here? Will SI Group do the cleanup themselves?

RESPONSE 8: SI Group is responsible for cleaning up this site. However, they are not responsible for deciding how to clean up the site. They have proposed several alternative ways of cleaning up this site and it is the Department, after evaluating these alternatives using the criteria listed in the PRAP, which decides which technologies to use to clean up this site.

The Department will be approving the design of the remedy and overseeing the clean-up activities SI Group will conduct. The Department oversight will ensure that the cleanup is done in accordance with the approved plans. In addition, SI Group will have to submit a certification to the Department that states that the cleanup was done in accordance with the approved plans. SI Group will be using contractors to do the actual cleanup.

QUESTION 9: Who is responsible for trash dumped along the street (that goes behind the site?)

RESPONSE 9: Trash dumped on the road or in the public right-of-way is beyond the scope of this ROD

APPENDIX B

Administrative Record

Administrative Record

Schenectady International – 10th St. Plant
Operable Unit No. 2
State Superfund Project
City of Schenectady, Schenectady County, New York
Site No. 447007

- Order on Consent, Index No., between the Department and {Schenectady Chemicals, Inc., executed on August 1987.
- Hydrogeologic Investigation Report , March 1988
- NYSDEC signed a multi-media pollution prevention (M2P2) Consent Order (C. O.) with SIG that required SIG to conduct a RI/FS, August 1993.
- M2P2 C.O. was modified to require SIG to conduct additional remedial activities necessary for the 10th Street plant, September 1994.
- Remedial Investigation (RI) was submitted to the NYSDEC, January 1996.
- Feasibility Study (FS) was submitted to the NYSDEC, July 1996.
- ROD for OU1 approved by NYSDEC, March 1998
- Work Plan to update the RI and FS submitted to NYSDEC, July 2007
- Work Plan to update the RI and FS approved by NYSDEC, August 2007
- Updated Remedial Investigation Report submitted to NYSDEC, January 2009
- Updated Remedial Investigation Report approved by NYSDEC, February 2009
- Updated Feasibility Study for the Site approved by NYSDEC, March 2010
- Proposed Remedial Action Plan for the Schenectady International -10th St Plant site, Operable Unit No. 2 dated September 2010, prepared by the Department.
- CP Plan Developed, September 2010

APPENDIX C

Pre-Design Investigation Report for Phase 2

Pre-Design Investigation Report

Phase 2 Remedial Design
Operable Unit No. 2
Congress Street and Tenth Avenue, Schenectady NY

Site No.447007

CHA Project Number: 15091.5007.41000

Prepared for:
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August 2012

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1.0 BACKGROUND

SI Group, Inc. (SI Group) owned and operated a chemical manufacturing facility located in Schenectady, New York at Congress Street and Tenth Avenue that is referred to as the Congress Street Facility. The Congress Street Facility (Site) encompasses 7 acres with approximately 5.1 acres having been developed. The Site location is shown on the Site Location Map included as Figure 1.

The Site is bounded by Congress Street to the east, Tenth Avenue to the north, Oak Street to the west, and the CSX railroad to the south. Light Industrial properties surround the site to the south and west. Commercial properties are located east and northwest surrounding the site. Residential properties surround the site to the north and northeast.

The Site is secured with chain link fencing on all sides and will be maintained in that manner throughout the remediation process. Security cameras are installed on the site and are monitored from the SI Group Rotterdam Junction Facility guard house which is manned 24 hours a day, 7 days a week. Two gates provide access to the Site, one gate is located near the northwest corner of the site near the intersection of Oak Street and Tenth Avenue and the second gate is located on the southeast corner of the site on Congress Street. The gate on Tenth Avenue is utilized by SI Group personnel and contractors involved in maintenance of the groundwater treatment system. The gate on Congress Street is the gate used to provide access for investigation and remedial activities.

The Site is located on a steep slope that was developed over many years of operation at the Site. Buildings were constructed such that the lower portion of the buildings acted as retaining structures for the upper slope area. The relief across the Site from South to North is approximately 45 feet.

The facility began operation in 1910 and expanded over the years with additional buildings and infrastructure. In 1997, production ceased at the site and in 2004, SI Group removed all the process equipment, storage tanks, piping and buildings remaining on-site except for a small building which remains in use housing a groundwater treatment system. A number of spills occurred at the Site while operational which resulted in chemical releases to the environment. New York State Department of Environmental Conservation (NYSDEC) identified the site as a Class 2 Inactive Hazardous Waste Disposal Site under the State Superfund Program. Classification 2 indicates that the site has identified historical hazardous waste disposal that threatens human health or the environment, and requires remediation.

In 1994/1995, SI Group conducted a Remedial Investigation/Feasibility Study (RI/FS) to determine the nature and extent of contamination present. The RI/FS identified contamination present in two distinct areas that would be most effectively addressed separately. In 1996, NYSDEC decided to split the Site into two operable units providing for separate remedial activities monitoring and goals. The first operable unit, (OU1), addressed eliminating the pathways which allowed contaminants to be released off-site. Following issuance of a Record of Decision (ROD) for OU1 in 1998, SI Group installed a groundwater collection and treatment system to address OU1. The second operable unit (OU2) was identified as the Site and the contaminated soils that are present on –site.

A number of investigations were completed on-site between1984 and 2008 that defined the environmental concerns at the Site. Based on the investigations, a Feasibility Study (FS) was prepared for OU2 identifying the potential remedial options available and submitted the FS to NYSDEC in 2009, which was approved in March 2010. In December 2010, NYSDEC issued a ROD for OU2 defining the selected remedial options and program details. OU2 consists of two areas requiring remediation. These areas are shown on Figure 2 and are identified as the Fill Area and the Process Area. The Fill Area is a historical fill area located in the southwest corner of the Site that encompasses approximately 0.5 acres. The Process Area consists of the area of the site that was used for chemical processing, storage, and handling. The Process Area is located east of the Fill Area on the lower tier of the site, north of the rail line. The selected remedial action to be completed in the Process Area is thermally enhanced Soil Vapor Extraction (SVE), which will remediate the area by withdrawing soil vapor contaminants followed by bioventing to enhance the biologic degradation of the remaining contaminants.

A Remedial Design Work Plan for the Phase I, Site Preparation of OU2 was submitted to NYSDEC in February 2011 and approved in June 2011 following a number of revisions to address NYSDEC comments.. The Work Plan contained a Pre-Design Investigation Work Plan to obtain the necessary data to design the in-situ treatment system that will be used in the Process Area.

Following site preparation work in the Process Area, a supplemental soil investigation was proposed to and accepted by the NYSDEC as a part of the Pre-Design Investigation Work Plan Supplement submitted in January 2012. The additional soil sampling was to investigate areas in the Process Area that were identified during the Site preparation work that may not have been adequately characterized.

2.0 WORK PLAN SUMMARY

Thermally enhanced SVE followed by bioventing has been selected as the remedial design technology for the Process Area. Prior to beginning the Phase 2 Remedial Design for the Process Area, a pre-design investigation was proposed and approved as part of the Phase 1 Remedial Design Work Plan for OU2. This pre-design investigation was needed to gather data to be used during the design of the thermally enhanced SVE system.

The remedial work to be completed under Phase 1 was preparation of the Process Area for installation of the thermally enhanced SVE system, obtaining additional information for the treatment system design, and installation of a permeable cap over the Fill Area. During site preparation of the Process Area, unexpected soil conditions were encountered that required further investigation, as a result a supplement to the pre-design investigation was proposed. The additional investigation included characterization of the contamination present in the rail siding area and further characterization of the shallow soil contamination in the Process Area.

As previously indicated, adjustments to the pre-design investigation work plan were also proposed in order to tailor the test well arrays to the understanding of the most current site information. A work plan to complete additional soil sampling that would further characterize the soil contamination in the rail siding area and investigate the shallow soil contamination in the Process Area was presented as a supplement to the Phase I work plan. This work plan also contained a revised pre-design investigation well location plan. The Pre-Design Investigation Work Plan Supplement dated January 20, 2012 was approved by the NYSDEC prior to implementation. The Pre-Design Investigation Work Plan Supplement is included as Appendix A.

2.1 PRE-DESIGN INVESTIGATION

The application of an SVE system at the subject site requires first the ability to reduce the pore pressure in the soil surrounding the vapor extraction wells and second, the ability to remove contaminants in the unsaturated zones and in the shallow water table. Groundwater will also be extracted to lower the groundwater table allowing the SVE system to be applied to those soils, and effectively remove contaminants that were previously contained within the shallow groundwater table. The information obtained during the pre-design investigation will be used to determine the radius of influence (ROI) for both the dewatering wells and the vapor extraction wells that will ultimately be utilized during the design and operation of the SVE system.

To reduce the pore pressure in the soil, a blower system will be connected to a series of extraction wells. The blower will be used to create a negative pressure in the extraction wells by removing air from the wells while the wells remain sealed. The reduction in pressure creates a pressure gradient in the soils surrounding the extraction wells that will induce flow of the soil vapor to the extraction wells. The distance that the reduced pressure will be established in the soil, and the rate at which gas and vapors will flow through the soil is dependent on soil properties. Flow rates and the resulting partial vacuum will be controlled through the blower operation to produce the optimum collection of contaminated soil vapor for site-specific soil conditions. SVE is effective at removing vapors from the unsaturated soils; however, contaminant removal can also occur from the surface of the groundwater as the soil vapor above the water table is removed.

In order to obtain pre-design information, a series of dewatering wells, monitoring wells, piezometers, vapor extraction wells and vacuum wells were installed. Field tests, described in detail in subsequent sections, were used to determine the ROI for both the dewatering and the soil vapor extraction systems. The results of the testing are to be used to determine the systems design and operational requirements during the Phase 2 Design.

The pre-design investigation was conducted over a period of March 20, 2012 to March 27, 2012 for well installation, and April 11, 2012 to April 18, 2012 for testing. Well installation included construction of three arrays of wells to complete testing in three separate areas across the site. Testing conducted at the three arrays of wells included, groundwater extraction and concurrent groundwater extraction and soil vapor extraction.

2.2 SUPPLEMENTAL SOIL INVESTIGATION

Soil sampling in the rail siding area and the shallow soils in the Process Area was completed on April 2nd 2012. One or two soil samples were collected from each of the fifteen borings completed. The samples were submitted for analytical testing of VOC and SVOC compounds, and disposal characterization. The samples were collected and analyzed according to the details in the Pre-design Investigation Work Plan Supplement.

3.0 INVESTIGATION ACTIVITIES

3.1 PRE-DESIGN INVESTIGATION

As discussed in Section 2.0, the pre-design investigation consisted of both groundwater extraction and soil vapor extraction. The wells required for testing were installed in three locations as shown on Figure 3. The results from the testing will be utilized during the Phase 2 design process to determine the system design and operational requirements. Two test locations (EW-3 and EW-04) were chosen spaced across the site in a manner that would test the range of soil conditions that may be expected to be encountered during the remediation process.

Testing was conducted in two phases, groundwater extraction testing followed by SVE testing concurrent with groundwater extraction. Groundwater extraction testing was initiated to determine the maximum sustainable rate of groundwater withdrawal that is achievable. Three groundwater/SVE test locations were installed to allow for testing of a range of conditions expected to be encountered at the Site and provide design information for those conditions.

Aztech Technologies, Inc. of Ballston Spa, NY (Aztech) provided the well installation and soil boring services under the direction of CHA.

3.1.1 Groundwater Extraction Testing

The groundwater extraction testing involved the installation of two test well arrays, followed by the extraction of the groundwater during which time the groundwater elevations in the surrounding wells was monitored. During development of the wells installed for this testing, it became apparent that the maximum sustainable pumping rate of the extraction wells was very low, less than the discharge rate of the pump being used to develop the wells, (approximately 0.75 gallons per minute (gpm)). The depth to groundwater was measured in the monitoring wells surrounding the extraction well. During development, the depth to groundwater in the surrounding monitoring wells stabilized after a short period of pumping, approximately 90 minutes.

Groundwater extraction testing plans were adjusted from those provided in the Phase 1 Site Remedial Design Work Plan in response to these observations. The necessity of conducting step rate, and long duration pumping events was determined to be unnecessary based upon actual field conditions encountered. The goal of the groundwater extraction testing is to provide enough drawdown to expose contaminated soil that is within the zone of typical static groundwater elevation fluctuation. The design goal was to achieve 2 to 3 feet of drawdown across the treatment area allowing the SVE system to effectively remove contaminants from the soil in that zone.

3.1.1.1 Test Well Installation

A Geoprobe® drill rig equipped with a MacroCore® sampler was used to install the wells. Continuous soil cores were collected from each planned well location extending to the total depth of the well. Boring logs for each well installed are contained in Appendix B.

The subsurface soils described on the boring logs were based upon visual and physical observations conducted during the drilling activities. Additionally, a MiniRAE® Photoionization Detector (PID) was utilized to screen for contaminant concentrations in the soil cores by placing soil into a re-sealable plastic bag and analyzing the headspace. The majority of the wells were installed using hollow stem augers with a plug in the lead auger, the augers were drilled to depth and the well was assembled in the augers. The four piezometers were installed using the Geoprobe® MacroCore® sampler with an expendable point placed in the lead rod, the MacroCore® was pushed to depth and the well was assembled inside the hollow rods. Well completion diagrams are included in Appendix C.

Groundwater extraction wells were installed to a depth of 20 feet below the ground surface (bgs), with a screen interval extending from 5 feet bgs to 20 feet bgs. The wells are constructed of 6-inch diameter PVC with V wire wrapped screen; well construction diagrams for all wells are included in Appendix C. A groundwater extraction well EW-5 was added near SVE-3 in response to the depth to water measured in SVE-3 at the time of completion. EW-5 was installed to a depth of 20 feet bgs with a screen interval extending from 5 feet bgs to 20 feet bgs. This well was constructed of 4-inch diameter PVC with 10 slot screen, (0.01 inch slot width). EW-5 was only used for dewatering during SVE testing.

Adjacent to extraction wells EW-3 and EW-4, piezometers were installed at distances of 5 and 10 feet. The screen interval of the piezometers was 5 feet bgs to 20 feet bgs. The piezometers were constructed of 1-inch diameter PVC with 10 slot screen, (0.01 inch slot width). The piezometers were installed to allow measurement of the response of the groundwater elevation to pumping at different distances from the extraction well. Where available nearby monitoring wells were also used to measure the response of the groundwater elevation to pumping at the extraction well at a greater distance of 30 feet.

3.1.1.2 Test Process

Groundwater extraction testing was conducted using two 0.75-horsepower submersible pumps plumbed to a manifold with in-line digital flow meters and valves to control the flow rate. The pumps were powered by a generator wired to a circuit breaker panel allowing each pump to be operated independently and activated/deactivated from a central location.. The equipment was centrally located near the EW-4 well location and plumbing and power distribution was extended to the remaining two locations. The discharge pipe for the groundwater extraction system consisted of 1-inch diameter high density polyethylene (HDPE) piping. A 12,000 gallon storage tank was placed on the process area to contain all of the groundwater collected during testing.

Groundwater extraction testing was conducted at each of the two locations (EW-3 and EW-4). A network of transducers were installed in the extraction well and the surrounding piezometers. The transducers were programmed to measure the height of the water column above the instrument at an interval of 30 seconds between readings. The transducers were installed and programmed to begin collecting readings prior to the initiation of pumping. Depth to groundwater measurements were collected using an electronic water level meter at the initiation of pumping and periodically during the pump testing. The pump discharge rate was controlled by partially closing the valve installed at the discharge manifold. The pump utilized in the testing was capable of extracting water at a much higher rate than the aquifer being tested could yield. The pump discharge rate was manually reduced to as best as possible to match the recharge rate of the well being tested.

The extraction wells were evacuated fully within approximately 5 minutes following the initiation of pumping. The depth to groundwater in each extraction well was maintained at the pump inlet with a pumping rate of approximately 0.5 gallons per minute. The valve controlling the pump discharge rate was near fully closed to maintain this rate. The extraction wells were able to recharge at the rate of pumping. The wells would recharge enough to allow a slug of water to discharge, and then a 30 second to 1 minute period of recharge was necessary.

The groundwater extraction test was continued until depth to water measurements in the furthest piezometer stabilized. The stabilization of the water depth in the piezometers and maintaining the extraction well groundwater depth at the pump inlet indicated that continued testing was not necessary. Following stabilization, pumping was terminated and manual depth to water measurements and transducer readings were continued until the groundwater elevations had recovered to near the pre-testing condition.

3.1.2 Soil Vapor Extraction Testing

SVE testing involved the installation of three vapor extraction wells to a depth of 15 feet bgs. Adjacent to the vapor extraction wells, vacuum well clusters were installed to measure the response to lowering the pressure in the vapor extraction wells. The vacuum well clusters consisted of three test well that installed at different elevations. SVE testing was conducted using a mobile pilot test unit consisting of a blower and off-gas treatment system. The pilot test unit was connected to each well head and the blower was operated at three different rates of withdrawal for three to four hours. Pressure transducers were placed in each of the wells in the well clusters and measured the pressure established in the well during each test. Based on these measurements, the ROI was determined at each elevation and flow rate.

3.1.2.1 Test Well Installation

The SVE well installation process was similar to that described in Section 3.1.1 with the boring logs contained in Appendix B and the well construction diagrams contained in Appendix C.

Soil vapor extraction wells SVE 1 and SVE 3 were installed to a depth of 15 feet bgs, with a screen interval extending from 5 feet bgs to 15 feet bgs. Soil vapor extraction well SVE 2 was installed to a depth of 20 feet bgs with a screen interval extending from 5 feet bgs to 20 feet bgs. The SVE wells are constructed of 4-inch diameter PVC, with 10 slot screen, (0.01 inch width slots).. Adjacent to the three SVE wells, vacuum well clusters were installed to measure the response to lowering the pressure in the SVE well. Vacuum well clusters were installed at distances of 5 and 10 feet from the test well. Each vacuum well cluster consists of three wells installed in a single borehole creating a shallow, intermediate and deep monitoring point. The shallow monitoring point has a screen interval from 3 to 5 feet bgs, the intermediate monitoring point has a screen interval from 8 to 10 feet bgs, and the deep monitoring point has a screen interval between 13 to 15 feet bgs. The three screen intervals are separated by installation of a hydrated bentonite seal that is approximately 2 feet thick.. The vacuum well clusters are constructed of 1-inch diameter PVC with 10 slot screen, (0.01 inch slot width) in a sand pack.

3.1.2.2 Test Process

The wells were sealed using either expanding well caps or tight fitting slip caps sealed with polytetraflouroethylene (PTFE) tape. Sealing the wells to the atmosphere is necessary in order to conduct SVE testing and minimize the potential for short-circuiting. Necessary penetrations into the well risers or caps to install transducers were sealed by tapping threaded holes into the PVC and fitting each penetration with a cord protector that pressure seals when screwed together.

The SVE testing was conducted using a mobile pilot testing system provided by Aztech. The system consists of a regenerative blower (7.5 horsepower) in conjunction with a cyclonic knockout unit, a moisture separator with discharge pump, and two 55 gallon vapor phase carbon vessels connected in series. The plumbing for the SVE testing consisted of 2-inch diameter PVC.

The mobile pilot test unit was plumbed toeach SVE wellhead and operated at three different rates of withdrawal to complete testing over a period of three to four hours. The three rates of withdrawal were maintained for roughly one hour each in order to ensure that the system of wells was able to maintain a steady reduced pressure and collection of soil vapor was established. Groundwater extraction was conducted for approximately 90 minutes prior to initiation of the SVE test in order to effectively dewater the testing area. The rate and duration of dewatering was determined during the groundwater extraction testing to have provided significant depression of the groundwater, continued extraction beyond that time would cause groundwater depression at a much slower rate with minimal impact on the test. Groundwater extraction was continued through the SVE testing in order to maintain the depressed groundwater condition within the testing zone.

Real time monitoring of the transducer data was not available with the equipment utilized for the testing. The analog pressure gauge installed at the SVE well was used to determine the amount of pressure reduction applied and verify that the pressure remained steady at the test well. The wells involved in the testing and monitoring remained sealed during the testing. The data collected during the test was downloaded from the transducers following completion of the test. The effect of the testing on the soil was not known until the testing was completed, and therefore, the measured effect could be used as an indicator of when to decrease the pressure in the test well, or if the effect of the testing had reached a particular distance from the test well. These limitations were managed by running the test for a significant amount of time at each pressure, and using the minimum pressure available as the final testing step.

The pressure transducers operated within the range of pressure used during the test, which in this case was -60 inches of water column. The testing was conducted at three steps of pressure reduction, -20 inches of water column, -35 inches of water column, and -50 inches of water column. The test system was able to achieve and maintain the reduction in pressure attempted to complete the testing. An Omega HHF42 hot wire anemometer was utilized to collect periodic flow readings in the 2-inch diameter PVC pipe connecting the test well to the blower. Readings collected were between 400 and 1,040 feet per minute, with an average of 700 feet per minute.

Samples of the soil vapors were collected into 1- liter Summa canisters during the testing in order to determine the content, and concentrations of the VOCs being collected during testing. The Summa canisters were delivered from the laboratory under high partial vacuum and equipped with flow controllers that were set to allow vapors to enter the canister slowly. The laboratory indicated that typical collection times extend beyond the duration of the testing completed, and therefore, the sample collection should continue until the canister had reached a partial vacuum of approximately 3 inches of Hg column. The duration of the sample collection was approximately 15 minutes and the pressure gauge on the canister was monitored during that time to ensure that sample collection was terminated as the laboratory had directed.

An air sample from SVE 2 was collected, which is located in the central portion of the Site, after the test had been progressing for approximately 3 hours. Samples SVE3 and SVE 3A were collected from the testing array located in the easternmost portion of the site. Sample SVE3 was collected after the testing had been progressing for approximately 0.5 hours while sample SVE 3A was collected after the testing had been progressing for approximately 4 hours. Table 4-1 provides a summary of the total VOCs concentrations collected. A summary of the detected compounds and their concentrations is included in Appendix D.

3.2 SUPPLEMENTAL SOIL INVESTIGATION

Soil samples from fifteen boring locations were collected to further characterize the nature and extent of contamination present in shallow soil across the Process Area and along the rail siding. Samples were collected from specific intervals of the soils targeting particular zones of interest to identify contamination present that may require expansion of the treatment system. Samples were collected for laboratory analysis of VOCs and SVOCs, and two composite samples were collected from the rail siding for disposal characterization.

3.2.1 Rail Siding

Soil samples were collected along the west end of the rail siding beginning approximately 60 feet east of the termination of the line and continuing west for roughly 240 feet. Five boring locations (SB 01-12 through SB 05-12) as shown in Figure 3 were completed at a spacing of approximately 60 feet between borings. The borings were completed to a depth of 5 feet bgs using a Geoprobe Systems® direct push MacroCore® sampler. Recovery of soil was typically three feet of the available five feet. The crushed stone that had been placed to create a base for the asphalt cap limited the recovery in this interval, as it tends to compress the underlying soil until sufficient backpressure is achieved to force the stone/soil into the sampling device. The recovery was sufficient to obtain the required samples from the shallow soil overlying the bottom of the rail bed grade which was determined to be approximately 4 feet bgs during the excavations completed as part of the site preparation. Samples were collected from the soil interval that appeared to contain the greatest contaminant concentration based on PID measurements, and visual and olfactory screening. The soil sampling boring logs are included in Appendix D.

3.2.2 Process Area

Soil samples were collected from the Process Area with the intent of characterizing the contamination present in the shallow soil. Ten boring locations (SB 06-12 through SB 15-12) as shown on Figure 4 were installed covering a substantial portion of the Process Area outside of the rail siding. The borings were completed to a depth of 5 feet bgs using a Geoprobe Systems® direct push MacroCore® sampler. Recovery of soil was typically three feet of the available five feet. The partial recovery was due to similar soil conditions as describe in Section 3.2.1. The recovery was sufficient to obtain the required samples of the soil immediately below the crushed stone asphalt subgrade and the upper portion of the first silt encountered. Boring Logs are provided in Appendix D.

3.2.3 Soil Analysis

The soil samples collected from these borings were submitted to Test America Laboratories of Buffalo, a Environmental Laboratory Accreditation Program (ELAP) certified analytical laboratory accredited for analysis of samples collected from sites of environmental contamination. Samples were collected based on the target intervals and the interval showing the greatest concentration of contaminants based on PID measurements, and visual and olfactory examination. The samples were collected from the MacroCore® liner into laboratory provided glassware, labeled and logged onto a chain of custody. The samples were stored temporarily during collection in a cooler partially filled with ice in order to maintain an environment of approximately 4 degrees Celsius as preservation prior to analysis.

Samples were transported to and relinquished at the Test America service center in Albany, New York for transportation to the analytical facility in Buffalo, New York. The samples were analyzed for volatile organic compounds (VOC) by EPA Method 8260B, and semi-volatile organic compounds (SVOC) by EPA Method 8270, which represent the contaminants of concern identified in the ROD. A total of 20 sets of samples were collected for analysis. A high sample density was collected in order to refine the area targeted for remedial action. The results of the sample analysis are presented on Figure 4 and discussed in Section 4.2.

3.3 SITE CONTROLS

3.3.1 Decontamination

A temporary decontamination pad was constructed of polyethylene sheeting and lumber to form a basin. Equipment that came into contact with soil or groundwater was taken to this location for decontamination. The decontamination was completed using a steam cleaner with a pressure washer nozzle. The water from the cleaning was allowed to evaporate from the decontamination pad, and the remaining soil and polyethylene sheeting was containerized in a drum with soil. Disposable sampling equipment was used to complete these tasks, and disposed of with the soil.

3.3.2 Fugitive Dust/VOC Monitoring

In accordance with the Community Air Monitoring Plan (CAMP) and the Health and Safety Plan (HASP), fugitive dust monitoring is required during all ground intrusive activities such as concrete slab removals, concrete crushing, and contaminated soil excavations. The activities that were conducted in order to prepare for and complete the testing described in this document, did not disturb significant areas of the asphalt cap, or involve activities that cause significant fugitive dust to be generated. Therefore, the CAMP was not implemented during the investigation activities detailed in this report.

Continuous monitoring for VOCs using a MiniRAE® PID was performed during well installation and soil sampling. The PID was used for monitoring in the immediate vicinity of the work zone or downwind of the activities. The PID was set to alarm in the event that the action level of 5 parts per million (ppm) was exceeded over a 15-minute time weighted average during the site activities.

CHA had staff on-site for all ground intrusive activities during the activities and no readings in excess of the air monitoring safety thresholds were noted.

3.3.3 Waste Handling and Storage

Soil cuttings and purge water from well development and testing were generated during the activities conducted and contained on Site. The following information details the waste streams, quantity of material, the containment, and temporary storage of the waste:

- Purge Water: Approximately 1,100 gallons was generated and stored in a FRAC Tank with a capacity of 20,000 gallons. The purge water was generated during well development and testing. The tank remains on the asphalt cap in the process area and is undergoing sampling and laboratory analysis to determine appropriate disposition.

- Non-Hazardous Contaminated Soil: Twenty one, 55 gallon drums of soil cuttings from well installation and sampling were generated and temporarily staged on the asphalt cap of the Process Area for removal and disposal. Precision Industrial Maintenance of Schenectady, New York removed the drums and soil cuttings. The soil cuttings were transferred into a 20 yard roll off box and transported to Waste Management High Acres Landfill in Fairport, New York for disposal as a non-hazardous waste. The drums were scraped clean, crushed and scrapped for recycling.

4.0 RESULTS/FINDINGS

4.1 PRE-DESIGN INVESTIGATION

The testing was conducted in order to determine the viability of applying thermally enhanced SVE at the site to effectively remediate the contaminants present within the requirements of the ROD and directives of 6 NYCRR Part 375. The objectives of the remediation program are to remove the contaminants at the site to the greatest extent possible within the capability of the prescribed remedy. The prescribed remedy includes three components;

- Soil Vapor Extraction,
- Groundwater depression, and
- Thermal Enhancement.

The SVE will remove the volatile contaminants that are present in the soil vapor, groundwater depression will expose more soil to vapor extraction, and thermal enhancement will both increase the vaporization of the volatile contaminants and increase biologic activity. Microbes will consume the contaminants that are not of sufficient volatility and the biological activity converts the contaminants into compounds that are non-toxic. The testing was necessary in order to determine that the soil conditions at the site are such that groundwater could be extracted and airflow could be induced in the treatment area. The ability to apply groundwater extraction and induce airflow will allow a system to be installed and operated successfully.

The data collected from the site specific testing confirmed that the two necessary conditions can be met and provides the necessary information to determine system design characteristics. Thermal enhancement can be achieved through a number of available technologies. Thermal enhancement was not included in the testing.

4.1.1 Groundwater Extraction

The groundwater testing confirmed that the extraction wells could be evacuated while continuing to produce water at less than 0.5 gallons per minute. The flow rate and total volume of groundwater extracted from each well tested was difficult to determine accurately because of the equipment utilized to collect the measurements. Digital totalizer flow meters were used in each discharge line to collect flow data from the extraction wells during pumping, however the instruments only function properly when a consistent flow of water is maintained at rate of at least 0.5 gallons per minute. The instruments were not able to collect valid and accurate data because the wells were pulsing groundwater as the fully evacuated well would recover to above the pump inlet. The recovery period for the wells was very short, indicating that the rate of groundwater flowing into the well was nearly the rate of groundwater flowing out of the well, which was less than 0.5 gallons per minute.

An instantaneous flow measurement was made during the test, which involved discharging the flow into a graduated container and measuring the time required to fill the container. This measurement showed a flow of approximately 0.4 gallons per minute.

The pump test results for EW-3 and EW-4 are presented on a series of charts that are included in Appendix E. The charts show the depression of the groundwater 10, 20 and 30 feet from the extraction wells at an extraction rate of less than 0.5 gallons per minute.

4.1.2 Soil Vapor Extraction

The soil vapor extraction testing confirmed that reducing the pressure in extraction wells SVE1, SVE2 and SVE3 reduced the pore pressure in the surrounding soil indicated by measurable reduced pressure in the monitoring wells. The soil vapor extraction test results are presented on a series of charts that are included in Appendix F. The charts show the change in pressure at 5 and 10 feet from the SVE well at three different soil intervals, and three difference levels of vacuum in the extraction wells.

The soil vapor extraction testing confirmed that the reduced pressure in the extraction wells also induced flow of vapors from the surrounding soil. Samples of the vapors being collected were submitted for analysis of VOCs in order to verify that contaminants were being collected by the system. The results of those samples are summarized in Table 4-1 with the analytical report from Test America in Appendix G.

Table 4-1. TO-15 Analysis Results

Sample Identification	Test Operating Time	Sample Result Total VOCs
Soil Vapor Extraction Well 2	3.0 Hours	99.9 µg/L
Soil Vapor Extraction Well 3A	0.5 Hours	353 µg/L
Soil Vapor Extraction Well 3B	4.0 Hours	5,576 µg/L

Note: Test America, Inc. Burlington Vermont conducted the analysis.

The samples were collected from two different areas of contamination. The results showed that the area containing higher levels of contamination yielded higher contaminant concentrations in the soil vapor than the area containing lower levels of contamination. The soil vapor samples, Soil Vapor Extraction Well 3A and 3B, were collected at different operating pressures and times during the testing to determine if the concentration of VOCs would increase in response to the change in pressure. The concentration of VOCs extracted from SVE3 while testing at -50 inches of water (Soil Vapor Extraction Well 3B) was significantly greater than the concentration extracted at -20 inches of water (Soil Vapor Extraction Well 3A).

4.2 SUPPLEMENTAL SOIL INVESTIGATION

A summary of the detected compounds and concentrations is presented in Appendix H. A copy of the laboratory report containing the sample results is contained in Appendix E.

4.2.1 Rail Siding

As shown on Figure 4, the greatest contaminant concentrations were encountered in the central portion of the rail siding area, (SB 02-12, SB 03-12, and SB 04-12). The samples collected in this area were reported to contain high concentrations of both VOCs and SVOCs. The samples were collected from the interval of soil that was disturbed during construction of the rail siding, which lies directly atop an interval of undisturbed soil consisting mainly of silt.

The extent of significant contamination along the rail siding is limited to the central portion of the area and is present above the native silt deposit that is found at approximately 4 to 6 feet bgs. The samples collected from borings SB 01-12 and SB 05-12 contained substantially less contamination than the borings between those locations.

The detected compounds consist mainly of toluene, ethylbenzene and xylene with xylene as the primary contaminant. The samples also contain significant concentrations of SVOCs, with naphthalene as the primary contaminant. No samples collected from this area contained product. The similarity in the nature of the contamination indicates that the planned remediation should be effective in this area.

4.2.2 Process Area

As shown on Figure 4, the greatest contaminant concentrations were encountered west of the rail siding in the Process Area. Generally high concentrations of contaminants were reported in the central portion of the site, and generally low concentrations of contaminants were reported in the peripheral samples. The contaminant distribution, in the shallow interval sampled, indicates greater contaminant concentrations increasing toward SB 06-12, and decreasing rapidly toward the east and southeast.

The contamination identified throughout the process area confirms the formerly identified treatment area is adequate. The detected compounds consist mainly of toluene, ethylbenzene and xylene with xylene as the primary contaminant. The samples also contain significant concentrations of SVOCs, with naphthalene as the primary contaminant. No samples collected from this area contained product. The results of the sampling in this area showed that treatment will be necessary but the shallow soils did not show a significant source of contamination. The similarity in the nature of the contamination indicates that the planned remediation should be effective in this area.

FIGURES

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SITE LOCATION

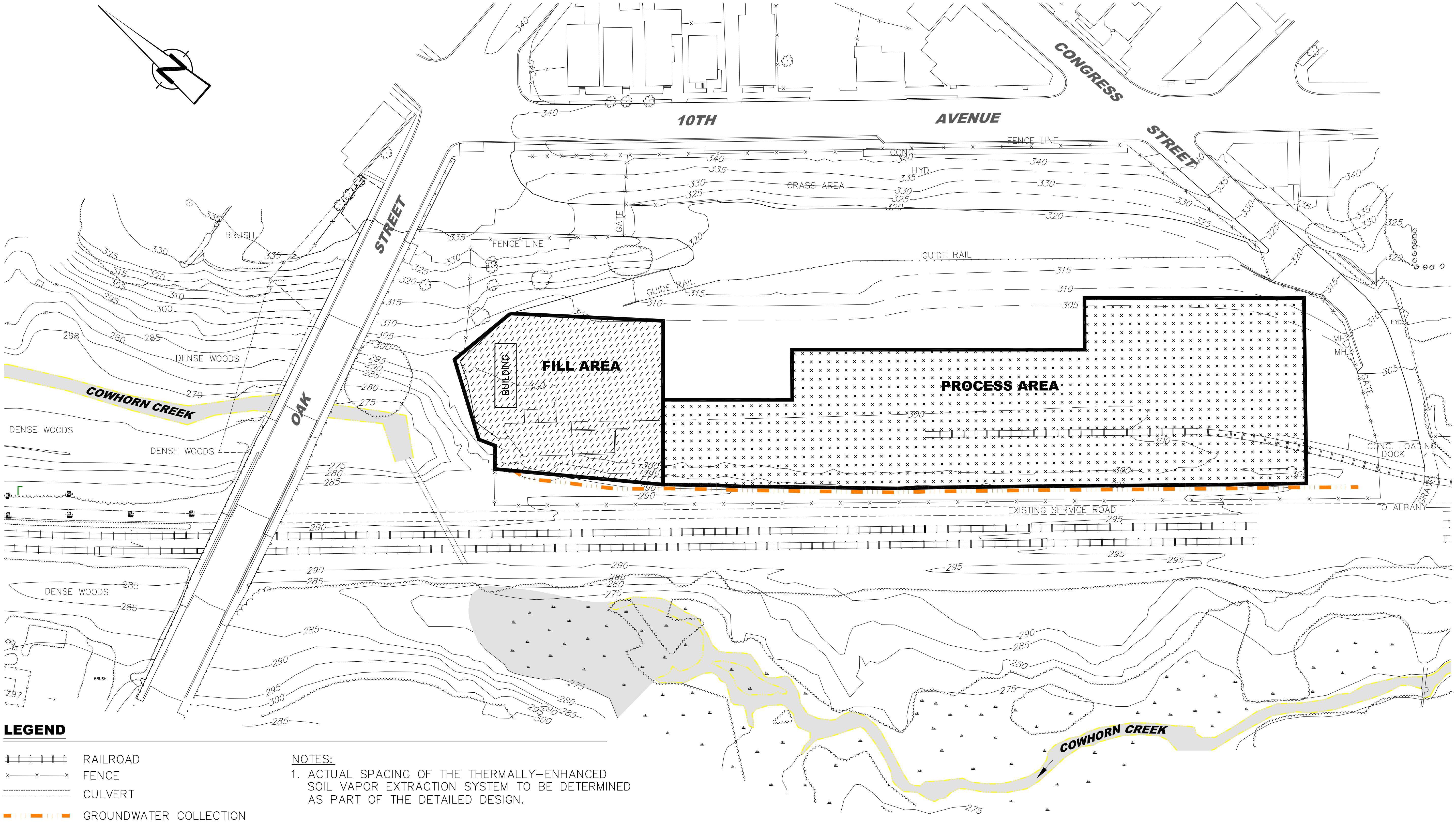
CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

PROJECT NO.
15091

DATE: 01/10/2011

FIGURE 1

File: M:\15091\CS\PHASE I DESIGN\CADD\ACAD\FIGURES\FIGURE 1.DWG Saved: 1/10/2011 11:37:33 AM Plotted: 1/10/2011 11:39:06 AM User: Newell, Sarah



LEGEND

┼┼┼┼┼┼ RAILROAD

—×—×— FENCE

┈┈┈┈ CULVERT

▬ ▬ ▬ GROUNDWATER COLLECTION TRENCH

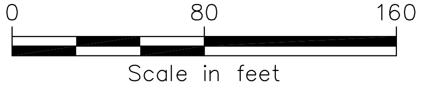
—300— CONTOUR WITH ELEVATION

▨ FILL AREA

☒ PROCESS AREA

NOTES:

1. ACTUAL SPACING OF THE THERMALLY-ENHANCED SOIL VAPOR EXTRACTION SYSTEM TO BE DETERMINED AS PART OF THE DETAILED DESIGN.



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SITE PLAN

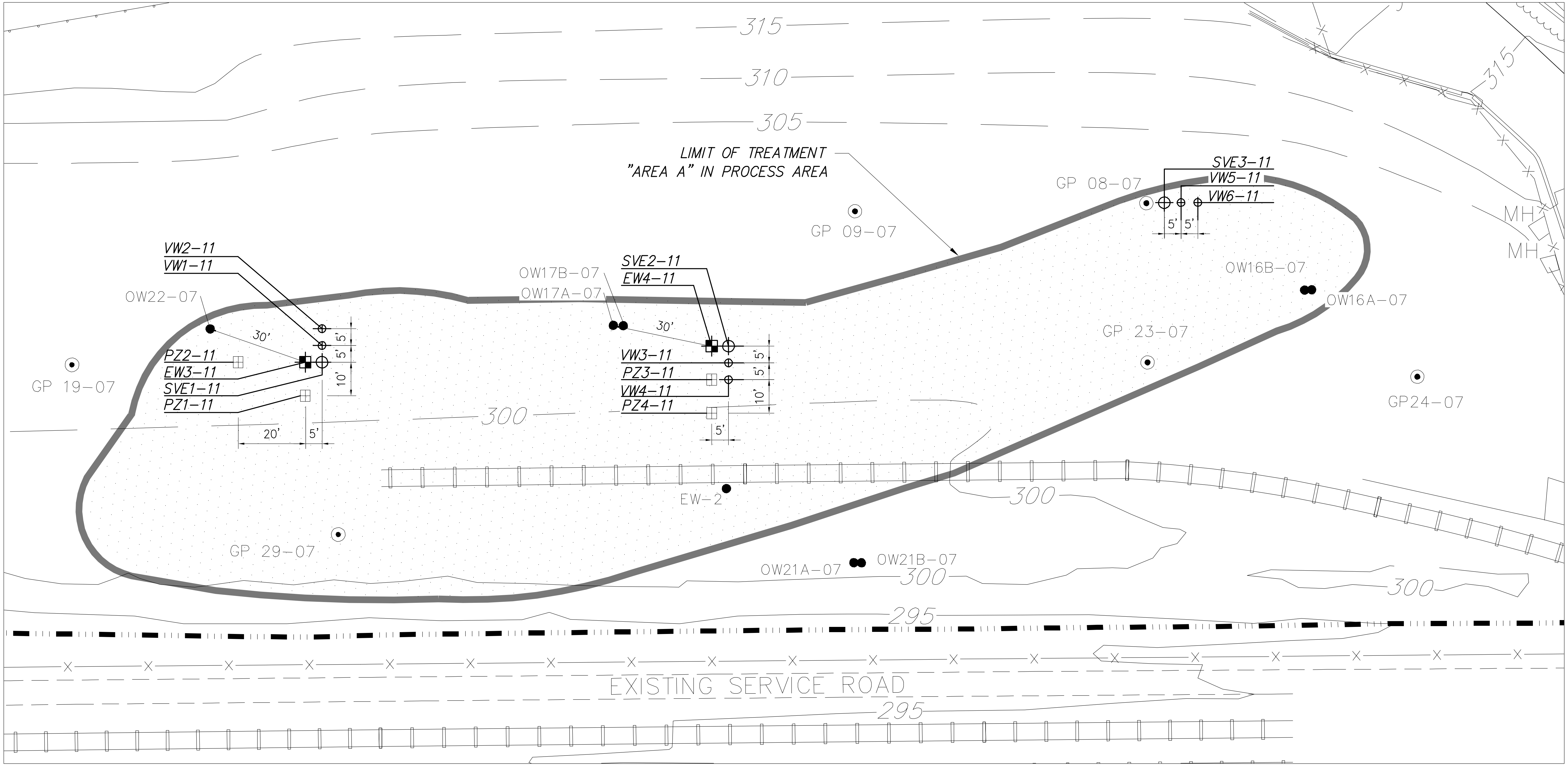
CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

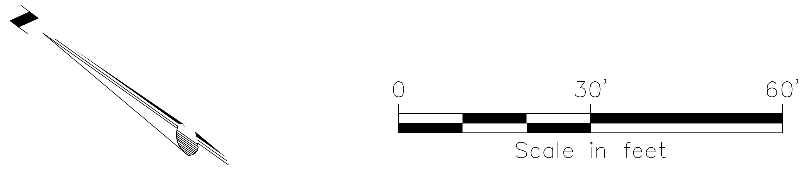
PROJECT NO.
15091.4007.31000

DATE: 1/11

FIGURE 2

File: M:\15091\CS\PHASE I DESIGN\CADD\ACAD\FIGURES\APPENDIX C_SOIL AND STORMWATER MANAGEMENT PLAN\15091_FIG-2_SITE.DWG Saved: 1/14/2011 7:45:13 AM Plotted: 1/18/2011 9:56:32 AM User: Newell, Sarah LastSavedBy: 1393





LEGEND

┼┼┼┼┼┼┼	RAILROAD
×——×——×	FENCE
═══	CULVERT
━━━	GROUNDWATER COLLECTION TRENCH
——300——	CONTOUR WITH ELEVATION
OW22A-07 ●	EXISTING OBSERVATION WELL LOCATION
GP 18-07 ⊙	EXISTING GEOPROBE LOCATION
SVEXX-11 ⊕	PROPOSED SVE WELL LOCATION
VWXX-11 ⊕	PROPOSED VACUUM WELL CLUSTER/TRIPLET LOCATION (SHALLOW, INTERMEDIATE, & DEEP)
PZXX-11 ⊞	PROPOSED PIEZOMETER LOCATION
EWXX-11 ■	PROPOSED DEWATERING WELL LOCATION

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PHASE 2 PRE-DESIGN INVESTIGATION

CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

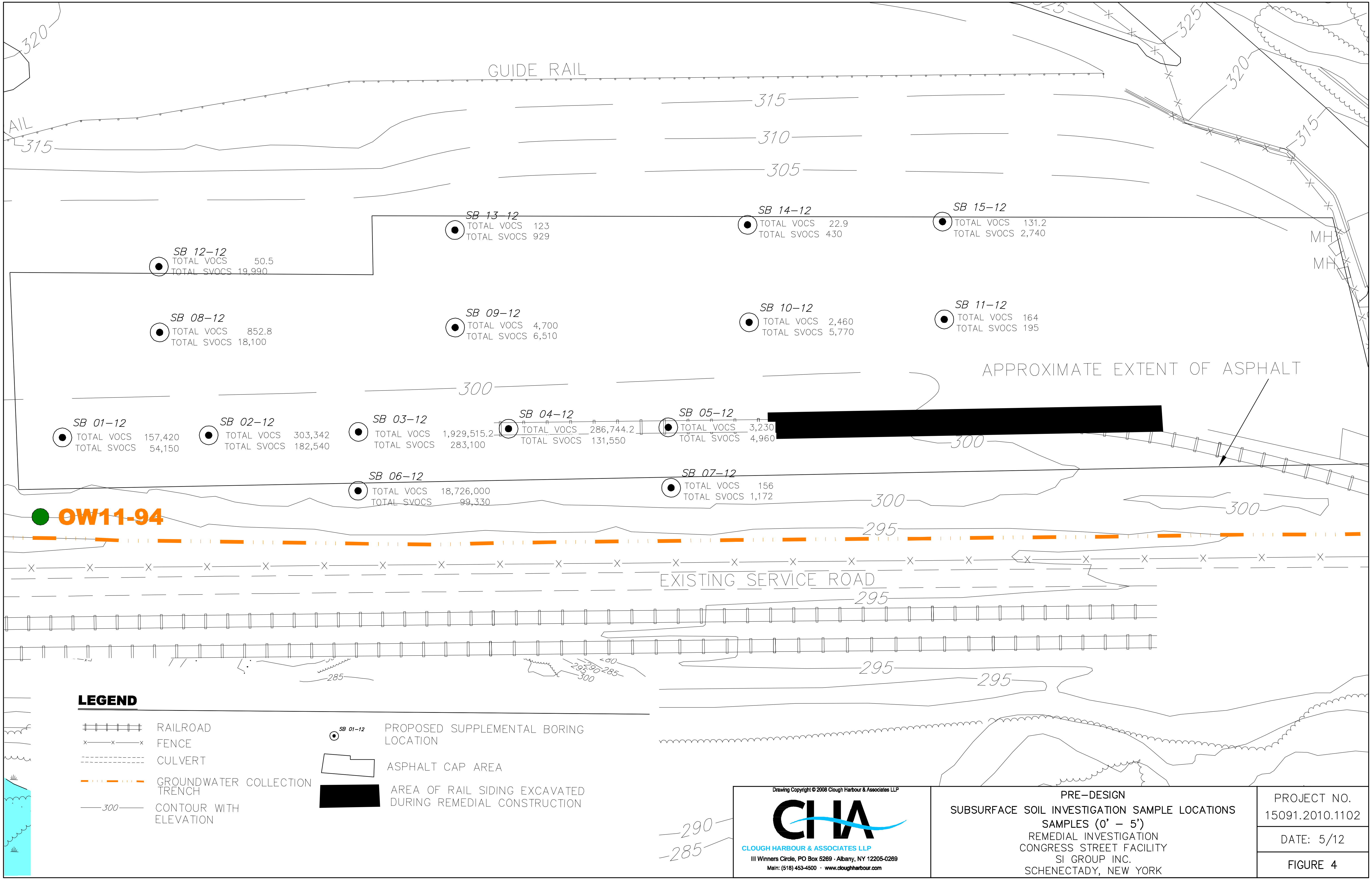
PROJECT NO.
15091

DATE: 12/2011

FIGURE 3

File: M:\15091\CS\PHASE I DESIGN\CADD\ACAD\FIGURES\REVISED PRE-DESIGN INVESTIGATION LAYOUT.DWG Saved: 5/14/2012 2:56:40 PM PLotted: 8/14/2012 11:24:01 AM User: Blaydes, Bryon

File: M:\15091\CS\PHASE 2 DESIGN\CS SOIL BORING RESULTS.DWG Saved: 6/1/2012 10:56:19 AM Plotted: 8/14/2012 11:27:41 AM User: Blaydes, Bryon



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PRE–DESIGN
SUBSURFACE SOIL INVESTIGATION SAMPLE LOCATIONS
SAMPLES (0' – 5')
REMEDIAL INVESTIGATION
CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

PROJECT NO.
15091.2010.1102

DATE: 5/12

FIGURE 4

APPENDIX A

Pre-Design Investigation Work Plan Supplement

PRE-DESIGN INVESTIGATION WORK PLAN SUPPLEMENT
SI Group Congress Street Facility

1.0 INTRODUCTION

A pre-design investigation work plan was proposed as part of the Remedial Design Work Plan for the Congress Street facility of SI Group that was submitted to New York State Department of Environmental Conservation (NYSDEC) in January 2011 and approved on June 20, 2011. The purpose of the pre-design investigation is to gather sufficient data to design the remedial alternative selected in the Record of Decision. Based on a continued review of site conditions, the following modifications to the Pre-design Investigation Work Plan are proposed:

- Minor changes to the soil vapor extraction (SVE) and groundwater extraction wells to be installed as part of the pre-design investigation;
- Characterization of contamination present in the Rail Siding Area; and
- Further characterization of the shallow soil contamination in the Process Area

2.0 MODIFICATION OF SVE AND GROUNDWATER EXTRACTION WELL DESIGN FOR THE PRE-DESIGN INVESTIGATION

The following modifications are proposed to the SVE and groundwater extraction well design.

Based on further review of existing groundwater analytical data, contamination generally does not extend to the previously proposed depth of the extraction wells as shown in Table 1, i.e. 30 feet below ground surface (bgs). In order to prevent contamination from migrating downward to clean soils within the annular space of the proposed monitoring wells, the maximum depth of the proposed extraction wells is proposed to be reduced to 20 feet bgs.

In addition, the extraction well system has been reconfigured in order to better utilize the existing monitoring well network and to reduce the number of new wells to be installed, as shown on Figure 1.

The screened interval of the piezometers to be used in evaluating the groundwater elevation depression caused by the extraction wells is proposed to be raised to shallower depths in order to evaluate the perched groundwater interval that was observed during the Phase I remedial activities. The proposed change in screened interval is shown in Table 1.

The number of vacuum monitoring well clusters intended to determine the radius of influence of the soil vapor extraction wells, is proposed to be reduced from three (3) triplet wells per location to two (2), as shown on Figure 1. The data generated from these locations has been determined to be sufficient to determine the spacing that will be utilized in the final system design.

The well cluster locations are proposed to be installed within a single hollow stem auger boring to complete the installation rather than each well being installed in an individual direct push boring. The proposed installation will provide higher quality data by reducing the distance between the individual wells in each cluster and more closely replicating the ideal condition of collecting the data from a single point.

The changes proposed above are summarized in the following table:

Table 1

DESIGN ITEM	ORIGINAL DESIGN	PROPOSED CHANGE
Extraction Well Depth	Max. depth of 30 feet bgs	Max. depth of 20 feet bgs
Extraction Well Screen Interval	Top of water table to 15 feet below	5 feet to 20 feet bgs
Number of Piezometers	6 total	4 total – Please note that the locations of the EWs have been changed in order to utilize pre-existing wells as the third piezometer for each EW location
Piezometer Depth	Max. depth of 30 feet bgs	Max. depth of 20 feet bgs
Piezometer Screen Length	10 feet	15 feet
Piezometer Screen Interval	Set to straddle the water table	5 feet to 20 feet bgs
Number of Vacuum Monitoring Wells	3 clusters (triplets) per SVE well	2 clusters (triplets) per SVE well
Installation of Vacuum Monitoring Wells	Each monitoring well in the cluster (triplet) was to be installed in its own Geoprobe™ borehole approximately 2 feet apart	All three monitoring wells in each cluster (triplet) will be installed together in a 4.25” Hollow Stem Auger borehole

3.0 CHARACTERIZATION OF CONTAMINATION PRESENT IN THE RAIL SIDING AREA

During the Phase 1 remedial activities, the area where the rail siding was located was identified as containing highly contaminated soil. The highly contaminated soil in the rail siding area from approximately the east side of the Process Area adjacent to the site boundary to EW2 was removed. Due weather conditions and the need to secure the site for winter, further excavation of the rail siding was terminated.

In order to further characterize the nature and extent of soil contamination remaining in the area, five (5) soil borings, GP 01-12 through GP 05-12, in the rail siding area are proposed to be completed as shown on Figure 2 . The borings will be terminated at the bottom of the ballast in the rail siding, which is estimated to be approximately four (4) feet bgs and is generally identified by a silt layer.

Each soil boring will be advanced using direct push drilling techniques. Continuous soil samples will be collected throughout the depth of each borehole and characterized for soil description and apparent contamination by a qualified field geologist or engineer. The soil samples upon retrieval will be contained in a clear acetate liner that will be screened upon retrieval for evidence of contamination in the form of photoionization detector (PID) response, visual and olfactory indications. The soils collected in the sampling apparatus will be described in detail, including grain size and distribution, moisture content, recovered volume, color, apparent contacts, and additional distinguishing characteristics.

Based on the screening results, one (1) soil sample will be collected from each boring location and submitted to a qualified laboratory for analysis. Samples will be analyzed for volatile organic compounds (VOCs) via EPA method 8260 and semi-volatile organic compounds (SVOCs) via EPA method 8270. The portion of the soil collected for VOC analysis will be from the six (6) inch interval showing the greatest level of contamination. The remaining portion of the soil will be composited to collect the sample volume to be analyzed as indicated above. Each soil sample will be submitted to a laboratory certified under the New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP) following proper chain of custody protocol.

Two (2) of the five (5) borings will be chosen to have additional samples collected for disposal characterization as required by the disposal facility. A waste stream characterization of the material has been completed during previous remediation activities; this material will be analyzed to verify compatibility with the existing waste stream profile. Disposal characterization will include the following analyses; polychlorinated biphenyls (PCBs) (method 8082), TCLP Mercury (method SW7470A), TCLP RCRA 8 Metals (method SW1311), TCLP SVOCs (method SW3510), TCLP VOCs (method SW1311), Flash Point (method SW1010), pH (method SW9045B), Moisture content (method D2216), Reactive Sulfide (method SW7.3.4.2), and Reactivity (method SW846 7.3.3.

Upon completion, each borehole will be backfilled utilizing bentonite chips to approximately three (3) feet bgs, a concrete bentonite slurry to approximately one (1) foot bgs, sand to approximately six (6) inches bgs, then the asphalt surface restored to ensure proper drainage.

4.0 CHARACTERIZATION OF SHALLOW SOIL CONTAMINATION IN THE PROCESS AREA

An area of soil contamination in the Process Area was identified during the Phase 1 remedial activities that appeared to be present in the shallow interval from the ground surface to above a silt layer that was typically observed at one (1) to two (2) feet bgs. The contamination became apparent after removal of the concrete associated with the buildings when moderate to heavy rainfall created puddles of discolored rainwater. The discoloration of the surface water appeared to be unnatural and samples collected from the shallow pools were submitted for analysis which confirmed that contamination was leaching from the soil into the water when the soils became saturated. A toe drain was installed in the area where the rail siding was removed from the east side of the Process Area to EW2 The toe drain was connected to the groundwater collection system. An asphalt cover was placed over the Process Area to limit the amount of storm water that would infiltrate into the area.

A total of ten (10) soil borings will be completed in the Process Area to further characterize the nature and extent of this area of shallow soil contamination. The proposed soil boring locations (GP 06-12 to GP 15-12) are shown on Figure 2. Each soil boring will be advanced using direct push drilling techniques. Continuous soil samples will be collected throughout the depth of each borehole and characterized for soil description and apparent contamination by a qualified field geologist or engineer. The soil samples upon retrieval will be contained in a clear acetate liner that will be screened upon retrieval for evidence of contamination in the form of photoionization detector (PID) response, visual and olfactory indications. The soils collected in the sampling apparatus will be described in detail, including grain size and distribution, moisture content, recovered volume, color, apparent contacts, and additional distinguishing characteristics.

Soil borings will be advanced to a depth of approximately five (5) feet bgs. Based on the field screening results, two (2) soil samples will be collected from each boring location and submitted to a qualified laboratory for analysis. One (1) sample will be collected from the first foot of soil encountered beneath the crushed concrete and the second will be collected from the interval exhibiting the greatest potential contamination, or the uppermost portion of the underlying silt as appropriate based on screening results and observations. The samples will be placed directly into the appropriate laboratory supplied containers. The soil samples will be analyzed for VOCs via EPA method 8260 and SVOCs via EPA method 8270.

Upon completion, each borehole will be abandoned utilizing bentonite chips to approximately three (3) feet bgs, a concrete bentonite slurry to approximately one (1) foot bgs, sand to approximately six (6) inches bgs, then the asphalt surface restored to ensure proper drainage.

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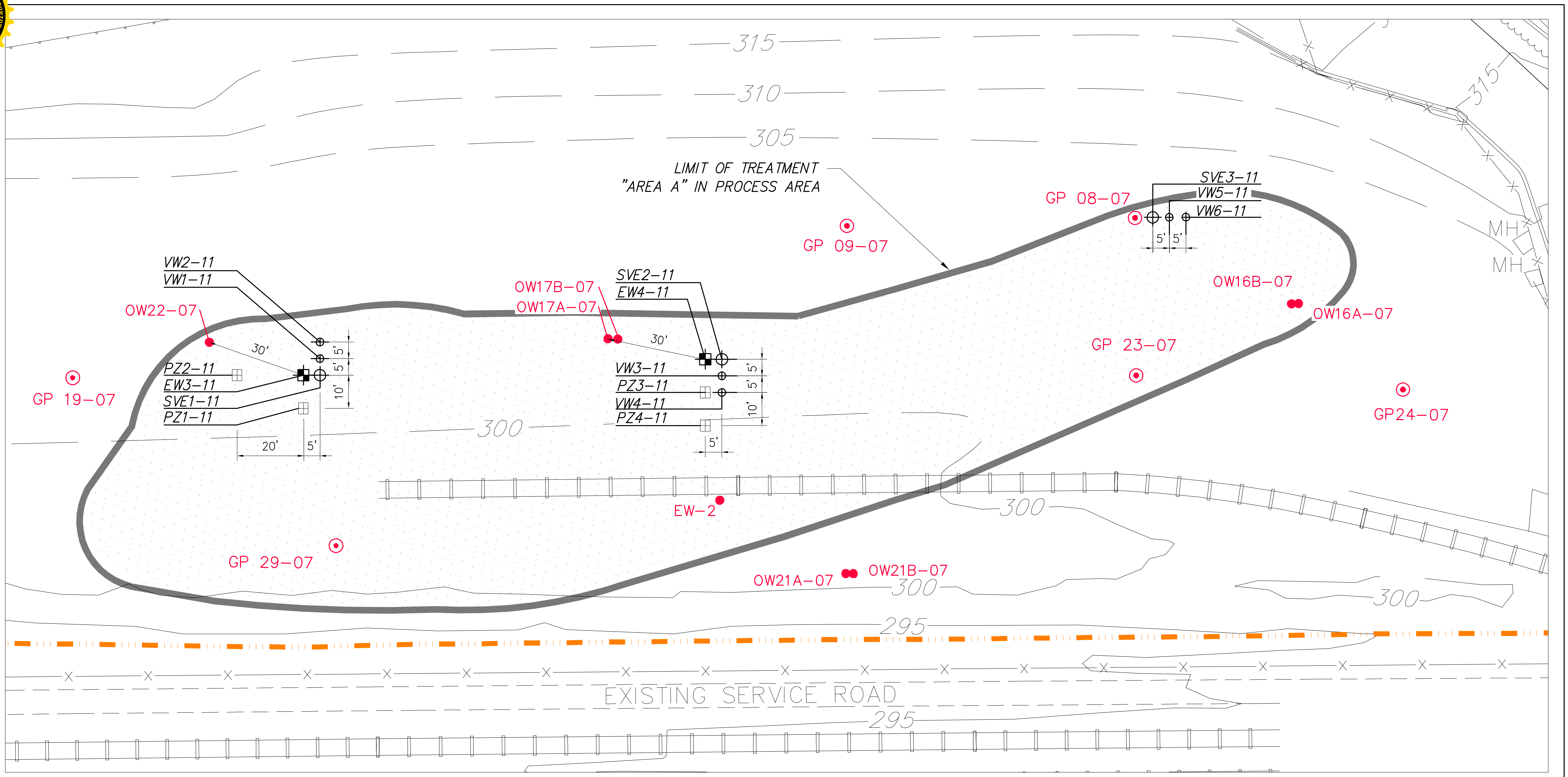

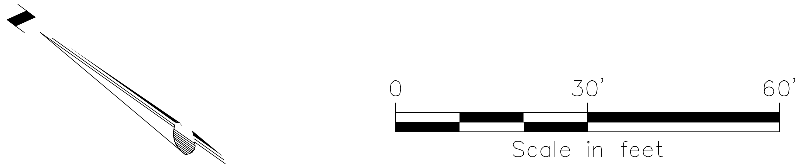

LEGEND

- RAILROAD
- FENCE
- CULVERT
- GROUNDWATER COLLECTION TRENCH
- 300 CONTOUR WITH ELEVATION
- OW22A-07 ● EXISTING OBSERVATION WELL LOCATION
- GP 18-07 ⊙ EXISTING GEOPROBE LOCATION
- SVEXX-11 ⊕ PROPOSED SVE WELL LOCATION
- VWXX-11 ⊕ PROPOSED VACUUM WELL CLUSTER/TRIPLET LOCATION (SHALLOW, INTERMEDIATE, & DEEP)
- PZXX-11 ⊞ PROPOSED PIEZOMETER LOCATION
- EWXX-11 ■ PROPOSED DEWATERING WELL LOCATION

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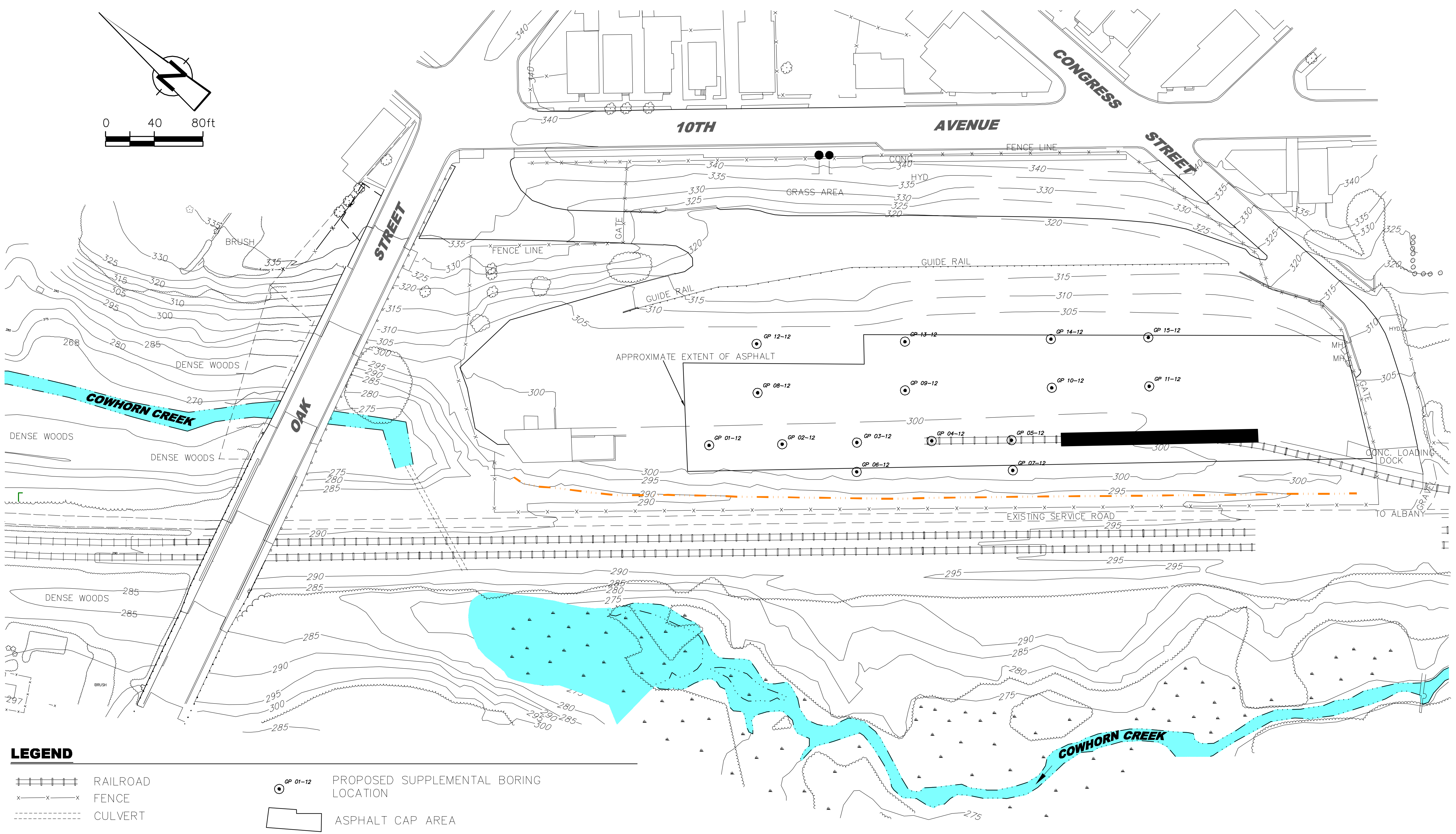
PHASE 2 PRE-DESIGN INVESTIGATION

CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

PROJECT NO.
15091

DATE: 12/2011

FIGURE 1



LEGEND

┼┼┼┼┼┼┼	RAILROAD
×——×——×	FENCE
- - - - - - -	CULVERT
— · · · — · · ·	GROUNDWATER COLLECTION TRENCH
——300——	CONTOUR WITH ELEVATION
⊙ GP 01-12	PROPOSED SUPPLEMENTAL BORING LOCATION
▭	ASPHALT CAP AREA
■	AREA OF RAIL SIDING EXCAVATED DURING REMEDIAL CONSTRUCTION
	APPROXIMATE AREA OF FILL

NOTE: TOTAL ANALYTES DATA IS FROM RAPID FIELD CHARACTERIZATINO METHOD (RFCM) (SEE SEC. 4.2.4 OF TEXT FOR DETAILS). TOTAL ANALYTES IS A SUM OF BENZENE, TOLUENE, CHLOROBENZENE, ETHYLBENZENE, XYLENE, PHENOL AND CRESOL.

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PRE-DESIGN
SUBSURFACE SOIL INVESTIGATION SAMPLE LOCATIONS
SAMPLES (0' – 8')
REMEDIAL INVESTIGATION
CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

PROJECT NO.
15091.2010.1102

DATE: 1/11/12

FIGURE 2

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APPENDIX B

SOIL BORING LOGS

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER EW3

PROJECT NUMBER: 15091.1000.31000 5/7/12

Page 1 of 1

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 3/20/2012 8:30:00 AM

FINISH DATE and TIME: 3/20/2012 9:30:00 AM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	3-20-12	9:30 AM	Estimated	2.5		20

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								ASPHALT and CRUSHED CONCRETE, Some f. Gravel, Some c. Sand, grey/black, angular, loose, dry **(FILL)**			
								f. SAND, Some m. Sand, trace silt, brown, subrounded, medium compact, moist **(SP)**			
1	5	4						**SILT**, Some f. Sand, trace clay, brown, hard, moist **(ML)**		Low plasticity	∇
								f. SAND, Some m. Sand, trace silt, brown, subrounded, medium compact, wet **(SP)**		Groundwater is estimated at 2.5 feet based on moisture content in soil samples.	
								CLAY, Some Silt, trace f. Sand, brown, soft, moist **(CL)**		Medium plasticity	
						5		**Similar Soil (CL)**			
								SILT, Some Clay, trace f. sand, brown/grey and green mottling, hard, wet **(ML)**		Medium plasticity	
2	5	5						**SILT**, Some Clay, trace f. sand, grey/green, hard, saturated **(ML)**		Medium plasticity	
								Clayey SILT, little f. sand, grey/green mottled, hard, moist, **(ML)**			
3	5	5				10		**f. SAND**, little silt, trace m. sand, trace clay, grey, rounded, loose, saturated **(SM)**			
								m. SAND, little f. sand, trace silt, trace clay, brown, subrounded, loose, saturated **(SP)**			
4	5	5				15		**f. SAND**, little m. sand, trace silt, brown, subrounded, loose, saturated **(SP)**		Slight hydrocarbon odor	
						20		**m. SAND**, little f. sand, trace silt, trace clay, grey, subrounded, medium compact, wet **(SP)**			
								End of Boring at 20 ft			

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER EW4

Page 1 of 1

PROJECT NUMBER: 15091.1000.31000 5/7/12

LOCATION: Schenectady, New York
CLIENT: SI Group
CONTRACTOR: Aztech
DRILLER: Ray INSPECTOR: B. Blaydes
START DATE and TIME: 3/20/2012 9:45:00 AM
FINISH DATE and TIME: 3/20/2012 10:20:00 AM
SURFACE ELEV:
CHECKED BY: S. Fowler

DRILL FLUID: None
DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	3-20-12	10:20 AM	Estimated	7		20

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
1	5	2.5				2 4		**ASPHALT and CRUSHED CONCRETE**, Some f. Gravel, Some c. Sand, grey/black, angular, loose, dry **(FILL)** **SILT**, Some Clay, trace f. sand, trace cinders, orange/ with grey/green mottling, hard, moist **(ML)**		Wet at the top of the soil Low plasticity	
2	5	5				6 8 10		**m. SAND**, little f. sand, trace silt, grey, subrounded, loose, wet **(SP)** **f. GRAVEL**, Some c. Sand, trace silt, grey, angular, medium compact, moist **(GP)** **Clayey SILT**, trace f. sand, brown/grey mottled, hard, moist **(ML)** **SILT**, Some Clay, trace f. sand, grey/brown mottled, soft, wet **(ML)** becomes saturated **(ML)**		Hydrocarbon odor, PID = 16.3ppm Strong hydrocarbon odor, PID = 64.1 Low plasticity Groundwater is estimated at 7.0 feet based on moisture content in soil samples. Medium plasticity	▽
3	5	5				12 14		**f. SAND**, trace m. sand, trace silt, grey, subrounded, loose, saturated **(SP)** **m. SAND**, little f. sand, trace silt, brown, subangular, medium compact, saturated **(SP)** **f. SAND**, trace silt, trace clay, lt brown, subrounded, loose, saturated **(SP)**		Slight hydrocarbon odor, PID = 18.7	
4	5	5				16 18		**f. SAND**, trace m. sand, trace silt, trace clay, grey, subrounded, medium compact, saturated **(SP)** **Similar Soil (SP)**			

End of Boring at 20 ft

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER EW5

PROJECT NUMBER: 15091.1000.31000 5/7/12

LOCATION: Schenectady, New York
CLIENT: SI Group
CONTRACTOR: Aztech
DRILLER: Ray
INSPECTOR: B. Blaydes
START DATE and TIME: 3/23/2012 12:30:00 PM
FINISH DATE and TIME: 3/23/2012 1:10:00 PM
SURFACE ELEV:
CHECKED BY: S. Fowler

DRILL FLUID: None
DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS

DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
3-23-12	1:10 PM	Estimated	14		20

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								Augered down to 14 feet, no sampling			
						2					
						4					
						6					
						8					
						10					
						12					
						14		**f. SAND**, little m. sand, trace silt, brown, subrounded, saturated **(SP)**		Groundwater is estimated at 14.0 feet based on moisture content in soil samples.	∇
1	2	1.5	2-4-5-6	9				**SILT**, trace f. sand, trace clay, grey, hard, moist **(ML)**			
						16		**f. SAND**, little m. sand, trace silt, grey, subrounded, loose, saturted **(SP)**			
2	2	2	6-4-4-6	8							
						18		**SILT**, trace f. sand, trace clay, grey, hard, moist **(ML)**		Low plasticity	
3	2	1.2	1-4-5-4	9				**f. SAND**, little silt, trace clay, grey, subrounded, loose, saturated **(SM)**			

End of Boring at 20 ft

PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER PZ1

Page 1 of 1

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 3/21/2012 8:15:00 AM

FINISH DATE and TIME: 3/21/2012 9:30:00 AM

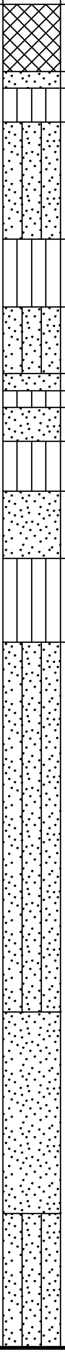
SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	3-21-12	9:30 AM	Estimated	2		20



SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
1	5	4					**ASPHALT and CRUSHED CONCRETE**, Some c. Sand, Some f. Gravel, little m. sand, little silt, trace clay, grey, angular, loose, moist **(FILL)**			
							m. SAND, little f. sand, trace silt, brown, subrounded, loose, moist **(SP)**		Low plasticity	
						2	**SILT**, Some f. Sand, trace m. sand, trace clay, brown, hard, dry **(ML)**		Groundwater is estimated at 2.0 feet based on moisture content in soil samples.	∇
							m. SAND, little f. sand, little silt, brown, subrounded, medium compact, wet **(SM)**			
						4	**SILT**, Some f. Sand, trace m. sand, trace clay, brown, hard, dry **(ML)**			
2	5	4					**m. SAND**, little f. sand, little silt, brown, subrounded, medium compact, wet **(SM)**			
						6	**c. SAND**, trace f. gravel, grey, angular, medium compact, dry **(SP)**		Low plasticity	
							SILT, trace f. sand, trace clay, brown, hard, moist **(ML)**		Hydrocarbon Odor, PID = 18.2ppm Low plasticity	
							f. SAND, trace m. sand, trace silt, brown, subangular, loose, wet **(SP)**			
						8	**SILT**, trace f. sand, trace clay, grey, hard, moist **(ML)**		Low plasticity	
							m. SAND, little f. sand, trace silt, grey, subrounded, loose, saturated **(SP)**			
							SILT, trace f. sand, trace clay, grey, hard, moist **(ML)**			
3	5	5				10	**f. SAND**, little silt, brown, subrounded, loose, saturated **(SM)**			
						12	grades to Some Silt **(SM)**			
						14				
4	5	5				16	**m. SAND**, Some f. Sand, trace silt, grey, subrounded, medium compact, saturated **(SP)**			
						18	**f. SAND**, little silt, trace clay, grey, subrounded, loose, saturated **(SM)**			

End of Boring at 20 ft

PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER PZ2

Page 1 of 1

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 3/21/2012 9:30:00 AM

FINISH DATE and TIME: 3/21/2012 10:15:00 AM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	3-21-12	10:15 AM	Estimated	3		20

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
1	5	3						**ASPHALT and CRUSHED CONCRETE**, Some c. Sand, little f. gravel, trace m. sand, trace silt, grey, angular, dry **(FILL)**			
								m. SAND, trace f. sand, brown, subangular, medium compact, moist **(SP)**			
						2		**f. SAND**, Some Silt, trace clay, dark brown, subrounded, compact, moist **(SM)**			
								SILT, trace f. sand, trace clay, lt brown, hard, moist **(ML)**		Low plasticity Groundwater is estimated at 3.0 feet based on moisture content in soil samples. PID = 2.5ppm	▽
2	5	4				4		**m. SAND**, little c. sand, trace f. sand, brown, subangular, medium compact, wet **(SP)**			
						6		**SILT**, trace f. sand, trace clay, brown, hard, moist **(ML)**		Low plasticity	
								f. SAND, little silt, trace clay, brown, subrounded, medium compact, saturated **(SM)**		Low plasticity	
								SILT, trace f. sand, trace clay, grey/ with black and green mottling, hard, moist **(ML)**			
						8		**m. SAND**, little f. sand, trace silt, grey, subangular, loose, saturated **(SP)**			
								SILT, little f. sand, trace clay. grey, hard, moist **(ML)**			
3	5	5				10		**f. SAND**, trace silt, grey, subrounded, loose, saturated **(SP)** grades to no silt **(SP)**			
						12 14		**f. SAND**, little silt, grey, subrounded, medium compact, saturated **(SM)**			
4	5	5				16 18		**f. SAND**, trace silt, grey, subrounded, loose, saturated **(SP)**		PID = 4.7ppm	

End of Boring at 20 ft

PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER PZ3

Page 1 of 1

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 3/21/2012 1:25:00 PM

FINISH DATE and TIME: 3/21/2012 2:15:00 PM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	3-21-12	2:15 PM	Estimated	5		20

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								ASPHALT and CRUSHED CONCRETE, Some f. Gravel, Some c. Sand, grey, angular, loose, dry **(FILL)**			
						2		**SILT**, little f. sand, trace clay, orange, hard, moist **(ML)**		Low plasticity	
1	5	2.5									
						4					
								f. GRAVEL, little silt, trace f. sand, trace clay, brown, angular, loose, moist **(GM)**		Groundwater is estimated at 5.0 feet based on moisture content in soil samples.	▽
						6		**SILT**, little f. sand, trace clay, brown, hard, wet **(ML)**		Medium plasticity	
2	5	4.5								Hydrocarbon odor, PID = 32.5ppm	
						8					
								m. SAND, little f. sand, trace silt, black, subangular, medium compact, wet **(SP)**			
						10		**Similar Soil (SP)**		Hydrocarbon odor, PID = 41.8ppm	
								f. SAND, trace silt, trace clay, grey, subrounded, loose, saturated **(SP)**			
						12					
3	5	5									
						14		**m. SAND**, Some f. Sand, trace silt, brown, subrounded, loose, saturated **(SP)**			
								f. SAND, trace m. sand, trace silt, grey, subrounded, compact, saturated **(SP)**			
						16					
4	5	4									
						18					
										Discrete sample collected 3/21	

End of Boring at 20 ft

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER PZ4

PROJECT NUMBER: 15091.1000.31000 5/7/12

Page 1 of 1

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 3/21/2012 12:45:00 PM

FINISH DATE and TIME: 3/21/2012 1:20:00 PM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	3-21-12	1:20 PM	Estimated	5		20

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								ASPHALT and CRUSHED CONCRETE, Some f. Gravel, Some c. Sand, grey, angular, loose, dry **(FILL)**			
						2		**SILT**, little f. sand, trace clay, orange, hard, moist **(ML)**		Low plasticity	
1	5	2.5									
						4					
								f. GRAVEL, little silt, trace f. sand, trace clay, brown, angular, loose, moist **(GM)**		Groundwater is estimated at 5.0 feet based on moisture content in soil samples.	▽
						6		**SILT**, little f. sand, trace clay, brown, hard, wet **(ML)**		Medium plasticity	
2	5	5									
						8				Hydrocarbon Odor, PID = 20.6ppm	
						10		**m. SAND**, little f. sand, trace silt, black, subangular, medium compact, wet **(SP)** **f. SAND**, trace silt, trace clay, grey, loose, saturated **(SP)**		Hydrocarbon Odor, PID = 13.1ppm	
						12		**m. SAND**, little f. sand, trace silt, grey, subrounded, loose, saturated **(SP)**			
3	5	5									
								f. SAND, little silt, trace clay, brown, subrounded, loose, saturated **(SM)**			
						14					
								f. SAND, little m. sand, trace silt, grey, subrounded, compact, saturated **(SP)**			
						16					
4	5	5									
						18					
										Discrete sample collected 3/21	

End of Boring at 20 ft

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PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER SVE1

Page 1 of 1

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 3/20/2012 2:45:00 AM

FINISH DATE and TIME: 3/20/2012 3:10:00 AM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
WATER LEVEL OBSERVATIONS	3-20-12	3:10 AM	Estimated	5		15

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								CRUSHED CONCRETE and ASPHALT, Some c. Sand, little f. gravel, little f. sand, little silt, trace clay, grey, angular, loose, dry **(FILL)**		PID Readings measured at 1' intervals = 0.0 PPM unless otherwise noted	
1	5	3				2 4		**m. SAND**, Some f. Sand, trace silt, brown, subrounded, medium compact, moist **(SP)**			
								c. SAND, trace f. gravel, trace silt, grey, angular, compact, moist **(SP)**		Groundwater is estimated at 5.0 feet based on moisture content in soil samples.	▽
2	5	4				6 8		**SILT**, Some f. Sand, trace clay, grey/ black stain, hard, wet **(ML)**		Low plasticity PID = 3.5 ppm PID = 4.9 ppm Hydrocarbon Odor PID = 6.2	
								m. SAND, little f. sand, trace silt, brown, subangular, medium compact, saturated **(SP)**			
						10		**f. SAND**, little silt, trace clay, brown, subrounded, medium compact, saturated **(SM)**			
						12		**m. SAND**, Some f. Sand, trace silt, brown, subrounded, medium compact, saturated **(SP)**			
3	5	4				14		**f. SAND**, little silt, trace clay, brown, subrounded, loose, saturated **(SM)**			
						16 18		End of Boring at 15 ft			

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PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER SVE2

Page 1 of 1

LOCATION: Schenectady, New York
CLIENT: SI Group
CONTRACTOR: Aztech
DRILLER: Ray
INSPECTOR: B. Blaydes
START DATE and TIME: 3/20/2012 10:25:00 AM
FINISH DATE and TIME: 3/20/2012 11:00:00 AM
SURFACE ELEV:
CHECKED BY: S. Fowler
DRILL FLUID: None
DRILLING METHOD: Geoprobe

	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
WATER LEVEL OBSERVATIONS	3-20-12	11:00 AM	Estimated	5		15

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								CRUSHED CONCRETE and ASPHALT, Some f. Gravel, Some c. Sand, grey/black, angular, loose, dry **(FILL)**			
1	5	2.5				2		**SILT**, Some Clay, trace f. sand, trace cinders, orange with grey/green mottling, hard, moist **(FILL)**		Low plasticity Hydrocarbon odor in silt sample startig at 2.0 feet. PID = 23.6 ppm	
						4					
						6		**SILT**, Some c. Sand, trace f. sand, trace clay, brown/black, hard, moist **(ML)** **Clayey SILT**, Some f. Sand, brown/black stain, very stiff, wet **(ML)**		Groundwater is estimated at 5.0 feet based on moisture content in soil samples. Low plasticity medium plasticity, hydrocarbon odor in silt sample from 6-9.25 feet. PID = 50.1 ppm	▽
2	5	4.5				8					
						10		**m. SAND**, trace f. sand, trace silt, grey, subrounded, loose, wet **(SP)** **Similar Soil (SP)** **f. SAND**, trace silt, trace clay, subrounded, grey, loose, saturated **(SP)**			
3	5	5				12					
						14		**m. SAND**, little f. sand, trace silt, brown, subangular, loose, saturated **(SP)**		PID = 45.8 ppm in borehole while extracting augers from ground	
								End of Boring at 15 ft		Sheen present on cuttings and in water liberated from the cuttings.	
						16					
						18					

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER SVE3

Page 1 of 1

PROJECT NUMBER: 15091.1000.31000 5/7/12

LOCATION: Schenectady, New York	DRILL FLUID: None
CLIENT: SI Group	DRILLING METHOD: Geoprobe
CONTRACTOR: Aztech	
DRILLER: Ray	INSPECTOR: B. Blaydes
START DATE and TIME: 3/22/2012 10:00:00 AM	
FINISH DATE and TIME: 3/22/2012 10:30:00 AM	
SURFACE ELEV:	CHECKED BY: S. Fowler

WATER LEVEL OBSERVATIONS

DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
3-22-12	10:30 AM	Estimated	10		15

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
1	5	2						**CRUSHED CONCRETE**, Some c. Sand, little f. gravel, grey, angular, loose, dry **(FILL)**			
								f. SAND, little c. sand, little silt, trace f. gravel, brown, subrounded, loose, moist **(FILL)**			
						2		**CRUSHED CONCRETE**, Some c. Sand, little f. gravel, angular, loose, dry **(FILL)**			
2	5	1				4 6 8		**SILT**, Some Clay, grey, hard, moist **(ML)**		Low plasticity PID = 20.4 ppm PID = 50.2 ppm PID = 60.8 ppm	
						10		**Similar Soil (ML)**		Groundwater is estimated at 10.0 feet based on moisture content in soil samples.	▽
3	5	5				12		**m. SAND**, little f. sand, trace silt, grey, subrounded, medium compact, saturated **(SP)**		PID = 1.1 ppm	
						14		**f. SAND**, little silt, trace m. sand, trace clay, brown, medium compact, saturated **(SM)**		PID readings taken from headspace in sample bags.	
						16 18		End of Boring at 15 ft			

PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER VW1

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 3/20/2012 2:30:00 PM

FINISH DATE and TIME: 3/20/2012 2:45:00 PM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
WATER LEVEL OBSERVATIONS	3-20-12	2:45 PM	Estimated	6		15

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								CRUSHED CONCRETE and ASPHALT, Some c. Sand, Some f. Gravel, little f. sand, trace silt, grey, angular, medium compact, dry **(FILL)**			
1	5	3				2 4		**m. SAND**, Some f. Sand, trace silt, brown, subrounded, medium compact, moist **(SP)**			
								Similar Soil (SP)			
2	5	4				6 8		**SILT**, Some f. Sand, trace clay, grey, hard, wet **(ML)**		Groundwater is estimated at 6.0 feet based on moisture content in soil samples.	∇
								m. SAND, little f. sand, trace silt, grey, subrounded, medium compact, moist **(SP)**			
						10 12		**f. SAND**, little silt, trace clay, brown, subrounded, loose, saturated **(SM)**			
3	5	5						**m. SAND**, little f. sand, trace silt, brown, subrounded, medium compact, saturated **(SP)**			
						14		**f. SAND**, little silt, trace clay, brown, subrounded, medium compact, saturated **(SM)**			
						16 18		End of Boring at 15 ft			

SI Group, Congress Street

SUBSURFACE LOG

HOLE NUMBER VW2

Page 1 of 1

PROJECT NUMBER: 15091.1000.31000 5/7/12

LOCATION: Schenectady, New York	DRILL FLUID: None
CLIENT: SI Group	DRILLING METHOD: Geoprobe
CONTRACTOR: Aztech	
DRILLER: Ray	INSPECTOR: B. Blaydes
START DATE and TIME: 3/20/2012 2:15:00 AM	
FINISH DATE and TIME: 3/20/2012 2:30:00 AM	
SURFACE ELEV:	CHECKED BY: S. Fowler

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	3-20-12	2:30 AM	Estimated	6		15

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
1	5	3.5				2 4		**<u>ASPHALT and CRUSHED CONCRETE</u>**, Some c. Sand, Some f. Gravel, little f. sand, trace silt, grey, angular, medium compact, dry **(FILL)** **<u>m. SAND</u>**, Some f. Sand, trace silt, brown, subrounded, medium compact, moist **(SP)**			
2	5	5				6 8		**<u>m. SAND</u>**, Some f. Sand, trace silt, brown, subrounded, medium compact, moist **(SP)** **<u>f. SAND</u>**, little silt, trace clay, grey, subrounded, medium compact, wet **(SM)** **<u>SILT</u>**, Some f. Sand, trace clay, grey, hard, wet **(ML)** **<u>m. SAND</u>**, trace f. sand, trace silt, grey, subrounded, medium compact, wet **(SP)**		Groundwater is estimated at 6.0 feet based on moisture content in soil samples. medium plasticity Hydrocarbon odor PID = 52.1ppm	▽
3	5	5				10 12 14		**<u>Similar Soil</u>** **(SP)** **<u>f. SAND</u>**, little silt, trace clay, grey, subrounded, medium compact, saturated **(SM)** **<u>f. SAND</u>**, Some Silt, trace clay, brown, subrounded, medium compact, saturated **(SM)**			
						16 18		End of Boring at 15 ft			

PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER VW3

Page 1 of 1

LOCATION: Schenectady, New York	
CLIENT: SI Group	
CONTRACTOR: Aztech	
DRILLER: Ray	INSPECTOR: B. Blaydes
START DATE and TIME: 3/20/2012 11:00:00 AM	
FINISH DATE and TIME: 3/20/2012 11:15:00 AM	
SURFACE ELEV:	CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	3-20-12	11:15 AM	Estimated	6		15

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								ASPHALT and CRUSHED CONCRETE, Some f. Gravel, Some c. Sand, grey/black, angular, loose, dry **(FILL)**			
1	5	2.5				2		**SILT**, Some Clay, trace f. sand, trace cinders, orange/black stain, hard, moist **(FILL)**		Low plasticity	
						4		**Similar Soil** **(FILL)**		Hydrocarbon odor, PID = 58.4ppm	
2	5	4.5				6 8		**SILT**, little f. sand, trace clay, brown/black staining, hard, wet **(ML)**		Groundwater is estimated at 6.0 feet based on moisture content in soil samples. Low plasticity Hydrocarbon Odor, PID = 23.6ppm	▽
						10		**m. SAND**, little f. sand, trace silt, dark grey, subangular, loose, wet **(SP)** **Similar Soil** **(SP)**		Gradation fining down	
3	5	5				12		**f. SAND**, little silt, trace m. sand, trace clay, grey, subrounded, loose, saturated **(SM)**			
						14		**m. SAND**, little silt, trace c. sand, trace clay, brown, subangular, medium compact, saturated **(SM)**			
						16 18		End of Boring at 15 ft			

PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER VW4

Page 1 of 1

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 3/20/2012 11:15:00 AM

FINISH DATE and TIME: 3/20/2012 11:35:00 AM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	3-20-12	11:35 AM	Estimated	6		15

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								ASPHALT and CONCRETE, Some f. Gravel, Some c. Sand, grey, angular, loose, dry **(FILL)**			
1	5	3				2 4		**SILT**, little f. sand, trace clay, orange, hard, moist **(ML)**		Low plasticity	
2	5	4						**SILT**, little c. sand, trace clay, trace f. sand, orange, hard, moist **(ML)**		Low plasticity	
						6 8		**SILT**, little f. sand, trace m. sand, trace clay, mottle grey/brown with black staining, hard, wet **(ML)**		Groundwater is estimated at 6.0 feet based on moisture content in soil samples. Hydrocarbon Odor, PID = 38.6ppm Medium plasticity	▽
3	5	5				10 12		**f. SAND**, trace m. sand, trace silt, grey, subrounded, loose, saturated **(SP)** **m. SAND**, little f. sand, trace silt, brown, subangular, loose, saturated **(SP)**			
						14		**SILT**, little f. sand, trace m. sand, trace clay, brown, hard, moist **(ML)**		Low plasticity	
						16 18		End of Boring at 15 ft			

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER VW5

Page 1 of 1

PROJECT NUMBER: 15091.1000.31000 5/7/12

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray INSPECTOR: B. Blaydes

START DATE and TIME: 3/20/2012 9:15:00 AM

FINISH DATE and TIME: 3/20/2012 9:30:00 AM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
WATER LEVEL OBSERVATIONS	3-20-12	9:30 AM	Estimated	9.5		15

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
					▮		▩	**CRUSHED CONCRETE and ASPHALT**, Some f. Gravel, little c. sand, grey, angular, compact, dry **(FILL)**			
1	5	2.5			▮	2 4	░	**m. SAND**, trace f. sand, trace silt, brown, subrounded, medium compact, moist **(SP)**			
					▮		░	**Similar Soil** **(SP)**		PID readings collected from headspace readings off of soil samples collected in plastic bags. PID = 4.9ppm	
2	5	4			▮	6 8	▥	**SILT**, Some Clay, little f. sand, grey/black staining, hard, moist **(ML)**		PID = 14.8ppm	
					▮		▥			PID = 14.7ppm Groundwater is estimated at 9.5 feet based on moisture content in soil samples.	▽
3	5	5			▮	10 12	▥	**SILT**, Some Clay, trace f. sand, brown, soft, saturated **(ML)**		medium plasticity PID = 11.0ppm PID = 121.0ppm	
					▮	14	▥	**f. SAND**, Some Silt, trace clay, brown, subrounded, medium compact, wet **(SM)**		PID = 121.0ppm PID = 13.5ppm	
						16 18		End of Boring at 15 ft			

CHA

PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER VW6

Page 1 of 1

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 3/20/2012 8:45:00 AM

FINISH DATE and TIME: 3/20/2012 9:15:00 AM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
WATER LEVEL OBSERVATIONS	3-20-12	9:15 AM	Estimated	5		15

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								CRUSHED CONCRETE and ASPHALT, Some f. Gravel, little c. sand, grey, angular, loose, dry **(FILL)**			
								m. SAND, little c. sand, trace f. gravel, trace silt, brown, subrounded, moist **(SP)**		Low plasticity	
1	5	2.5				2		**SILT**, Some f. Sand, trace c. sand, trace clay, grey, hard, moist **(ML)**			
						4					
2	5	5				6 8		**Clayey SILT**, little f. sand, grey/black staining, soft, wet **(ML)**		PID readings collected from headspace readings off of soil samples collected in plastic bags. Hydrocarbon Odor, PID = 40.3ppm Groundwater is estimated at 5.0 feet based on moisture content in soil samples. Medium plasticity Hydrocarbon Odor, PID = 5.6ppm	▽
						10		**Similar Soil (ML)**		Hydrocarbon Odor, PID = 4.3ppm	
								m. SAND, little f. sand, trace silt, grey, subrounded, medium compact, saturated **(SP)**		Hydrocarbon Odor, PID = 31.2ppm Medium plasticity	
						12		**f. SAND**, little silt, trace m. sand, brown, subrounded, loose, saturated **(SM)**			
3	5	5						**Clayey SILT**, trace f. sand, brown, soft, saturated **(ML)**			
						14		**f. SAND**, little silt, trace clay, brown, medium compact, saturated **(SM)**			
						16 18		End of Boring at 15 ft			

APPENDIX C

WELL INSTALLATION DIAGRAMS

WELL CONSTRUCTION LOG

BORING NO. EW3

WELL NO. EW3-12

PROJECT & LOCATION: SI Group, Congress Street, Schenectady, NY

CLIENT: SI Group

CONTRACTOR: Aztech Technologies

PROJECT NO.: 15091

SHEET NO.: 1 OF 1

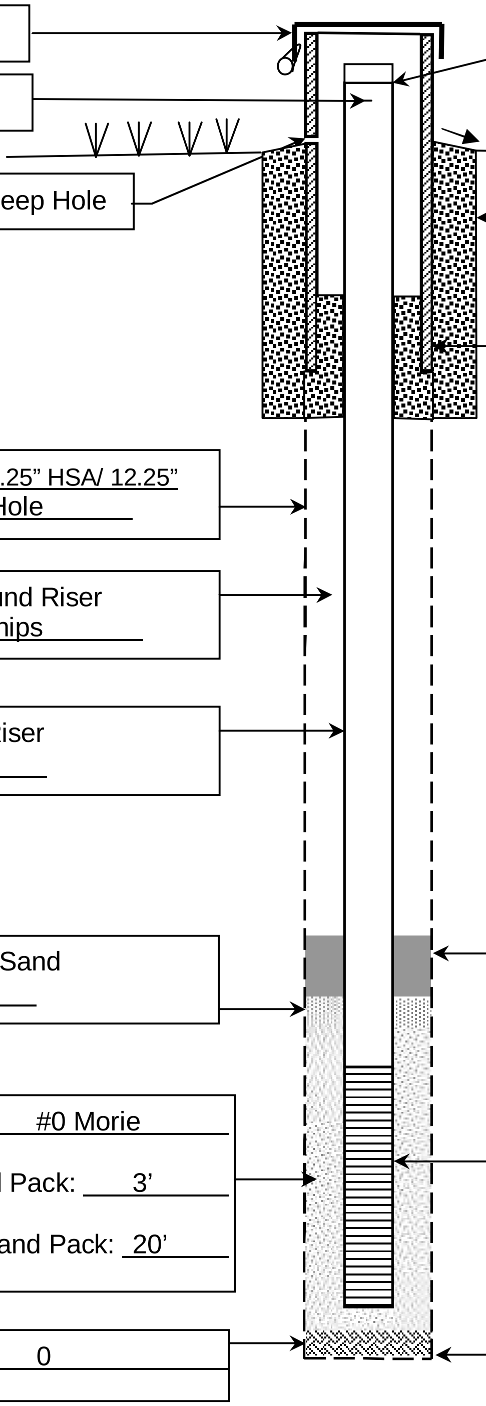
ELEVATION:

START DATE: 3/20/12 TIME: 10:00am

FINISH DATE: 3/20/12 TIME: 12:00pm

DRILLER: Tony/Chris

INSPECTOR: Blaydes



Depth Above/Below Ground of Riser Pipe: ______

Type of Cap: ______

Locking Steel Cap

Riser Vent Hole

Ground Seal: Cold Patch on 6" sand near surface

Protective Casing Weep Hole

Type of Surface Seal: Bentonite

Thickness of Surface Seal: 2'

Type of Protective Casing: None @ this time

Inside Dia. Of Casing: ______

Depth Above Ground of Casing: ______

Depth Below Ground of Casing: ______

Diameter Borehole: 8.25" HSA/ 12.25" Hole

Type of Backfill Around Riser Pipe: Bentonite Chips

Inside Diameter of Riser Pipe: 6"

Type of Bentonite Seal: Chip/Hydrated

Depth to Top of Bentonite Seal: 3'

Depth to Top of Fine Sand Choke: ______

Type of Screen: PVC V Wire Wrap

Screen Diameter: 6"

Screen Slot Size: V Wire Wrap

Depth to Top of Screen: 5'

Depth to Bottom of Screen: 20'

Type of Sand Pack: #0 Morie

Depth to Top of Sand Pack: 3'

Depth to Bottom of Sand Pack: 20'

Backfill (if any): 0

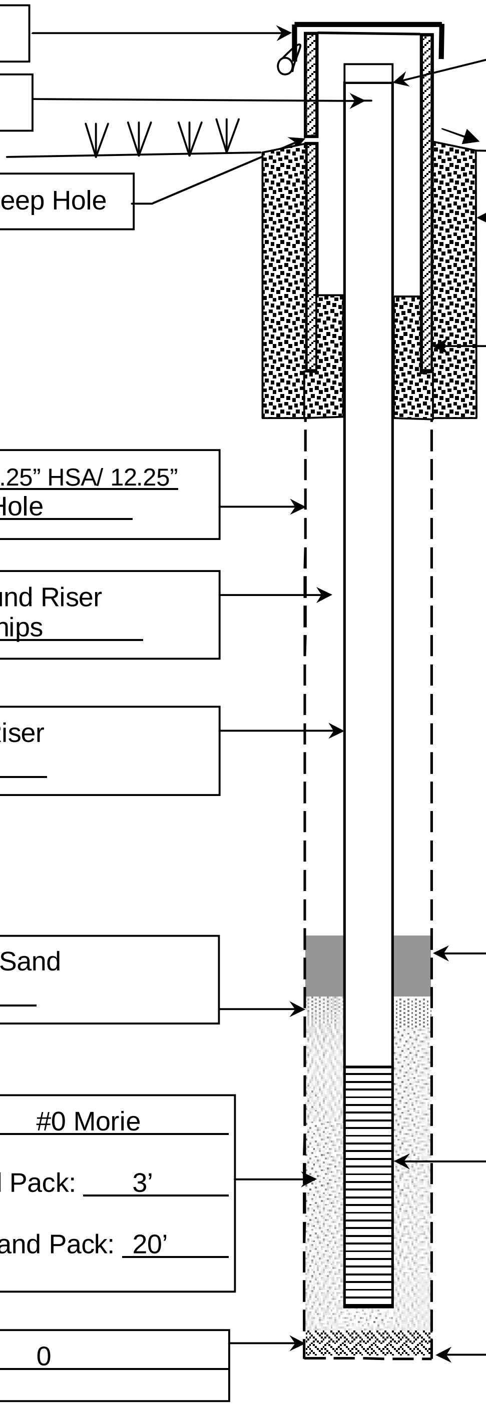
Depth to Bottom of Borehole: 20'

WELL CONSTRUCTION LOG

BORING NO. EW4
WELL NO. EW4-12

PROJECT & LOCATION: SI Group, Congress Street, Schenectady, NY
CLIENT: SI Group
CONTRACTOR: Aztech Technologies

PROJECT NO.: 15091
SHEET NO.: 1 OF 1
ELEVATION:
START DATE: 3/20/12 TIME: 1:10pm
FINISH DATE: 3/20/12 TIME: 3:00pm
DRILLER: Tony/Chris
INSPECTOR: Blaydes



Depth Above/Below Ground of Riser Pipe: ____

Type of Cap: Locking Expansion Plug

Locking Steel Cap

Riser Vent Hole

Ground Seal: Cold Patch on 6” sand near surface

Protective Casing Weep Hole

Type of Surface Seal: Bentonite

Thickness of Surface Seal: 2’

Type of Protective Casing: None @ this time

Inside Dia. Of Casing: ____

Depth Above Ground of Casing: ____

Depth Below Ground of Casing: ____

Diameter Borehole: 8.25” HSA/ 12.25” Hole

Type of Backfill Around Riser Pipe: Bentonite Chips

Inside Diameter of Riser Pipe: 6”

Type of Bentonite Seal: Chip/Hydrated

Depth to Top of Bentonite Seal: 3’

Depth to Top of Fine Sand Choke: ____

Type of Screen: PVC Wire Wrap

Screen Diameter: 6”

Screen Slot Size: Vee Wire Wrap

Depth to Top of Screen: 5’

Depth to Bottom of Screen: 20’

Type of Sand Pack: #0 Morie

Depth to Top of Sand Pack: 3’

Depth to Bottom of Sand Pack: 20’

Backfill (if any): 0

Depth to Bottom of Borehole: 20’

CHA

WELL CONSTRUCTION LOG

BORING NO. EW5

WELL NO. EW5-12

PROJECT & LOCATION: SI Group, Congress Street, Schenectady, NY
CLIENT: SI Group
CONTRACTOR: Aztech Technologies

PROJECT NO.: 15091
SHEET NO.: 1 OF 1

ELEVATION:

START DATE: 3/23/12 TIME: 11:00am

FINISH DATE: 3/26/12 TIME: 11:00am

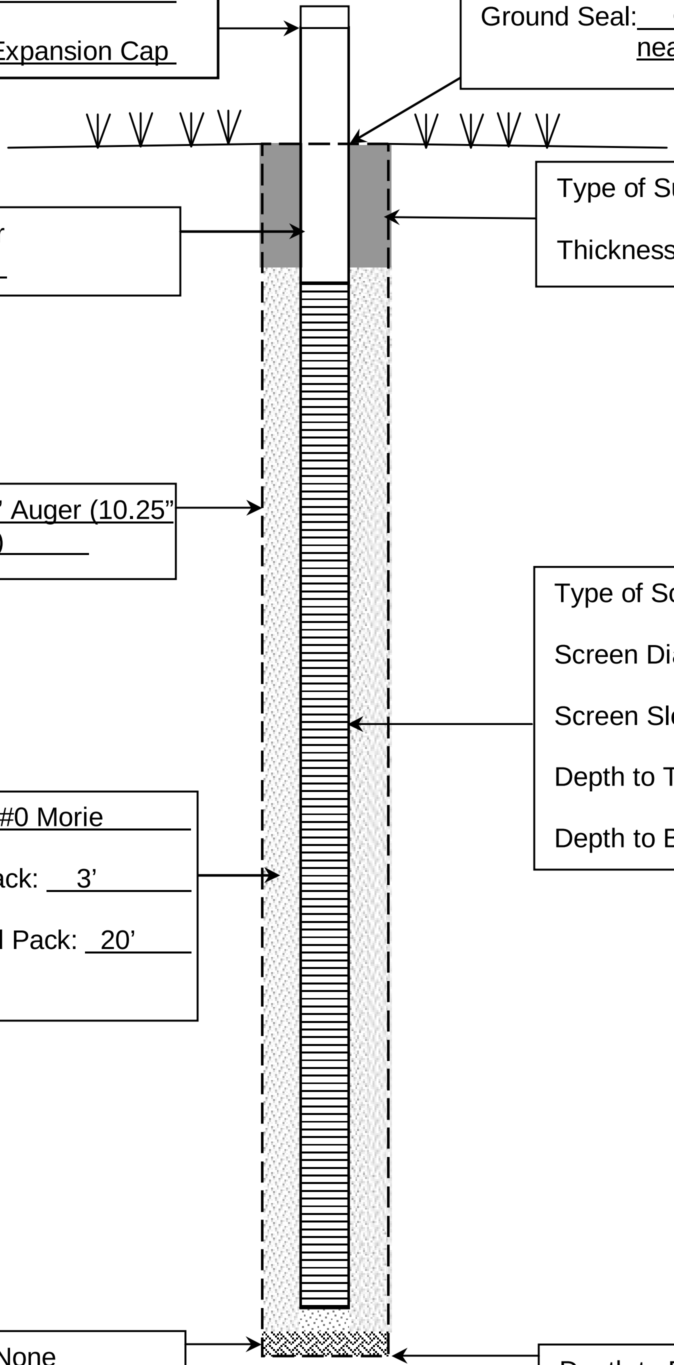
DRILLER: Chris/Tony

INSPECTOR: Blaydes

Depth Above/Below Ground of Riser Pipe: ______________________________

Type of Cap: Locking Expansion Cap

Ground Seal: Cold Patch on 6” sand near surface



Type of Surface Seal: Bentonite

Thickness of Surface Seal: 3’

Inside Diameter of Riser Pipe: 4”

Diameter Borehole: 6,25” Auger (10.25” hole)

Type of Screen: PVC

Screen Diameter: 4”

Screen Slot Size: 0.010” (10 slot)

Depth to Top of Screen: 5’

Depth to Bottom of Screen: 20’

Type of Sand Pack: #0 Morie

Depth to Top of Sand Pack: 3’

Depth to Bottom of Sand Pack: 20’

Backfill (if any): None

Depth to Bottom of Borehole: 20’

WELL CONSTRUCTION LOG

BORING NO. SVE1

WELL NO. SVE1-12

PROJECT & LOCATION: SI Group, Congress Street, Schenectady, NY
CLIENT: SI Group
CONTRACTOR: Aztech Technologies

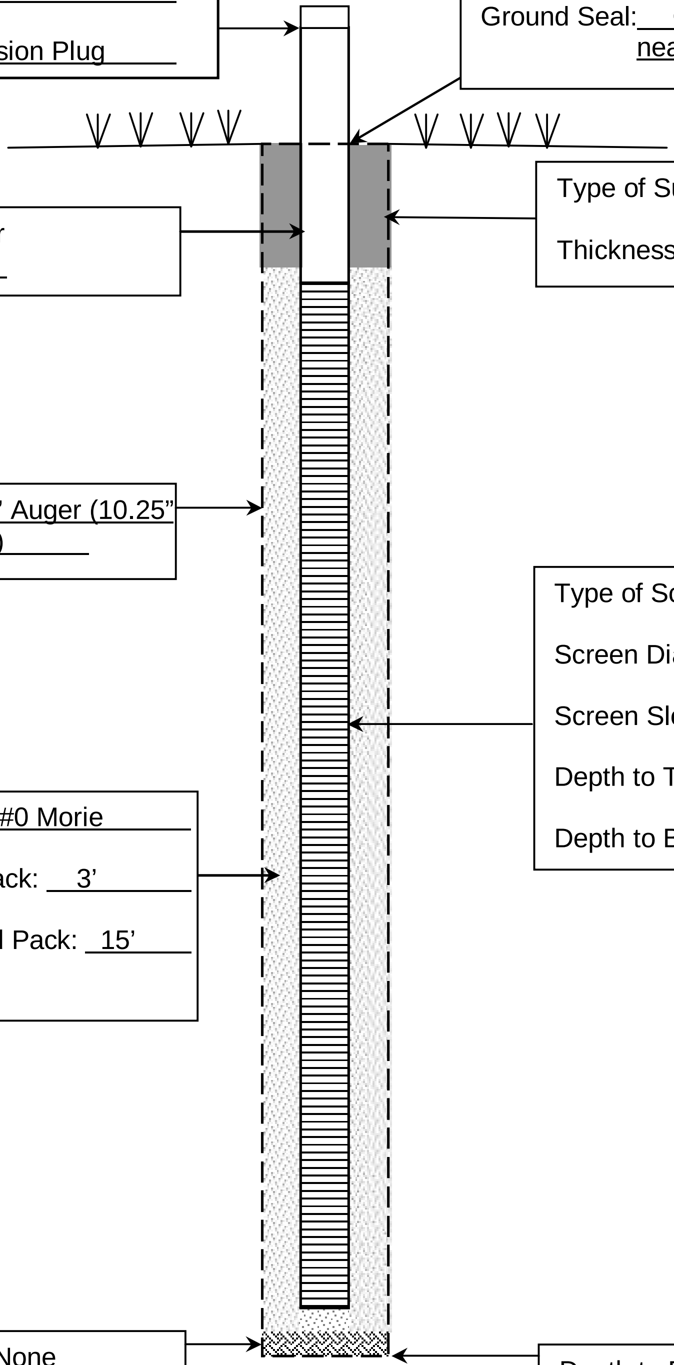
PROJECT NO.: 15091
SHEET NO.: 1 OF 1
ELEVATION:
START DATE: 3/21/12 TIME: 1:30pm
FINISH DATE: 3/21/12 TIME:
DRILLER: Chris/Tony
INSPECTOR: Blaydes

PID Readings From Cuttings:
4.1 Peak – 1.8 Sustained @ 9’ BGS
3.8 Peak – 1.5 Sustained @ 15’ BGS
18.2 Peak – 5.8 Sustained @ Top of Augers 15’ BGS

Depth Above/Below Ground of Riser Pipe: ______

Type of Cap: 4” Expansion Plug

Ground Seal: Cold Patch on 6” sand near surface



Type of Surface Seal: Bentonite

Thickness of Surface Seal: ______

Inside Diameter of Riser Pipe: 4”

Diameter Borehole: 6,25” Auger (10.25” hole)

Type of Screen: PVC

Screen Diameter: 4”

Screen Slot Size: 0.010” (10 slot)

Depth to Top of Screen: 5’

Depth to Bottom of Screen: 15’

Type of Sand Pack: #0 Morie

Depth to Top of Sand Pack: 3’

Depth to Bottom of Sand Pack: 15’

Backfill (if any): None

Depth to Bottom of Borehole: 15’

WELL CONSTRUCTION LOG

BORING NO. SVE2

WELL NO. SVE2-12

PROJECT & LOCATION: SI Group, Congress Street, Schenectady, NY

CLIENT: SI Group

CONTRACTOR: Aztech Technologies

PROJECT NO.: 15091

SHEET NO.: 1 OF 1

ELEVATION:

START DATE: 3/21/12 TIME: 12:00pm

FINISH DATE: 3/21/12 TIME: 2:00pm

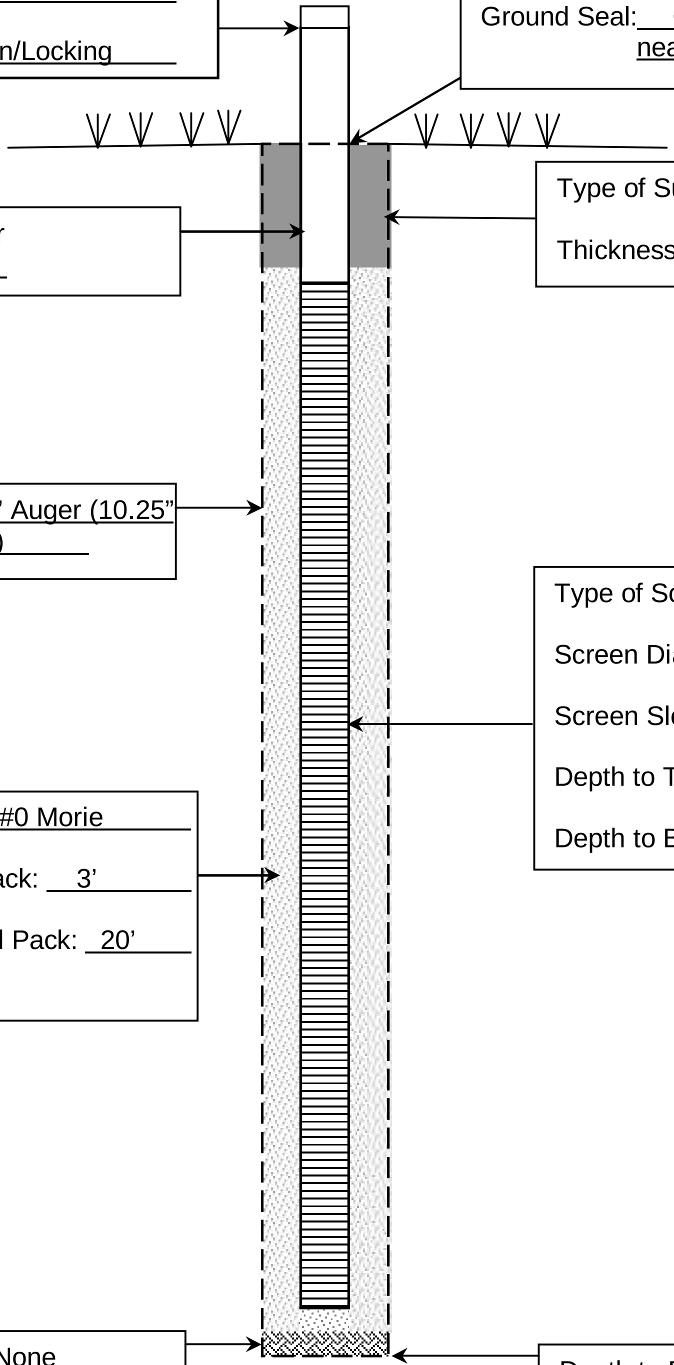
DRILLER: Chris/Tony

INSPECTOR: Blaydes

Depth Above/Below Ground of Riser Pipe: __________

Type of Cap: Expansion/Locking

Ground Seal: Cold Patch on 6” sand near surface



Type of Surface Seal: Bentonite

Thickness of Surface Seal: 2.5’

Inside Diameter of Riser Pipe: 4”

Diameter Borehole: 6,25” Auger (10.25” hole)

Type of Screen: PVC

Screen Diameter: 4”

Screen Slot Size: 0.010” (10 slot)

Depth to Top of Screen: 5’

Depth to Bottom of Screen: 20’

Type of Sand Pack: #0 Morie

Depth to Top of Sand Pack: 3’

Depth to Bottom of Sand Pack: 20’

Backfill (if any): None

Depth to Bottom of Borehole: 20’

CHA

WELL CONSTRUCTION LOG

BORING NO. SVE3

WELL NO. SVE3-12

PROJECT & LOCATION: SI Group, Congress Street, Schenectady, NY

CLIENT: SI Group

CONTRACTOR: Aztech Technologies

PROJECT NO.: 15091

SHEET NO.: 1 OF 1

ELEVATION:

START DATE: 3/22/12 TIME: 11:00am

FINISH DATE: 3/22/12 TIME:

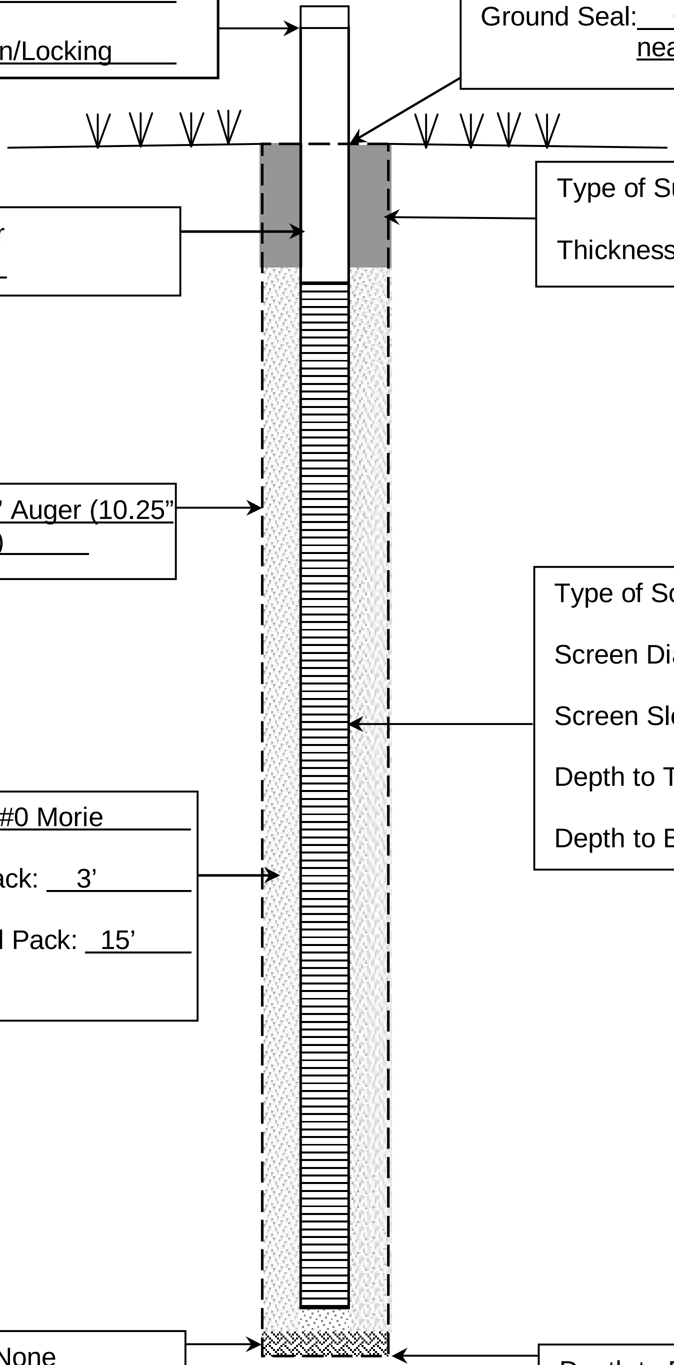
DRILLER: Chris/Tony

INSPECTOR: Blaydes

Depth Above/Below Ground of Riser Pipe: ______

Type of Cap: Expansion/Locking

Ground Seal: Cold Patch on 6” sand near surface



Inside Diameter of Riser Pipe: 4”

Type of Surface Seal: Bentonite

Thickness of Surface Seal: 2.5’

Diameter Borehole: 6,25” Auger (10.25” hole)

Type of Screen: PVC

Screen Diameter: 4”

Screen Slot Size: 0.010” (10 slot)

Depth to Top of Screen: 5’

Depth to Bottom of Screen: 15’

Type of Sand Pack: #0 Morie

Depth to Top of Sand Pack: 3’

Depth to Bottom of Sand Pack: 15’

Backfill (if any): None

Depth to Bottom of Borehole: 15’

V:\OH_Data\Divisions\CEP\Environmental\Forms\Environmental\Well Logs\Well Construction\Temp_Piezometer_Construction_Log.doc

CHA

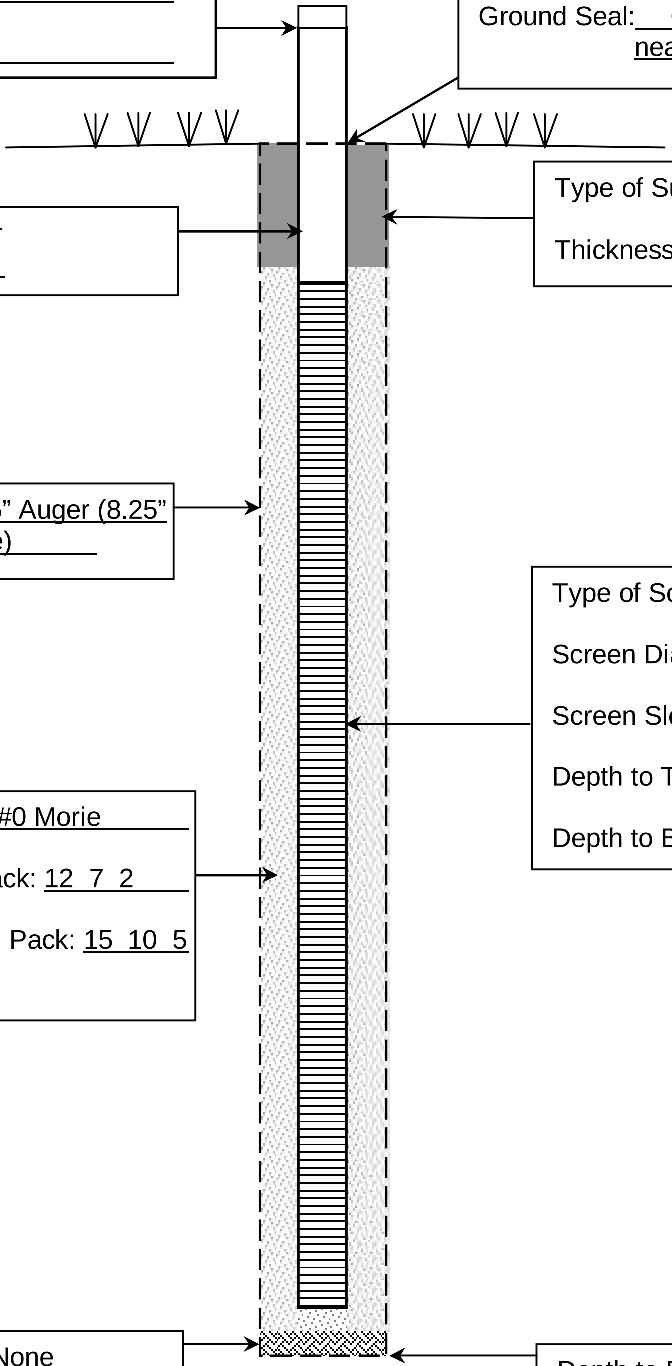
WELL CONSTRUCTION LOG

BORING NO. VW1

WELL NO. VW1-12

PROJECT & LOCATION: SI Group, Congress Street, Schenectady, NY
CLIENT: SI Group
CONTRACTOR: Aztech Technologies

PROJECT NO.: 15091
SHEET NO.: 1 OF 1
ELEVATION:
START DATE: 3/28/12 TIME: 11:50am
FINISH DATE: 3/28/12 TIME: 2:50pm
DRILLER: Chris/Tony
INSPECTOR: Blaydes



Depth Above/Below Ground of Riser Pipe: ____________

Type of Cap: ____________

Ground Seal: Cold Patch on 6" sand near surface

Type of Surface Seal: Bentonite

Thickness of Surface Seal: 2'

Inside Diameter of Riser Pipe: 1"

Diameter Borehole: 4,25" Auger (8.25" hole)

Type of Screen: PVC

Screen Diameter: 1"

Screen Slot Size: 0.010" (10 slot)

Depth to Top of Screen: 13 8 3

Depth to Bottom of Screen: 15 10 5

Type of Sand Pack: #0 Morie

Depth to Top of Sand Pack: 12 7 2

Depth to Bottom of Sand Pack: 15 10 5

Backfill (if any): None

Depth to Bottom of Borehole: 15'

WELL CONSTRUCTION LOG

BORING NO. VW2

WELL NO. VW2-12

PROJECT & LOCATION: SI Group, Congress Street, Schenectady, NY

CLIENT: SI Group

CONTRACTOR: Aztech Technologies

PROJECT NO.: 15091

SHEET NO.: 1 OF 1

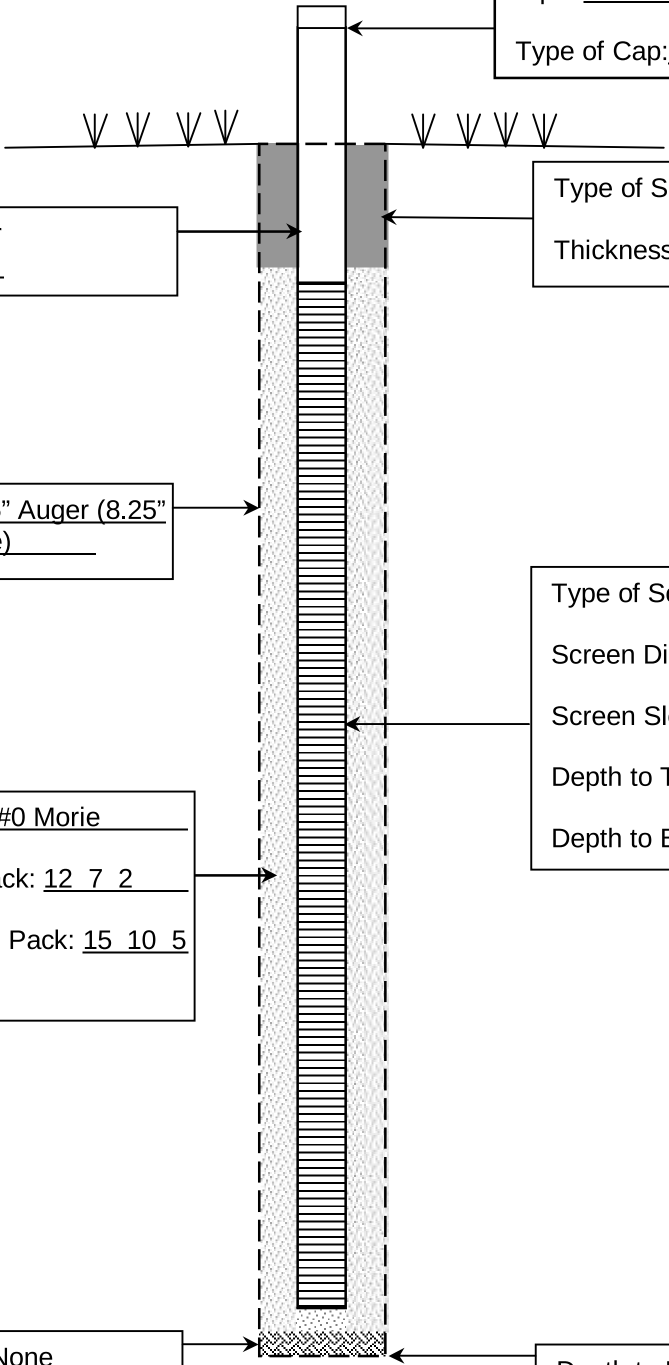
ELEVATION:

START DATE: 3/27/12 TIME: 1:00pm

FINISH DATE: 3/27/12 TIME: 3:00pm

DRILLER: Chris/Tony

INSPECTOR: Blaydes



Depth Above/Below Ground of Riser Pipe: ______

Type of Cap: ______

Type of Surface Seal: Bentonite

Thickness of Surface Seal: 2’

Inside Diameter of Riser Pipe: 1”

Diameter Borehole: 4,25” Auger (8.25” hole)

Type of Screen: PVC

Screen Diameter: 1”

Screen Slot Size: 0.010” (10 slot)

Depth to Top of Screen: 13 8 3

Depth to Bottom of Screen: 15 10 5

Type of Sand Pack: #0 Morie

Depth to Top of Sand Pack: 12 7 2

Depth to Bottom of Sand Pack: 15 10 5

Backfill (if any): None

Depth to Bottom of Borehole: 15’

WELL CONSTRUCTION LOG

BORING NO. VW3

WELL NO. VW3-12

PROJECT & LOCATION: SI Group, Congress Street, Schenectady, NY
CLIENT: SI Group
CONTRACTOR: Aztech Technologies

PROJECT NO.: 15091
SHEET NO.: 1 OF 1
ELEVATION:
START DATE: 3/27/12 TIME: 9:15am
FINISH DATE: 3/27/12 TIME: 10:30am
DRILLER: Chris/Tony
INSPECTOR: Blaydes

Depth Above/Below Ground of Riser Pipe: ____

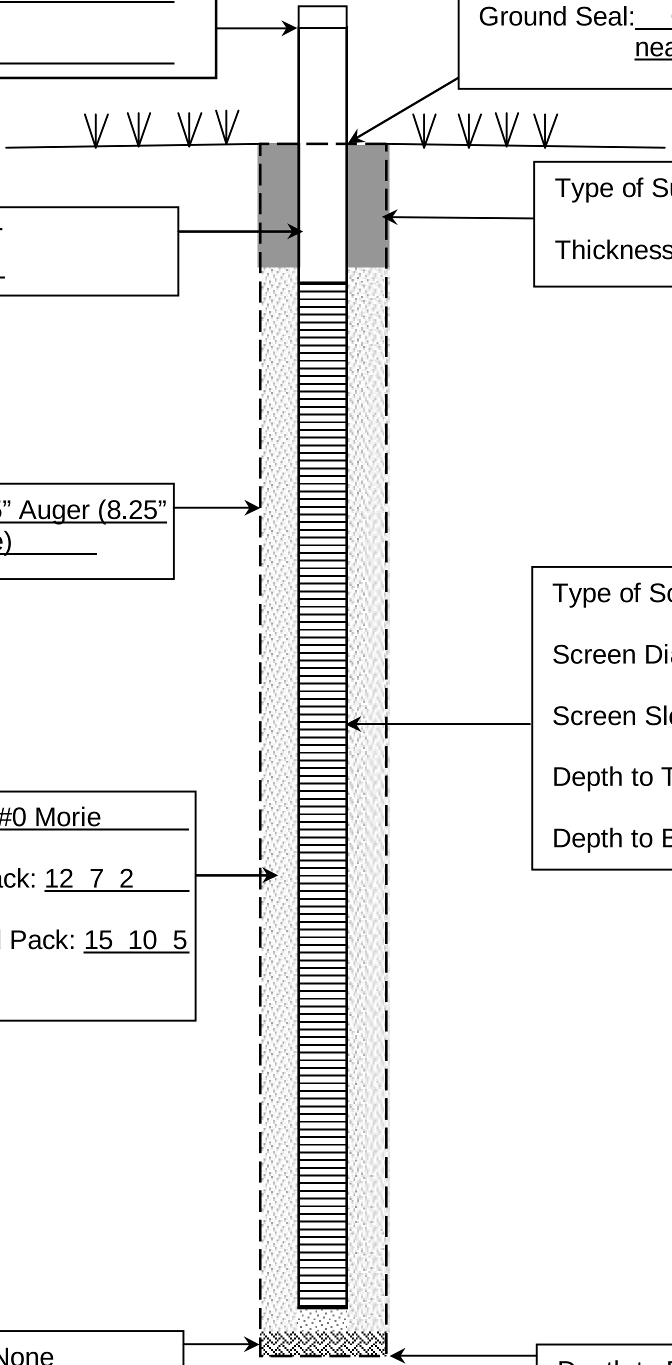
Type of Cap: ____

Ground Seal: Cold Patch on 6” sand near surface

Type of Surface Seal: Bentonite

Thickness of Surface Seal: 2’

Inside Diameter of Riser Pipe: 1”



Diameter Borehole: 4,25” Auger (8.25” hole)

Type of Screen: PVC

Screen Diameter: 1”

Screen Slot Size: 0.010” (10 slot)

Depth to Top of Screen: 13 8 3

Depth to Bottom of Screen: 15 10 5

Type of Sand Pack: #0 Morie

Depth to Top of Sand Pack: 12 7 2

Depth to Bottom of Sand Pack: 15 10 5

Backfill (if any): None

Depth to Bottom of Borehole: 15’

WELL CONSTRUCTION LOG

BORING NO. VW4

WELL NO. VW4-12

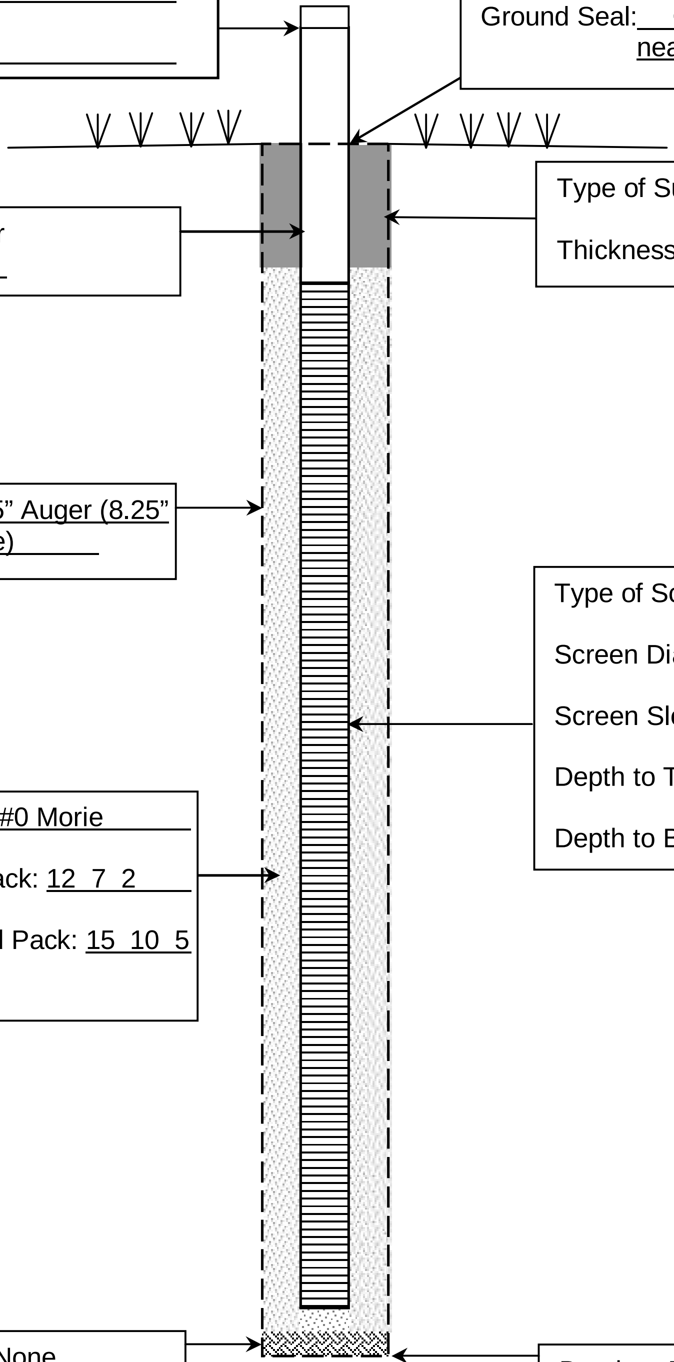
PROJECT & LOCATION: SI Group, Congress Street, Schenectady, NY
CLIENT: SI Group
CONTRACTOR: Aztech Technologies

PROJECT NO.: 15091
SHEET NO.: 1 OF 1
ELEVATION:
START DATE: 3/27/12 TIME: 12:00pm
FINISH DATE: 3/27/12 TIME: 12:45pm
DRILLER: Chris/Tony
INSPECTOR: Blaydes

Depth Above/Below Ground of Riser Pipe: __________

Type of Cap: __________

Ground Seal: Cold Patch on 6” sand near surface



Type of Surface Seal: Bentonite

Thickness of Surface Seal: 2‘

Inside Diameter of Riser Pipe: 1”

Diameter Borehole: 4,25” Auger (8.25” hole)

Type of Screen: PVC

Screen Diameter: 1”

Screen Slot Size: 0.010” (10 slot)

Depth to Top of Screen: 13 8 3

Depth to Bottom of Screen: 15 10 5

Type of Sand Pack: #0 Morie

Depth to Top of Sand Pack: 12 7 2

Depth to Bottom of Sand Pack: 15 10 5

Backfill (if any): None

Depth to Bottom of Borehole: 15’

WELL CONSTRUCTION LOG

BORING NO. VW5

WELL NO. VW5-12

PROJECT & LOCATION: SI Group, Congress Street, Schenectady, NY
CLIENT: SI Group
CONTRACTOR: Aztech Technologies

PROJECT NO.: 15091
SHEET NO.: 1 OF 1
ELEVATION:
START DATE: 3/23/12 TIME: 10:45am
FINISH DATE: 3/23/12 TIME:
DRILLER: Chris/Tony
INSPECTOR: Blaydes

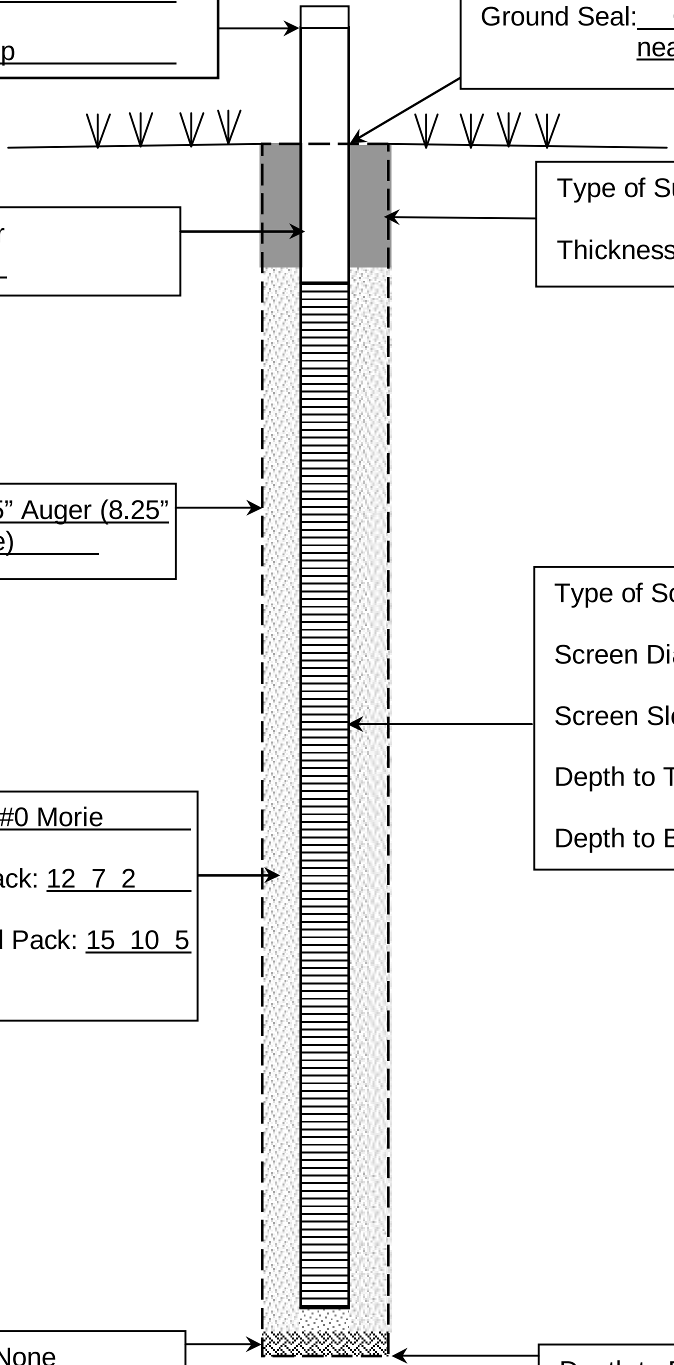
PID Readings From Soil Cuttings:

1st Auger removed soil cuttings: 3.7ppm PID
2nd Auger removed soil cuttings: 5.7ppm PID
3rd Auger removed soil cuttings: 12.6ppm PID

Depth Above/Below Ground of Riser Pipe: ______

Type of Cap: Screw/Slip

Ground Seal: Cold Patch on 6” sand near surface



Type of Surface Seal: Bentonite

Thickness of Surface Seal: 2‘

Inside Diameter of Riser Pipe: 1”

Diameter Borehole: 4,25” Auger (8.25” hole)

Type of Screen: PVC

Screen Diameter: 1”

Screen Slot Size: 0.010” (10 slot)

Depth to Top of Screen: 13 8 3

Depth to Bottom of Screen: 15 10 5

Type of Sand Pack: #0 Morie

Depth to Top of Sand Pack: 12 7 2

Depth to Bottom of Sand Pack: 15 10 5

Backfill (if any): None

Depth to Bottom of Borehole: 15’

WELL CONSTRUCTION LOG

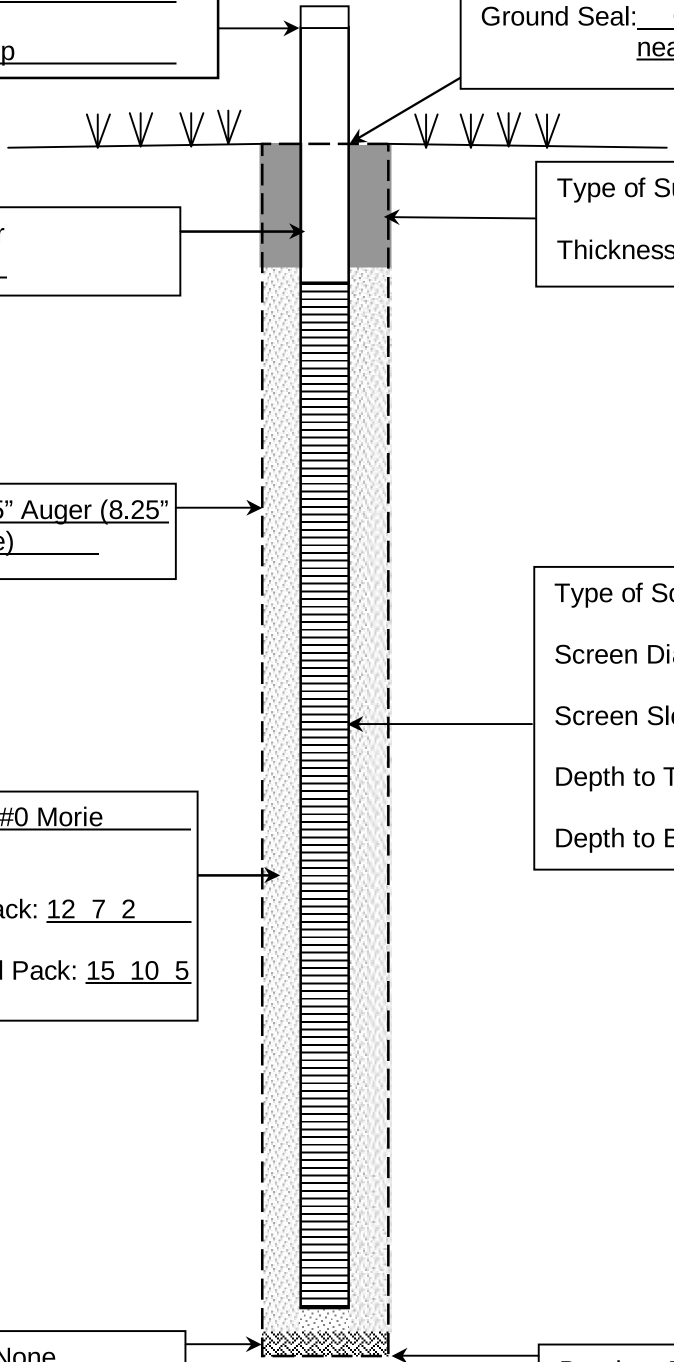
BORING NO. VW6
WELL NO. VW6-12

PROJECT & LOCATION: SI Group, Congress Street, Schenectady, NY
CLIENT: SI Group
CONTRACTOR: Aztech Technologies

PROJECT NO.: 15091
SHEET NO.: 1 OF 1
ELEVATION:
START DATE: 3/26/12 TIME: 12:45am
FINISH DATE: 3/26/12 TIME: 3:40pm
DRILLER: Chris/Tony
INSPECTOR: Blaydes

PID Readings From Soil Cuttings:

1st Auger removed soil cuttings: 3.7ppm PID
2nd Auger removed soil cuttings: 5.7ppm PID
3rd Auger removed soil cuttings: ??ppm PID



Depth Above/Below Ground of Riser Pipe: ____

Type of Cap: Screw/Slip

Ground Seal: Cold Patch on 6" sand near surface

Type of Surface Seal: Bentonite

Thickness of Surface Seal: '

Inside Diameter of Riser Pipe: 1"

Diameter Borehole: 4,25" Auger (8.25" hole)

Type of Screen: PVC

Screen Diameter: 1"

Screen Slot Size: 0.010" (10 slot)

Depth to Top of Screen: 13 8 3

Depth to Bottom of Screen: 15 10 5

Type of Sand Pack: #0 Morie

Depth to Top of Sand Pack: 12 7 2

Depth to Bottom of Sand Pack: 15 10 5

Backfill (if any): None

Depth to Bottom of Borehole: 15'

APPENDIX D

SOIL SAMPLING LOGS

SI Group, Congress Street

SUBSURFACE LOG

HOLE NUMBER SB01

Page 1 of 1

PROJECT NUMBER: 15091.1000.31000 5/7/12

LOCATION: Schenectady, New York	DRILL FLUID: None
CLIENT: SI Group	DRILLING METHOD: Geoprobe
CONTRACTOR: Aztech	
DRILLER: Ray	INSPECTOR: B. Blaydes
START DATE and TIME: 4/2/2012 9:15:00 AM	
FINISH DATE and TIME: 4/2/2012 10:04:00 AM	
SURFACE ELEV:	CHECKED BY: S. Fowler

	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
WATER LEVEL OBSERVATIONS	4-2-12	10:04 AM	Estimated	None		5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S1	3	3			■	2	▨	**CRUSHED CONCRETE and ASPHALT**, Some m.c. Sand, little f. sand, grey, poorly graded, angular, medium compact, dry **(FILL)** **m. SAND**, little c. sand, trace f. gravel, trace silt, trace cinders, brown, poorly graded, subrounded, medium compact, moist **(FILL)**		Soil sample collected at 9:15am from 2-3 feet. PID = 418 ppm from headspace in soil sample bag.	
						4 6 8 10 12 14		End of Recovery at 3 Ft.			

PROJECT NUMBER: 15091.1000.31000 5/7/12	**SI Group, Congress Street** SUBSURFACE LOG HOLE NUMBER SB02 Page 1 of 1

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 4/2/2012 10:04:00 AM

FINISH DATE and TIME: 4/2/2012 10:30:00 AM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
WATER LEVEL OBSERVATIONS	4-2-12	10:30 AM	Estimated	1		5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
					▮		▨	**CRUSHED CONCRETE and ASPHALT**, Some c. Sand, little f.m. sand, trace silt, grey, poorly graded, angular, medium compact, moist **(FILL)**		Groundwater is estimated at 1.0 foot based on moisture content in soil samples. black stain at top of sample Soil sample collected at 10:04am from 2-3 feet. PID = 524 ppm from headspace in soil sample bag. Silty and dry in tip of sample sleeve	▽
S1	3	3			▮	2	░	**m. SAND**, little f. sand, trace silt, brown, poorly graded, subangular, medium compact, wet **(SP)**			
								End of Recovery at 3 Ft.			
						4					
						6					
						8					
						10					
						12					
						14					

PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street

SUBSURFACE LOG

HOLE NUMBER SB03

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LOCATION: Schenectady, New York	
CLIENT: SI Group	
CONTRACTOR: Aztech	
DRILLER: Ray	INSPECTOR: B. Blaydes
START DATE and TIME: 4/2/2012 10:30:00 AM	
FINISH DATE and TIME: 4/2/2012 10:45:00 AM	
SURFACE ELEV:	CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	4-2-12	10:45 AM	Estimated	None		5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
					■		☒	**CRUSHED CONCRETE**, Some c. Sand, little f. gravel, little m. sand, grey, angular, compact, dry **(FILL)**		Strong Odor	
S1	3	3			■		▒	**m. SAND**, little c. sand, trace silt, brown/black stain, subrounded, medium compact, moist **(SP)**		Soil sample collected at 10:30am from 1-2 feet.	
					■	2	▥	**SILT**, trace f. sand, trace clay, mottled brown/orange, compact, moist **(ML)**		Low plasticity PID = 628 ppm from headspace in soil sample bag.	
								End of Recovery at 3 Ft.			
						4					
						6					
						8					
						10					
						12					
						14					

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER SB04

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PROJECT NUMBER: 15091.1000.31000 5/7/12

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 4/2/2012 10:45:00 AM

FINISH DATE and TIME: 4/2/2012 11:15:00 AM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	4-2-12	11:15 AM	Estimated	None		5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S1	2	2					▨	**CRUSHED CONCRETE and LIMESTONE**, Some c. Sand, little f. gravel, trace m. sand, trace silt, grey, angular, compact, dry **(FILL)**		Soil sample collected at 10:45am from 1-2 feet. PID = 486 ppm from headspace in soil sample bag. Strong Odor Low plasticity	
						2		**SILT**, trace f. sand, trace wood fragments, compact, moist **(ML)**			
								End of Recovery at 2 Ft.			
						4					
						6					
						8					
						10					
						12					
						14					

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SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER SB05

PROJECT NUMBER: 15091.1000.31000 5/7/12

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LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 4/2/2012 11:15:00 AM

FINISH DATE and TIME: 4/2/2012 12:00:00 PM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
WATER LEVEL OBSERVATIONS	4-2-12	12:00 PM	Estimated	None		5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								CRUSHED CONCRETE, Some c. Sand, little m. sand, trace f. gravel, trace silt, grey, angular, medium compact, dry **(FILL)**			
S1	3	3						**SILT**, Some f. Sand, trace m.c. sand, brown, compact, moist **(FILL)**		Soil sample collected at 11:15am from 1-2 feet. PID = 233 ppm from headspace in soil sample bag. Low plasticity Black staining and cinders at bottom of silty/sand layer. Strong odor in black stain.	
						2		**Clayey SILT**, trace f. sand, grey, very compact, moist **(ML)**			
								End of Recovery at 3 Ft.			
						4					
						6					
						8					
						10					
						12					
						14					

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SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER SB06

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PROJECT NUMBER: 15091.1000.31000 5/7/12

LOCATION: Schenectady, New York	DRILL FLUID: None
CLIENT: SI Group	DRILLING METHOD: Geoprobe
CONTRACTOR: Aztech	
DRILLER: Ray	INSPECTOR: B. Blaydes
START DATE and TIME: 4/2/2012 12:00:00 PM	
FINISH DATE and TIME: 4/2/2012 12:15:00 PM	
SURFACE ELEV:	CHECKED BY: S. Fowler

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	4-2-12	12:15 PM	Estimated	1.2		5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								f.m. SAND, trace silt, brown, loose, subrounded, moist **(FILL)**			
								CLAY, Some Silt, brown, very compact, dry **(CL)**		Soil samples collected at 12:00pm from 1-2 feet/ 3-4 feet respectively. medium plasticity, roots noted, strong odor	
S1	4	4				2		**f.m. SAND**, trace silt, brown, subangular, loose, wet **(SP)**			
								SILT, little f. sand, trace clay, mottled brown/orange, compact, moist **(ML)**		Strong Odor PID = 47 ppm/ 9999 ppm respectively from headspace in soil sample bags.	
						4		End of Recovery at 4 Ft.		Groundwater noted @ 1.25 feet is likely perched water in the sand soils above the fine silt.	
						6					
						8					
						10					
						12					
						14					

SUBSURFACE LOG 15091 LOGS.GPJ UPDATEDCHA.GDT 5/11/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER SB07

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PROJECT NUMBER: 15091.1000.31000 5/7/12

LOCATION: Schenectady, New York	DRILL FLUID: None
CLIENT: SI Group	DRILLING METHOD: Geoprobe
CONTRACTOR: Aztech	
DRILLER: Ray	INSPECTOR: B. Blaydes
START DATE and TIME: 4/2/2012 12:15:00 PM	
FINISH DATE and TIME: 4/2/2012 1:30:00 PM	
SURFACE ELEV:	CHECKED BY: S. Fowler

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	4-2-12	1:30 PM	Estimated	None		5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S1	4	4						**f. SAND**, little silt, trace m. sand, trace clay, trace roots, brown, subrounded, loose, moist **(SM)**			
						2		**Clayey SILT**, little f. sand, brown, compact, moist **(ML)**		Soil samples collected at 12:15pm from 1-2 feet & 3-4 feet respectively. Odor noted Low plasticity silt PID = 26.1ppm/ 38.8 ppm respectively from headspace in soil sample bags.	
						4		End of Recovery at 4 Ft.			
						6					
						8					
						10					
						12					
						14					

PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER SB08

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LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray INSPECTOR: B. Blaydes

START DATE and TIME: 4/2/2012 1:30:00 PM

FINISH DATE and TIME: 4/2/2012 2:15:00 PM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	4-2-12	2:15 PM	Estimated	1		5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
					■		▩	**CRUSHED CONCRETE**, Some c. Sand, trace m. sand, trace f. gravel, grey, subangular, loose, dry **(FILL)**			
S1	3	3			■	2	░	**f. SAND**, Some Silt, trace m. sand, black stained, subangular, medium compact, wet **(SM)**		Groundwater is estimated at 1.0 foot based on moisture content in soil samples. Soil samples collected at 1:30pm from 1-2 feet & 2-3 feet respectively.	∇
								End of Recovery at 3 Ft.		PID = 16.5ppm/ 10.2 ppm respectively from headspace in soil sample bags.	
						4					
						6					
						8					
						10					
						12					
						14					

PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER SB09

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LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 4/2/2012 12:15:00 PM

FINISH DATE and TIME: 4/2/2012 12:30:00 PM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	4-2-12	12:30 PM	Completion	None		5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								CRUSHED CONCRETE, Some c. Sand, little m. sand, trace f. gravel, trace silt, grey, medium compact, dry **(FILL)**			
								f. SAND, Some m. Sand, little silt, trace c. sand, brown, subrounded, medium compact, moist **(SM)**		Soil samples collected at 1:45pm from 1-2 feet & 3-4 feet respectively.	
S1	4	4				2					
										PID = 9.3ppm/ 6.5ppm respectively from headspace in soil sample bags.	
						4		End of Recovery at 4 Ft.			
						6					
						8					
						10					
						12					
						14					

SI Group, Congress Street

SUBSURFACE LOG

HOLE NUMBER SB10

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PROJECT NUMBER: 15091.1000.31000 5/7/12

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 4/2/2012 12:30:00 PM

FINISH DATE and TIME: 4/2/2012 12:45:00 PM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS

DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
4-2-12	12:45 PM	Estimated	None		5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
					▮		▩	**CRUSHED CONCRETE**, Some m. Sand, little f. gravel, trace f.c. sand, grey, angular, compact, moist **(FILL)**			
S1	3	3			▮	2	▥	**SILT**, little f. sand, trace clay, orange, hard, moist **(ML)**		Soil sample collected at 12:30pm from 1-2 feet. PID = 14.6ppm from headspace in soil sample bag.	
								End of Recovery at 3 Ft.			
						4					
						6					
						8					
						10					
						12					
						14					

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER SB11

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PROJECT NUMBER: 15091.1000.31000 5/7/12

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray INSPECTOR: B. Blaydes

START DATE and TIME: 4/2/2012 12:45:00 PM

FINISH DATE and TIME: 4/2/2012 1:00:00 PM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS

DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
4-2-12	1:00 PM	Estimated	None		5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S1	3	3			■		▩	**CRUSHED CONCRETE**, Some f. Gravel, little f.m.c. sand, trace silt, grey, angular, medium compact, dry **(FILL)**			
					■	2	▥	**SILT**, little f. sand, trace m. sand, trace clay, brown, hard, dry **(ML)**		Soil sample collected at 12:45pm from 2-3 feet. PID = 13.1ppm from headspace in soil sample bag. Low/No plasticity	
								End of Recovery at 3 Ft.			
						4					
						6					
						8					
						10					
						12					
						14					

PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER SB12

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 4/2/2012 2:00:00 PM

FINISH DATE and TIME: 4/2/2012 2:25:00 PM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
WATER LEVEL OBSERVATIONS	4-2-12	2:25 PM	Estimated	None		5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S1	3	3			█	2	⁘	**f. SAND**, Some m. Sand, little clayey silt, trace f. gravel, trace c. sand, brown, subrounded, medium compact, moist **(SM)**		Soil samples collected at 2:00pm from 0-1 feet and 2-3 feet. PID = 3.0ppm from headspace in soil sample bag from sample from 1-2 feet.	
						4		End of Recovery at 3 Ft.			
						6					
						8					
						10					
						12					
						14					

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER SB13

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PROJECT NUMBER: 15091.1000.31000 5/7/12

LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray INSPECTOR: B. Blaydes

START DATE and TIME: 4/2/2012 1:15:00 PM

FINISH DATE and TIME: 4/2/2012 1:55:00 PM

SURFACE ELEV: CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
WATER LEVEL OBSERVATIONS	4-2-12	1:55 PM	Estimated	2		5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S1	3	3			■		▩	**CRUSHED CONCRETE**, Some Silt, little f. gravel, trace c. sand, trace clay, brown, very compact, moist **(FILL)**		Fine grained material is low plasticity Soil samples collected at 2:00pm from 1-2 feet and 2-3 feet. PID = 4.7 ppm from headspace in soil sample bag in sample taken @ 2 feet. Groundwater is estimated at 2.0 feet based on moisture content in soil samples.	
					■	2	▒	**f. SAND**, Some Silt, trace c. sand, brown, subrounded, loose, wet **(SM)**			
								End of Recovery at 3 Ft.			
						4					
						6					
						8					
						10					
						12					
						14					

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PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER SB14

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LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 4/2/2012 1:00:00 PM

FINISH DATE and TIME: 4/2/2012 1:15:00 PM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	4-2-12	1:15 PM	Estimated	None		5

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
					▮		▩	**CRUSHED CONCRETE**, Some c. Sand, little m. sand, trace f. sand, grey, angular, medium compact, dry **(FILL)**			
S1	3	3			▮	2	▥	**SILT**, little f. sand, trace c. sand, brown, hard, moist **(ML)**		Soil samples collected at 1:00pm from 1-2 feet and 2-3 feet. PID = 3.6 ppm from headspace in soil sample bag in sample taken @ 2 feet. Low plasticity	
								End of Recovery at 3 Ft.			
						4					
						6					
						8					
						10					
						12					
						14					

PROJECT NUMBER: 15091.1000.31000 5/7/12

SI Group, Congress Street
SUBSURFACE LOG
HOLE NUMBER SB15

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LOCATION: Schenectady, New York

CLIENT: SI Group

CONTRACTOR: Aztech

DRILLER: Ray

INSPECTOR: B. Blaydes

START DATE and TIME: 4/2/2012 2:30:00 PM

FINISH DATE and TIME: 4/2/2012 2:45:00 PM

SURFACE ELEV:

CHECKED BY: S. Fowler

DRILL FLUID: None

DRILLING METHOD: Geoprobe

WATER LEVEL OBSERVATIONS	DATE	TIME	READING TYPE	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	4-2-12	2:45 PM	Estimated	3		5

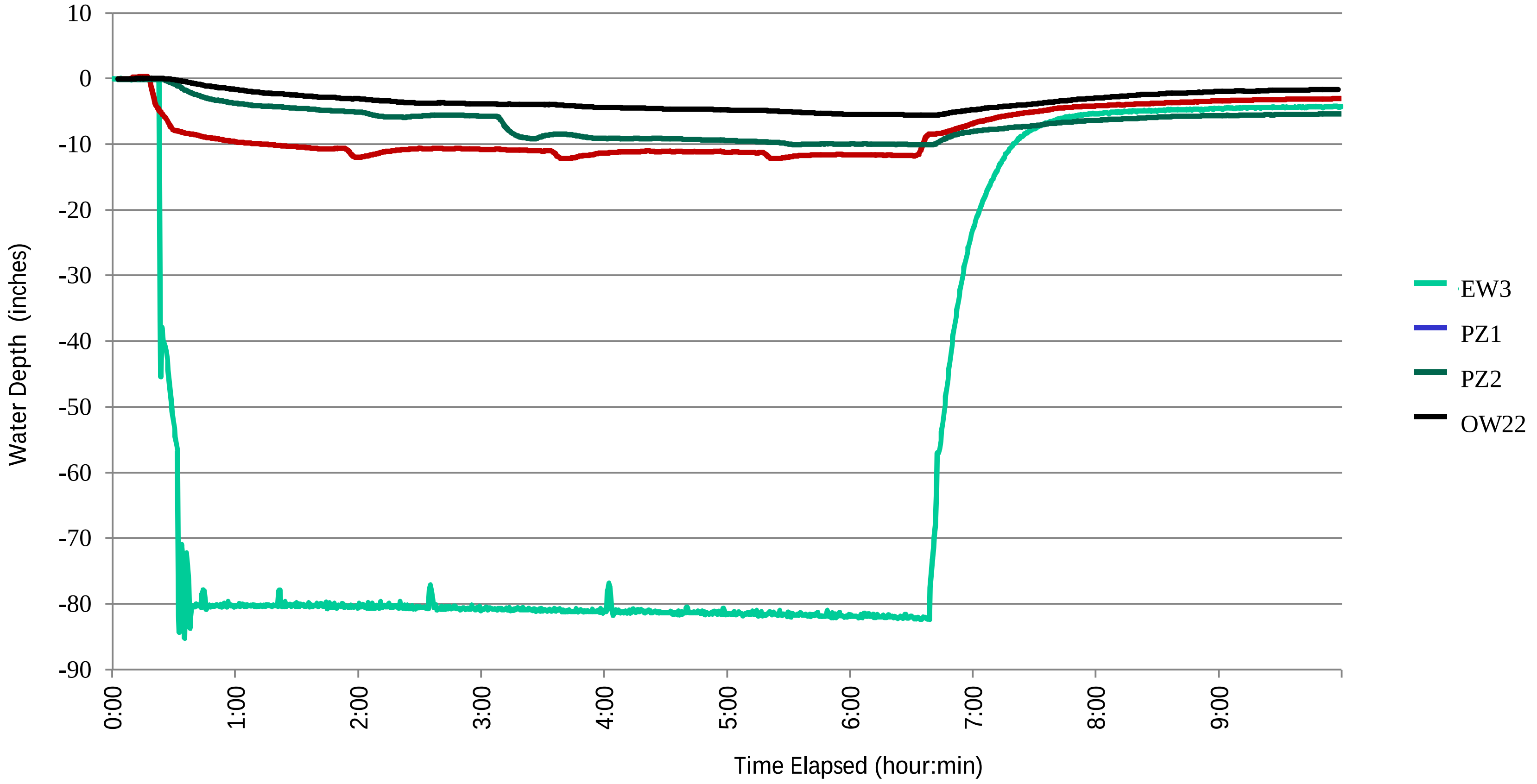
SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	Blows Per 6" on Split Spoon Sampler	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
S1	4	4			▮	2	▩	**CRUSHED CONCRETE**, Some c. Sand, little f. gravel, little silt, brown, angular, medium compact, dry **(FILL)**		Soil samples collected at 1:00pm from 1-2 feet and 3-4 feet. PID = 4.2ppm from headspace in soil sample bag in sample taken @ 2 feet. Groundwater is estimated at 3.0 feet based on moisture content in soil samples.	∇
					▮		⁘	**m. SAND**, little f. sand, brown, subrounded, medium compact, wet **(SP)**			
						4 6 8 10 12 14		End of Recovery at 4 Ft.			

APPENDIX E

GROUNDWATER EXTRACTION TEST RESULTS

Pre-Design Testing Results
CHART 1 A

EW3 Pump Test Results
4/16/2012

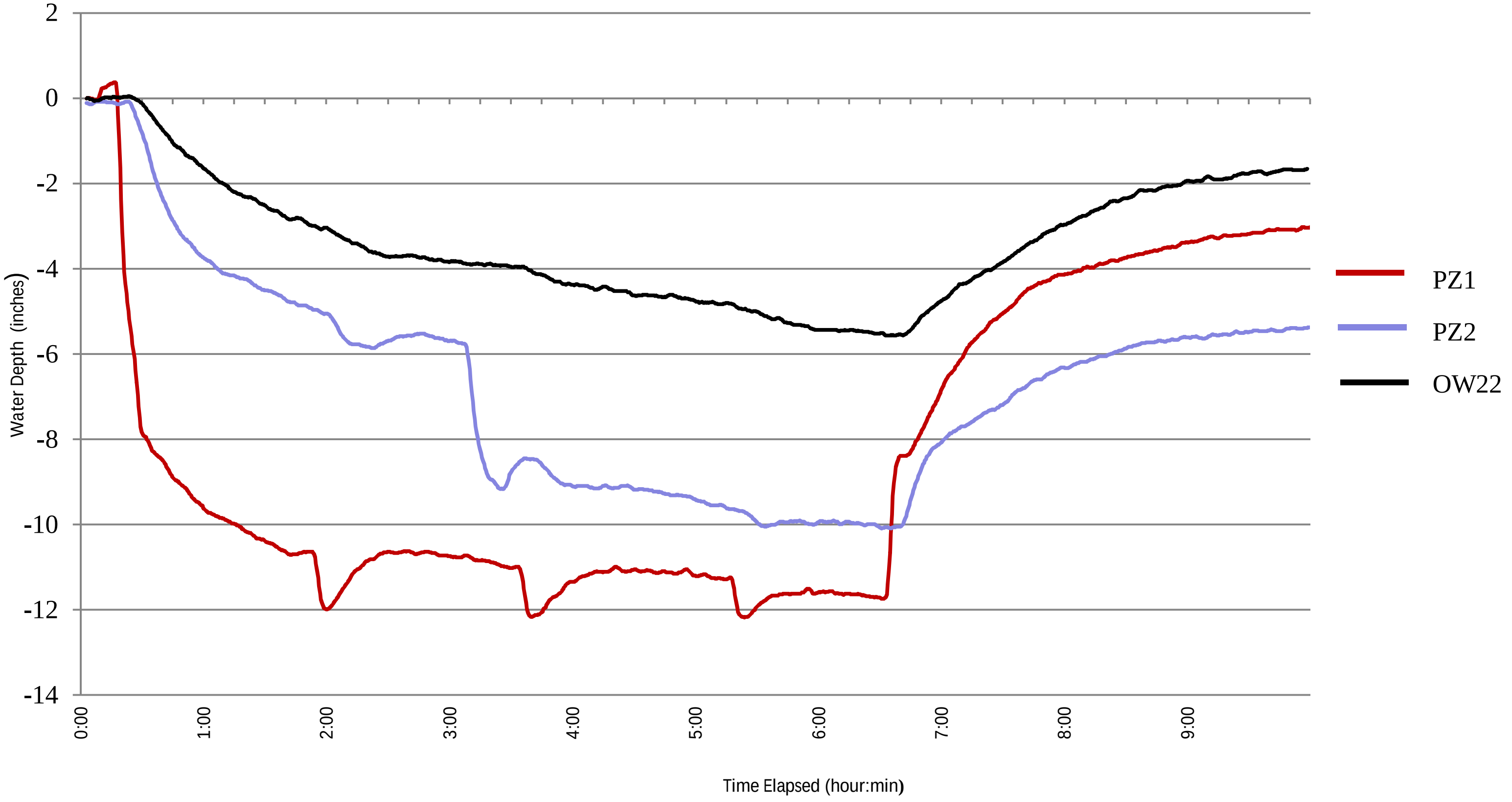


Pumping Rate: 0.5 Gallons Per Minute
Distance to Pumping Well:
PZ1 10 Feet
PZ2 20 Feet
OW22 30 Feet

CHA

Pre-Design Testing Results
CHART 1 B

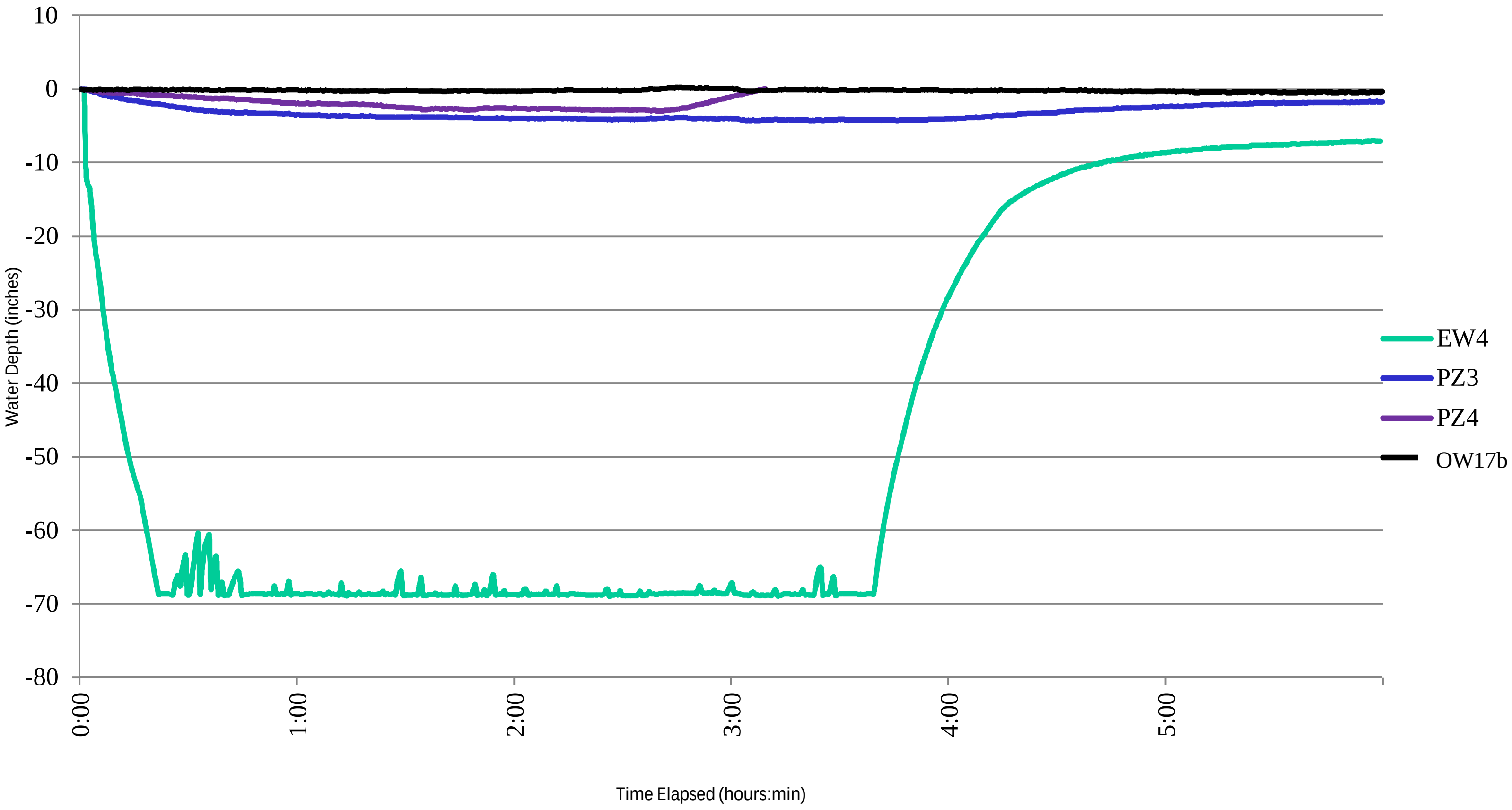
EW3 Pump Test Response Summary
4/16/2012



Pumping Rate: 0.5 Gallons Per Minute
Distance to Pumping Well:
PZ1 10 Feet
PZ2 20 Feet
OW22 30 Feet

Pre-Design Testing Results
CHART 2 A

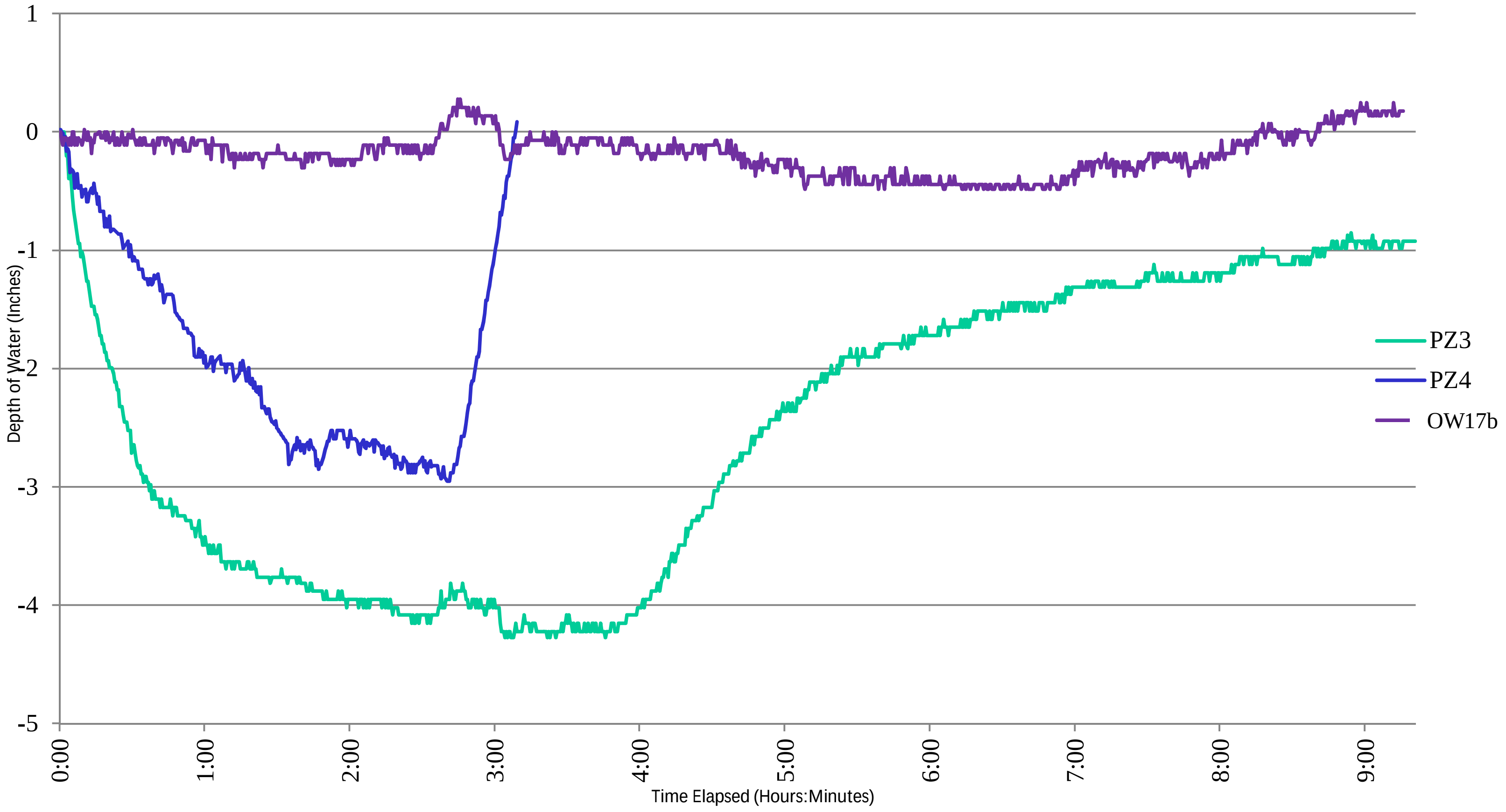
EW4 Pump Test Results
4/12/2012



Pumping Rate: 0.5 Gallons Per Minute
Distance to Pumping Well:
PZ3 10 Feet
PZ4 20 Feet
OW17b 30 Feet

Pre-Design Testing Results
CHART 2 B

EW4 Pump Test Response Summary
4/12/2012



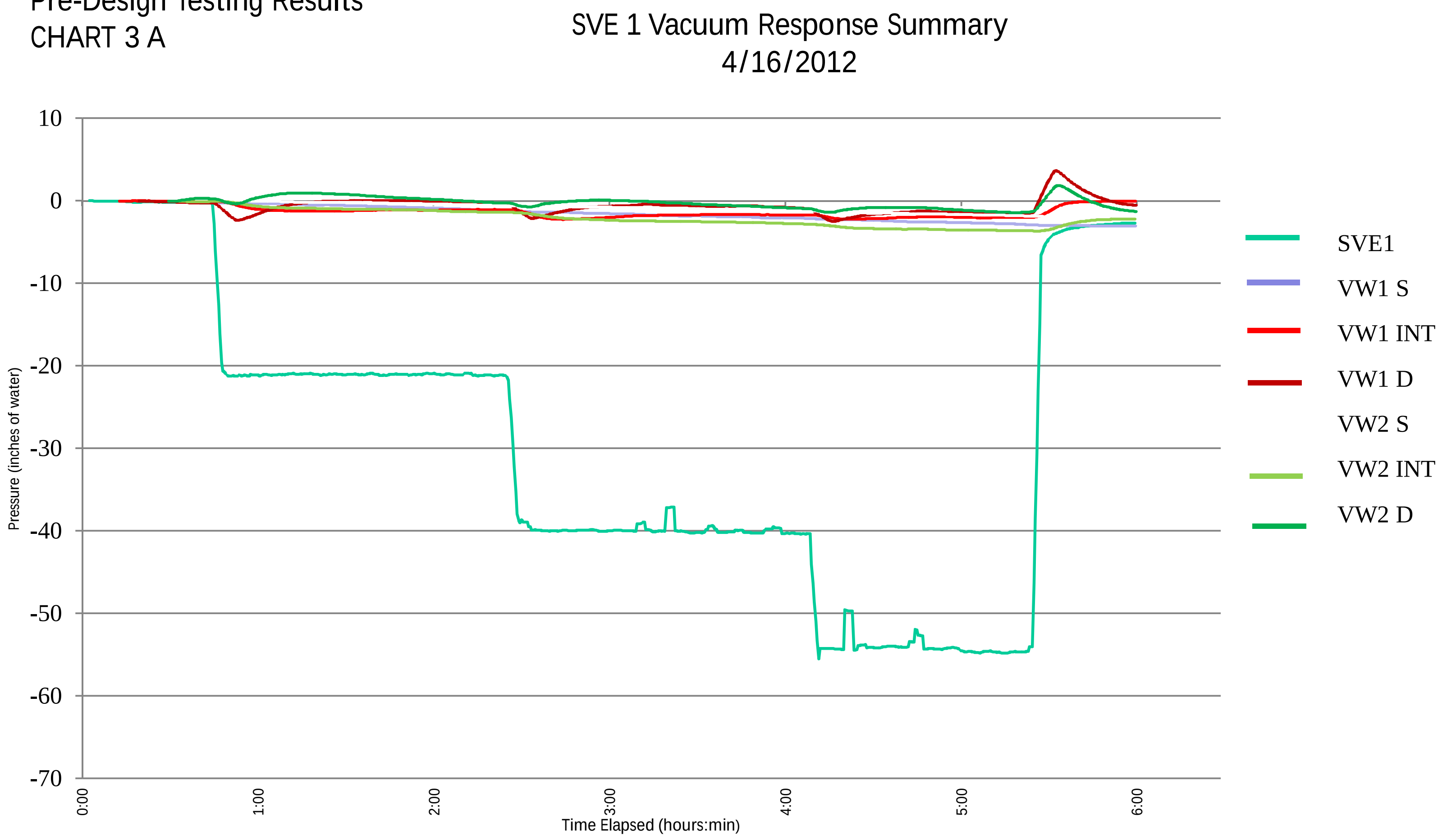
Pumping Rate: 0.5 Gallons Per Minute
Distance to Pumping Well:
PZ3 10 Feet
PZ4 20 Feet
OW17b 30 Feet

CHA

APPENDIX F

SVE TEST RESULTS

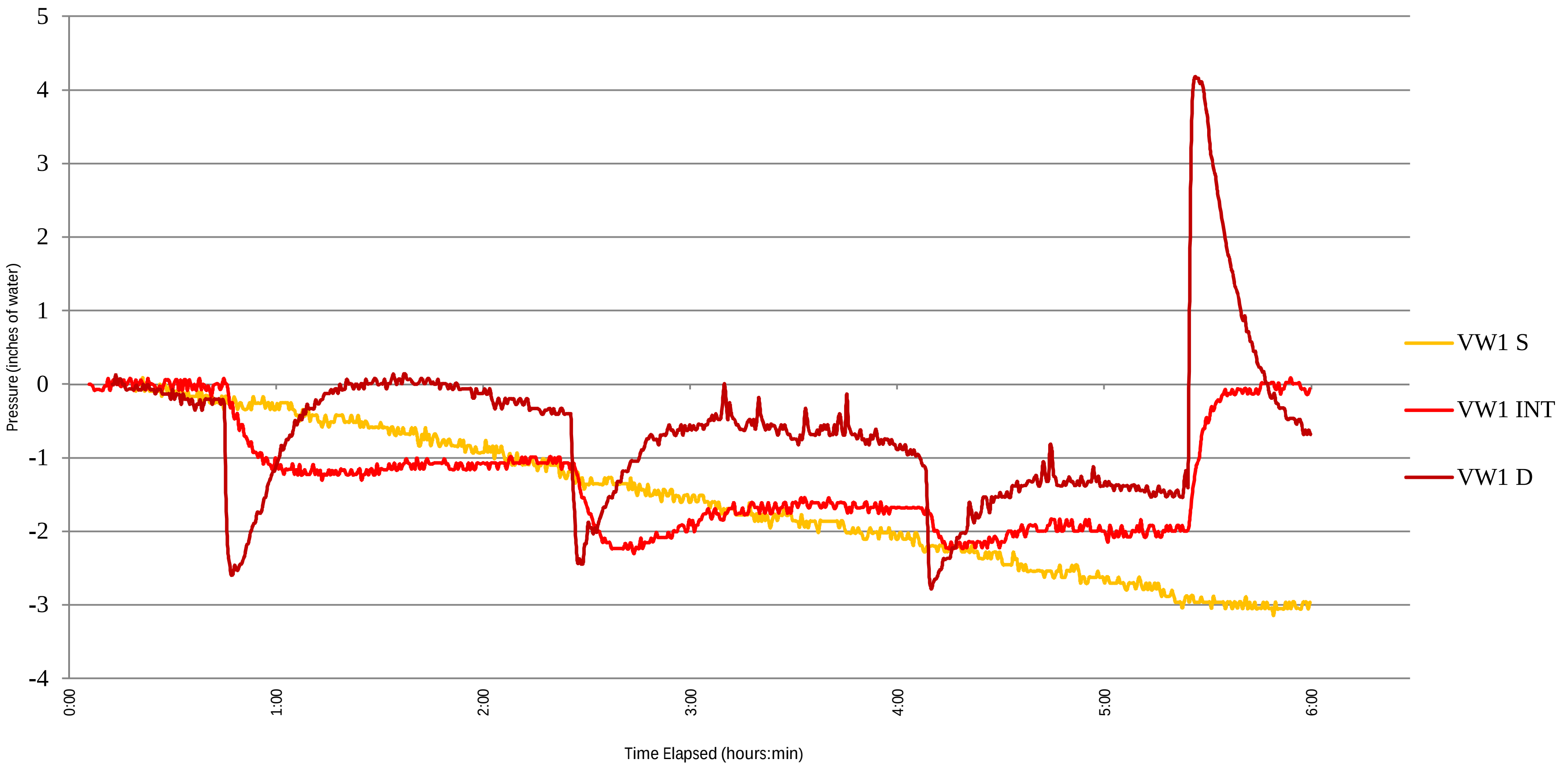
Pre-Design Testing Results
CHART 3 A



Vacuum Applied: -20, -40, -53 Inches of Water
Distance to Pumping Well:
VW1 5 Feet
VW2 10 Feet
OW22 30 Feet

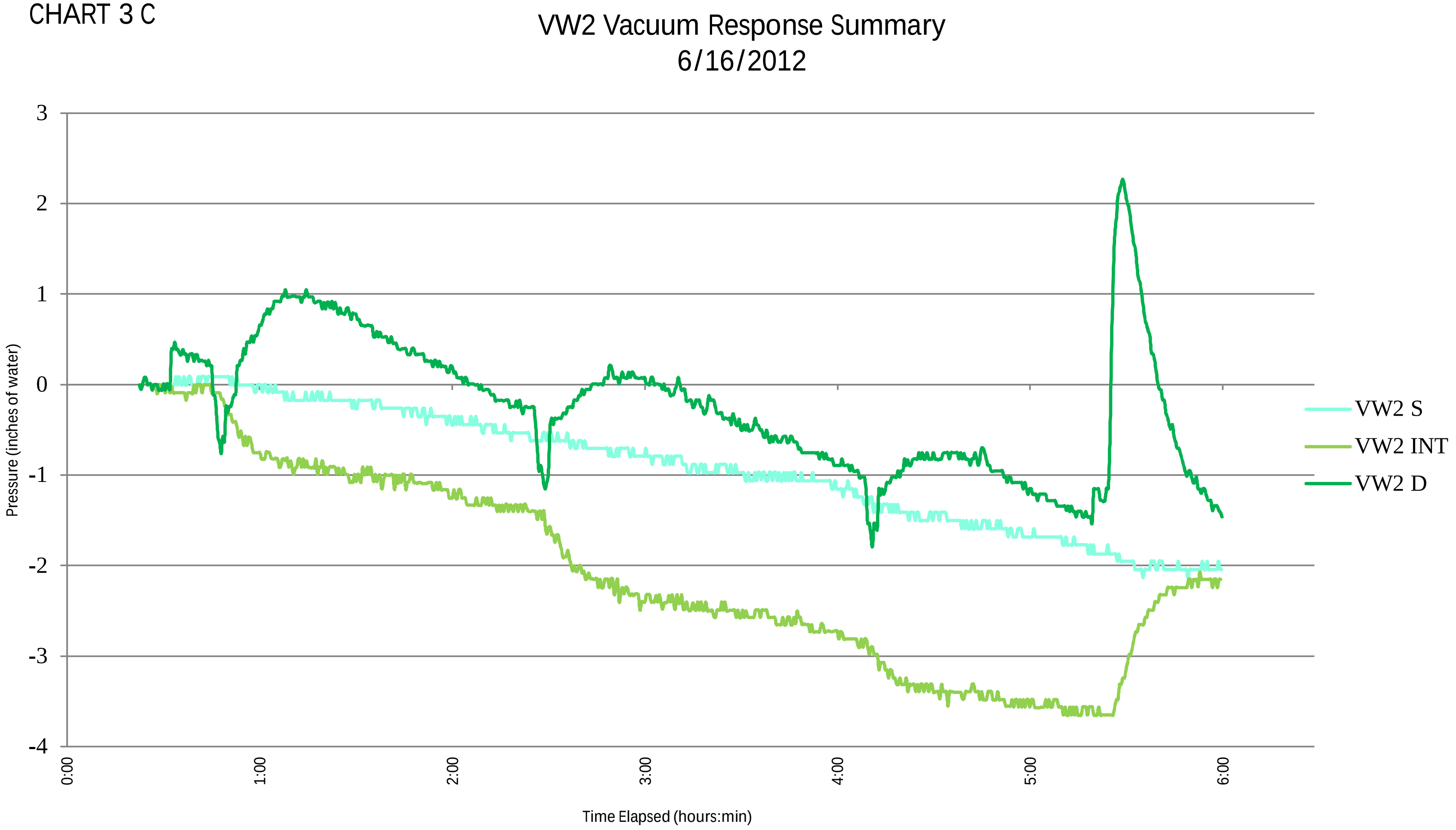
Pre-Design Testing Results
CHART 3 B

VW1 Vacuum Response Summary
6/16/2012



Vacuum Applied: -20, -40, -53 Inches of Water
Distance to Pumping Well:
VW1 5 Feet
VW1S Open Interval 3-5 Ft Below Ground Surface
VW1Int Open Interval 8-10 Ft Below Ground Surface
VW1D Open Interval 13-15 Ft Below Ground Surface

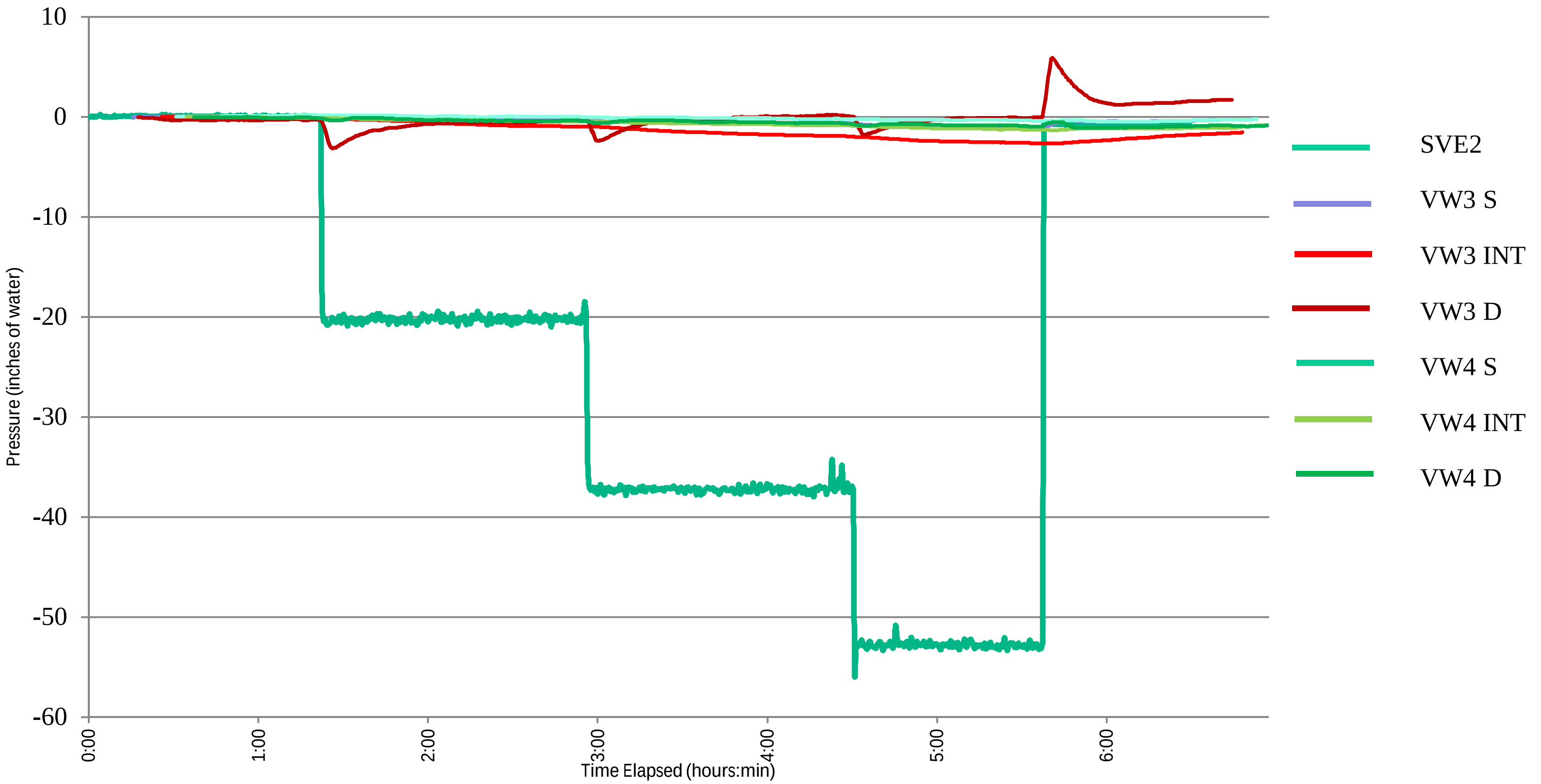
Pre-Design Testing Results
CHART 3 C



Vacuum Applied: -20, -40, -53 Inches of Water
Distance to Pumping Well:
SVE1 10 Feet
VW2S Open Interval 3-5 Ft Below Ground Surface
VW2Int Open Interval 8-10 Ft Below Ground Surface
VW2D Open Interval 13-15 Ft Below Ground Surface

Pre-Design Testing Results
CHART 4 A

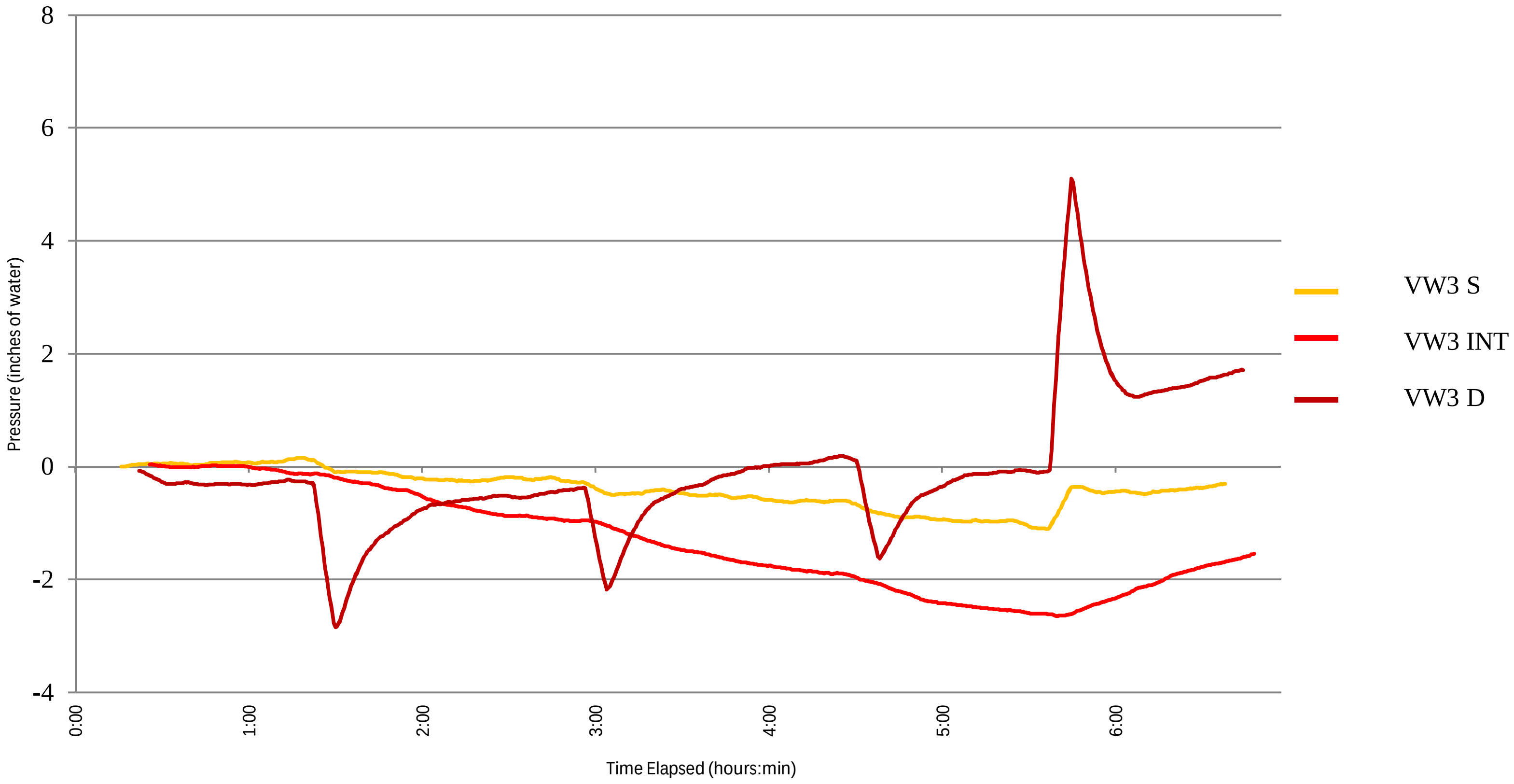
SVE2 Vacuum Response Summary
4/17/2012



Vacuum Applied: -20, -38, -53 Inches of Water
Distance to Pumping Well:
VW3 5 Feet
VW4 10 Feet

Pre-Design Testing Results
CHART 4 B

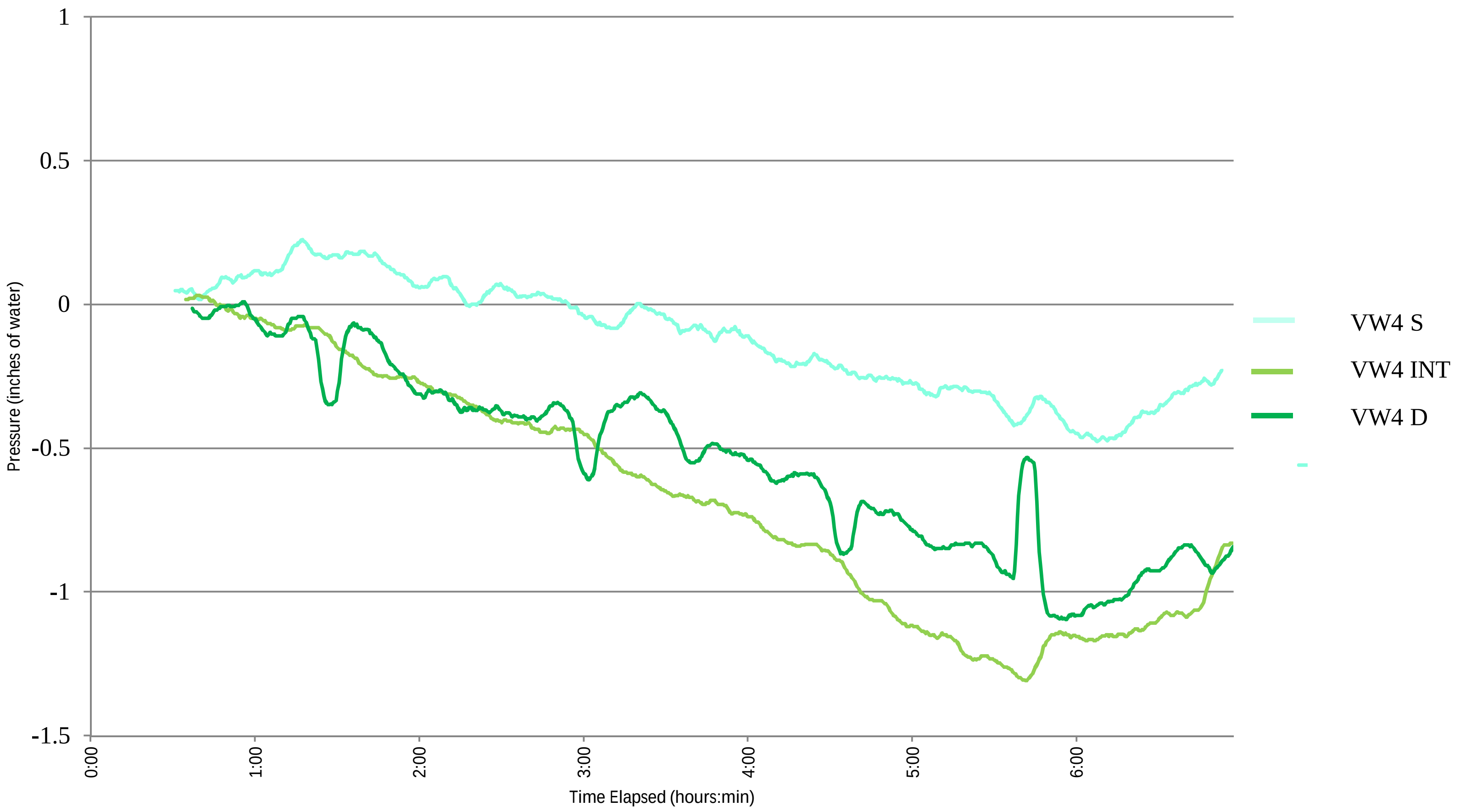
VW3 Vacuum Response Summary
4/17/2012



Vacuum Applied: -20, -38, -53 Inches of Water
Distance to Pumping Well:
SVE2 5 Feet
VW3S Open Interval 3-5 Ft Below Ground Surface
VW3Int Open Interval 8-10 Ft Below Ground Surface
VW3D Open Interval 13-15 Ft Below Ground Surface

Pre-Design Testing Results
CHART 4 C

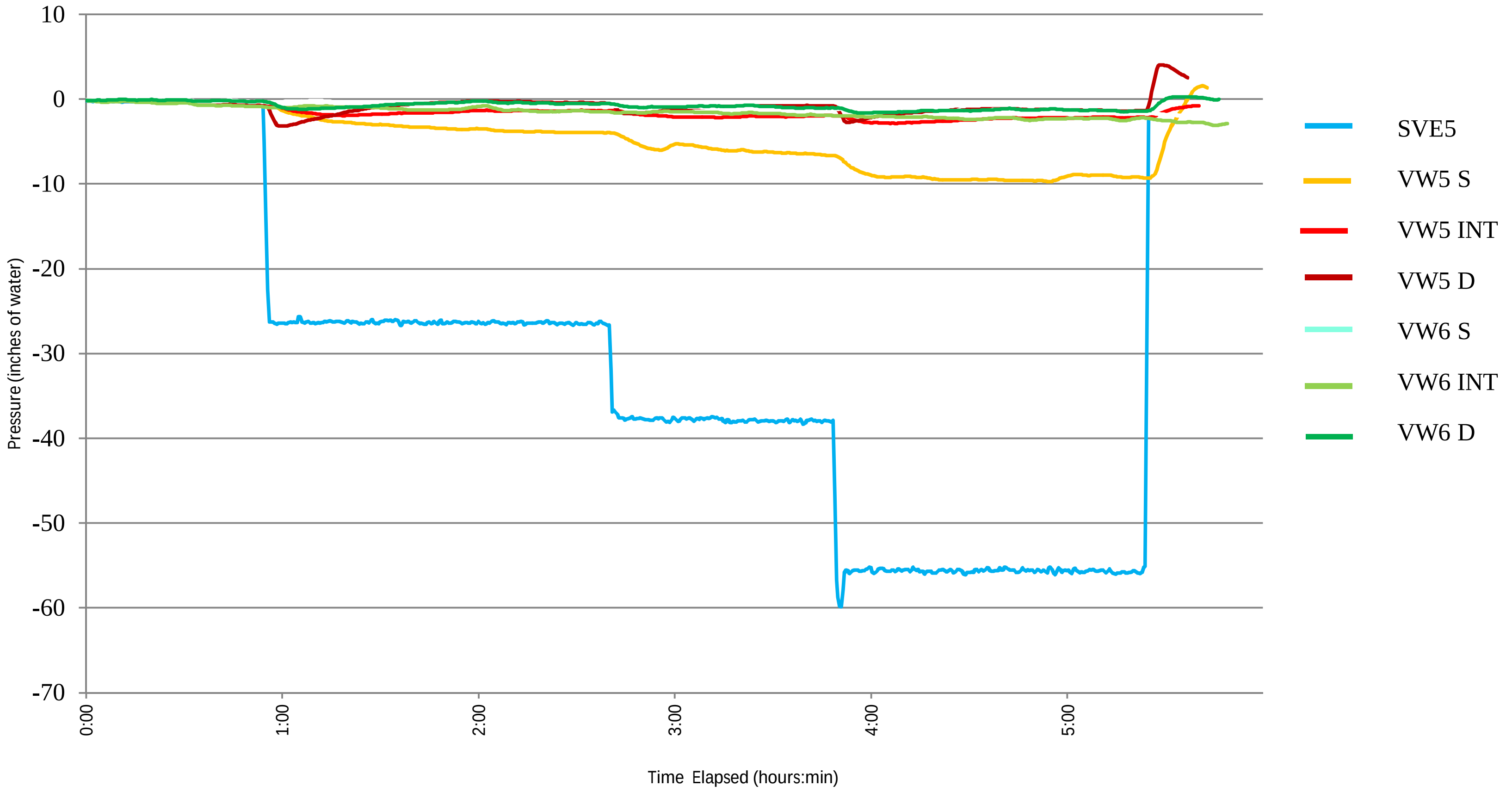
VW4 Vacuum Response Summary
4/17/2012



Vacuum Applied: -20, -38, -53 Inches of Water
Distance to Pumping Well:
SVE2 10 Feet
VW4S Open Interval 3-5 Ft Below Ground Surface
VW4Int Open Interval 8-10 Ft Below Ground Surface
VW4D Open Interval 13-15 Ft Below Ground Surface

Pre-Design Testing Results
CHART 5 A

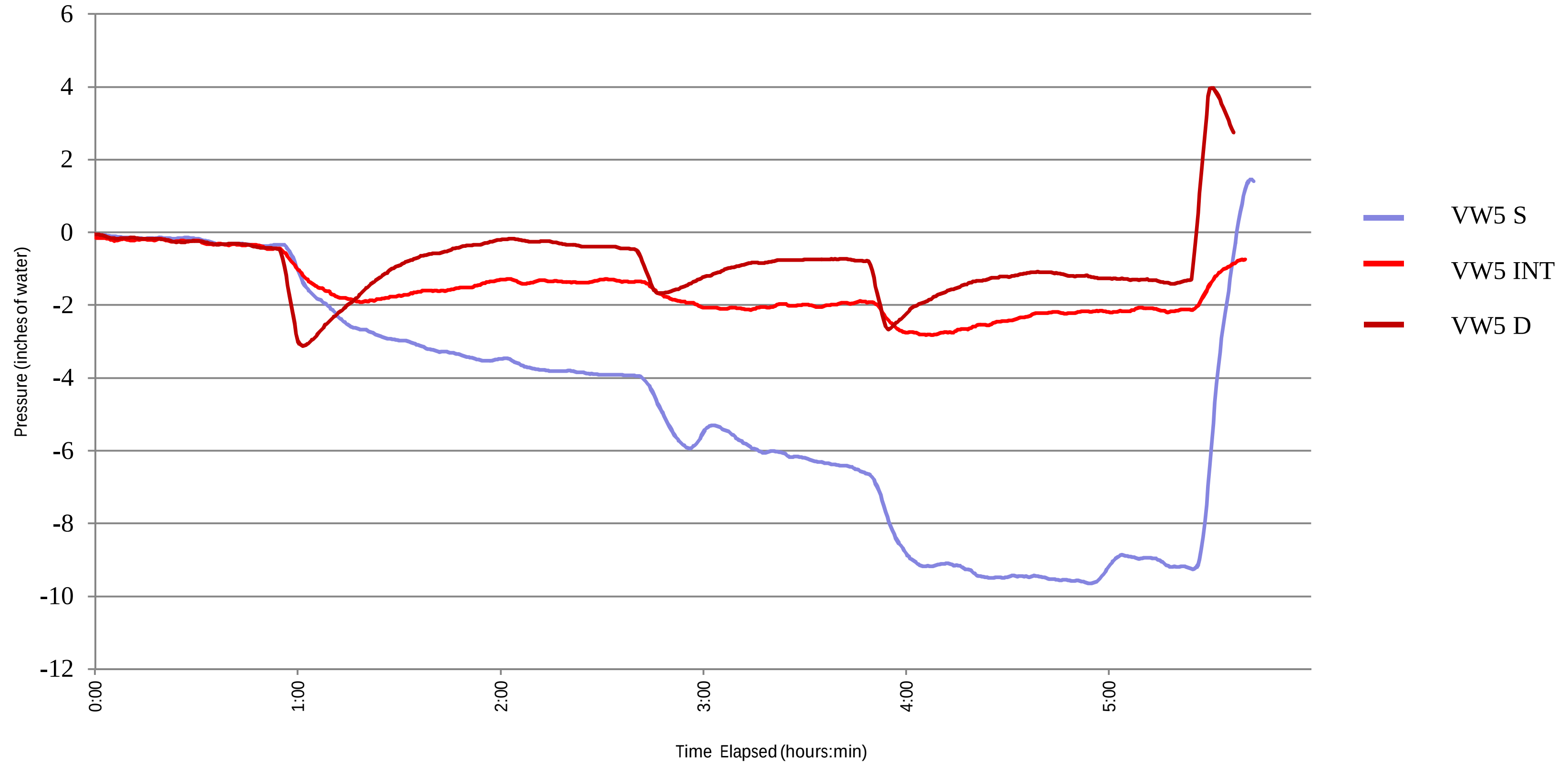
SVE3 Vacuum Response Summary
4/18/2012



Vacuum Applied: -28, -38, -55 Inches of Water
Distance to Pumping Well:
VW5 5 Feet
VW6 10 Feet

Pre-Design Testing Results
CHART 5 B

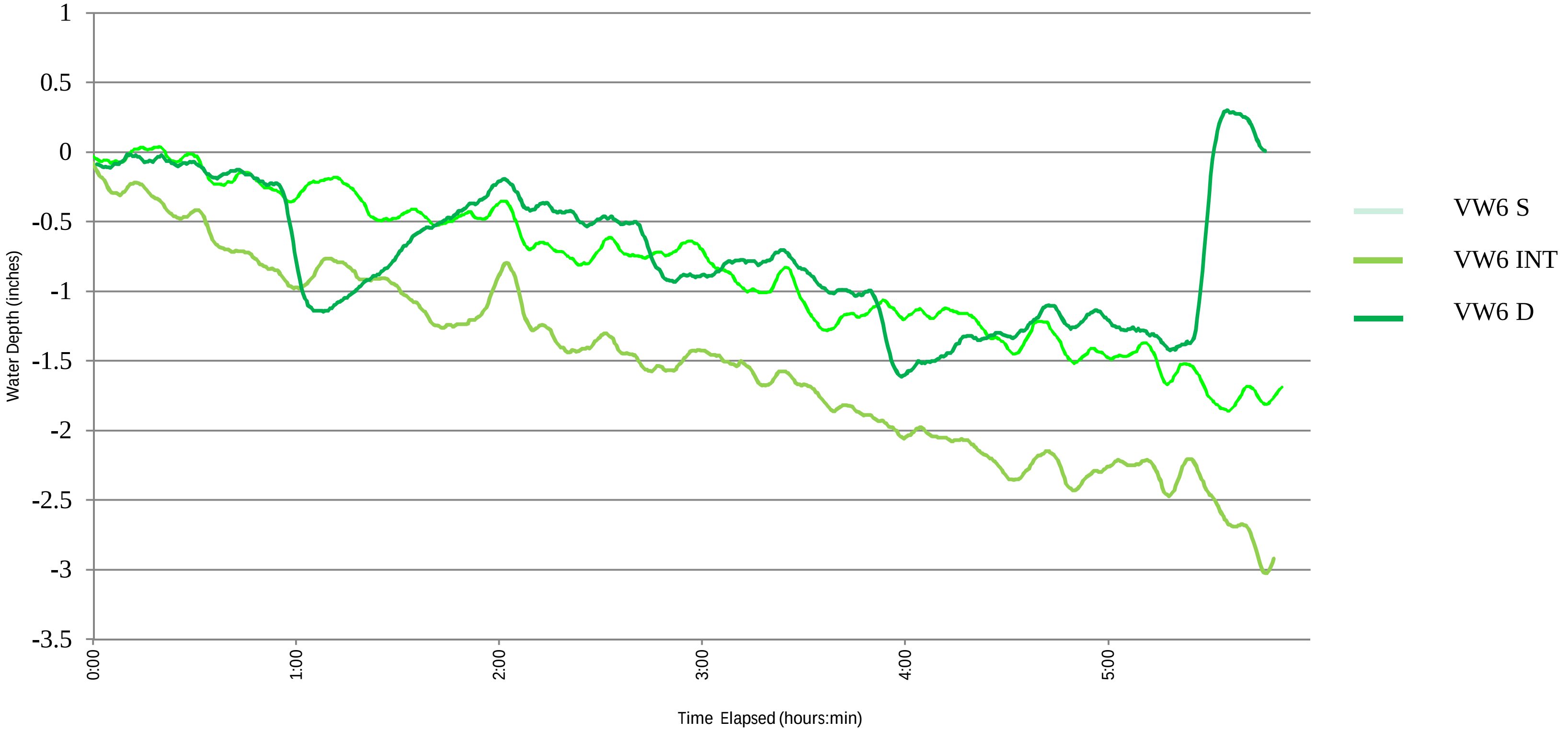
VW 5 Vacuum Response Summary
4/18/2012



Vacuum Applied: -28, -38, -55 Inches of Water
Distance to Pumping Well:
SVE3 5 Feet
VW5S Open Interval 3-5 Ft Below Ground Surface
VW5Int Open Interval 8-10 Ft Below Ground Surface
VW5D Open Interval 13-15 Ft Below Ground Surface

Pre-Design Testing Results
CHART 5 C

VW6 Vacuum Response Summary
4/18/2012



Vacuum Applied: -28, -38, -55 Inches of Water
Distance to Pumping Well:
SVE3 10 Feet
VW6S Open Interval 3-5 Ft Below Ground Surface
VW6Int Open Interval 8-10 Ft Below Ground Surface
VW6D Open Interval 13-15 Ft Below Ground Surface

APPENDIX G

TO-15 ANALYTICAL REPORT

(ON CD)

ANALYTICAL REPORT

Job Number: 200-10443-1

SDG Number: 200-10443

Job Description: Congress Street

For:
CHA Inc
3 Winners Circle PO BOX 5269
Albany, NY 12205-0269

Attention: Mr. Bryon Blaydes

Sara Goff

Approved for release.
Sara S Goff
Project Manager I
4/30/2012 1:48 PM

Designee for
Don C Dawicki
Customer Service Manager
don.dawicki@testamericainc.com
04/30/2012

TestAmerica Laboratories, Inc.
TestAmerica Burlington   30 Community Drive, Suite 11, South Burlington, VT 05403
Tel (802) 660-1990 Fax (802) 660-1919 www.testamericainc.com

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CASE NARRATIVE

Client: CHA Inc

Project: Congress Street

Report Number: 200-10443-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 04/20/2012; the samples arrived in good condition. The container label for the following sample(s) did not match the information listed on the Chain-of-Custody (COC): SVE 2. The container labels list a collection time of 1440. The COC lists the collection stop time as 1140, which was used for login. The container label for the following sample(s) did not match the information listed on the Chain-of-Custody (COC): SVE 3A, SVE 3B. The container labels list only the collection start time. The collection stop time from the COC was used for login.

VOLATILE ORGANIC COMPOUNDS

Samples SVE 2, SVE 3A and SVE 3B were analyzed for Volatile Organic Compounds in accordance with EPA Method TO-15. The samples were analyzed on 04/26/2012.

Sample SVE 3B[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the VOC analyses.

All quality control parameters were within the acceptance limits.

AIR - GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-10443-1

SDG No.: 200-10443

Instrument ID: B.i Analysis Batch Number: 37514

Lab Sample ID: IC 200-37514/4 Client Sample ID:

Date Analyzed: 04/23/12 19:07 Lab File ID: bkm004.d GC Column: RTX-624 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Methyl tert-butyl ether	7.25	Peak not found by the data system	klp	04/25/12 14:16

Lab Sample ID: IC 200-37514/10 Client Sample ID:

Date Analyzed: 04/24/12 00:20 Lab File ID: bkm010.d GC Column: RTX-624 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzene	10.01	Baseline event	klp	04/25/12 14:12

AIR - GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Burlington Job No.: 200-10443-1

SDG No.: 200-10443

Instrument ID: B.i Analysis Batch Number: 37718

Lab Sample ID: 200-10443-3 Client Sample ID: SVE 3B

Date Analyzed: 04/26/12 19:38 Lab File ID: bkmc007.d GC Column: RTX-624 ID: 0.32(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
4-Ethyltoluene	16.53	Analyte misidentified by the data system	ahk	04/26/12 20:38

TO-15

SAMPLE SUMMARY

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
200-10443-1	SVE 2	Air	04/17/2012 1140	04/20/2012 1015
200-10443-2	SVE 3A	Air	04/18/2012 1147	04/20/2012 1015
200-10443-3	SVE 3B	Air	04/18/2012 1315	04/20/2012 1015

EXECUTIVE SUMMARY - Detections

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-10443-1	**SVE 2**					
n-Butane		5.6		5.0	ppb v/v	TO-15
n-Butane		13		12	ug/m3	TO-15
n-Hexane		2.9		2.0	ppb v/v	TO-15
n-Hexane		10		7.0	ug/m3	TO-15
Cyclohexane		5.2		2.0	ppb v/v	TO-15
Cyclohexane		18		6.9	ug/m3	TO-15
2,2,4-Trimethylpentane		2.4		2.0	ppb v/v	TO-15
2,2,4-Trimethylpentane		11		9.3	ug/m3	TO-15
n-Heptane		2.4		2.0	ppb v/v	TO-15
n-Heptane		9.9		8.2	ug/m3	TO-15
Toluene		3.0		2.0	ppb v/v	TO-15
Toluene		11		7.5	ug/m3	TO-15
Ethylbenzene		2.8		2.0	ppb v/v	TO-15
Ethylbenzene		12		8.7	ug/m3	TO-15
Xylene (total)		3.4		2.0	ppb v/v	TO-15
Xylene (total)		15		8.7	ug/m3	TO-15
200-10443-2	**SVE 3A**					
Ethylbenzene		21		2.0	ppb v/v	TO-15
Ethylbenzene		92		8.7	ug/m3	TO-15
m,p-Xylene		58		5.0	ppb v/v	TO-15
m,p-Xylene		250		22	ug/m3	TO-15
Xylene (total)		59		2.0	ppb v/v	TO-15
Xylene (total)		250		8.7	ug/m3	TO-15
Cumene		2.1		2.0	ppb v/v	TO-15
Cumene		11		9.8	ug/m3	TO-15

EXECUTIVE SUMMARY - Detections

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-10443-3	**SVE 3B**					
Cyclohexane		4.5		4.0	ppb v/v	TO-15
Cyclohexane		16		14	ug/m3	TO-15
n-Heptane		12		4.0	ppb v/v	TO-15
n-Heptane		48		16	ug/m3	TO-15
Ethylbenzene		300		4.0	ppb v/v	TO-15
Ethylbenzene		1300		17	ug/m3	TO-15
m,p-Xylene		930		9.9	ppb v/v	TO-15
m,p-Xylene		4000		43	ug/m3	TO-15
Xylene (total)		930		4.0	ppb v/v	TO-15
Xylene (total)		4000		17	ug/m3	TO-15
Cumene		27		4.0	ppb v/v	TO-15
Cumene		130		19	ug/m3	TO-15
n-Propylbenzene		6.8		4.0	ppb v/v	TO-15
n-Propylbenzene		33		19	ug/m3	TO-15
1,3,5-Trimethylbenzene		5.6		4.0	ppb v/v	TO-15
1,3,5-Trimethylbenzene		28		19	ug/m3	TO-15
1,2,4-Trimethylbenzene		4.2		4.0	ppb v/v	TO-15
1,2,4-Trimethylbenzene		21		19	ug/m3	TO-15

METHOD SUMMARY

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Description	Lab Location	Method	Preparation Method
Matrix Air			
Volatile Organic Compounds in Ambient Air	TAL BUR	EPA TO-15	
Collection via Summa Canister	TAL BUR		Summa Canister

Lab References:

TAL BUR = TestAmerica Burlington

Method References:

EPA = US Environmental Protection Agency

METHOD / ANALYST SUMMARY

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Method	Analyst	Analyst ID
EPA TO-15	Keene, Angela H	AHK

Analytical Data

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Client Sample ID: **SVE 2**

Lab Sample ID: 200-10443-1
Client Matrix: Air

Date Sampled: 04/17/2012 1140
Date Received: 04/20/2012 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-37718	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkmc005.d
Dilution:	10			Initial Weight/Volume:	20 mL
Analysis Date:	04/26/2012 1753			Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1753			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	5.0	U	5.0
Freon 22	5.0	U	5.0
1,2-Dichlorotetrafluoroethane	2.0	U	2.0
Chloromethane	5.0	U	5.0
n-Butane	5.6		5.0
Vinyl chloride	2.0	U	2.0
1,3-Butadiene	2.0	U	2.0
Bromomethane	2.0	U	2.0
Chloroethane	5.0	U	5.0
Bromoethene(Vinyl Bromide)	2.0	U	2.0
Trichlorofluoromethane	2.0	U	2.0
Freon TF	2.0	U	2.0
1,1-Dichloroethene	2.0	U	2.0
Acetone	50	U	50
Isopropyl alcohol	50	U	50
Carbon disulfide	5.0	U	5.0
3-Chloropropene	5.0	U	5.0
Methylene Chloride	5.0	U	5.0
tert-Butyl alcohol	50	U	50
Methyl tert-butyl ether	2.0	U	2.0
trans-1,2-Dichloroethene	2.0	U	2.0
n-Hexane	2.9		2.0
1,1-Dichloroethane	2.0	U	2.0
Methyl Ethyl Ketone	5.0	U	5.0
cis-1,2-Dichloroethene	2.0	U	2.0
1,2-Dichloroethene, Total	2.0	U	2.0
Chloroform	2.0	U	2.0
Tetrahydrofuran	50	U	50
1,1,1-Trichloroethane	2.0	U	2.0
Cyclohexane	5.2		2.0
Carbon tetrachloride	2.0	U	2.0
2,2,4-Trimethylpentane	2.4		2.0
Benzene	2.0	U	2.0
1,2-Dichloroethane	2.0	U	2.0
n-Heptane	2.4		2.0
Trichloroethene	2.0	U	2.0
Methyl methacrylate	5.0	U	5.0
1,2-Dichloropropane	2.0	U	2.0
1,4-Dioxane	50	U	50
Bromodichloromethane	2.0	U	2.0
cis-1,3-Dichloropropene	2.0	U	2.0
methyl isobutyl ketone	5.0	U	5.0
Toluene	3.0		2.0
trans-1,3-Dichloropropene	2.0	U	2.0
1,1,2-Trichloroethane	2.0	U	2.0
Tetrachloroethene	2.0	U	2.0

Analytical Data

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Client Sample ID: **SVE 2**

Lab Sample ID: 200-10443-1
Client Matrix: Air

Date Sampled: 04/17/2012 1140
Date Received: 04/20/2012 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-37718	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkmc005.d
Dilution:	10			Initial Weight/Volume:	20 mL
Analysis Date:	04/26/2012 1753			Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1753			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Methyl Butyl Ketone (2-Hexanone)	5.0	U	5.0
Dibromochloromethane	2.0	U	2.0
1,2-Dibromoethane	2.0	U	2.0
Chlorobenzene	2.0	U	2.0
Ethylbenzene	2.8		2.0
m,p-Xylene	5.0	U	5.0
Xylene, o-	2.0	U	2.0
Xylene (total)	3.4		2.0
Styrene	2.0	U	2.0
Bromoform	2.0	U	2.0
Cumene	2.0	U	2.0
1,1,2,2-Tetrachloroethane	2.0	U	2.0
n-Propylbenzene	2.0	U	2.0
4-Ethyltoluene	2.0	U	2.0
1,3,5-Trimethylbenzene	2.0	U	2.0
2-Chlorotoluene	2.0	U	2.0
tert-Butylbenzene	2.0	U	2.0
1,2,4-Trimethylbenzene	2.0	U	2.0
sec-Butylbenzene	2.0	U	2.0
4-Isopropyltoluene	2.0	U	2.0
1,3-Dichlorobenzene	2.0	U	2.0
1,4-Dichlorobenzene	2.0	U	2.0
Benzyl chloride	2.0	U	2.0
n-Butylbenzene	2.0	U	2.0
1,2-Dichlorobenzene	2.0	U	2.0
1,2,4-Trichlorobenzene	5.0	U	5.0
Hexachlorobutadiene	2.0	U	2.0
Naphthalene	5.0	U	5.0

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	25	U	25
Freon 22	18	U	18
1,2-Dichlorotetrafluoroethane	14	U	14
Chloromethane	10	U	10
n-Butane	13		12
Vinyl chloride	5.1	U	5.1
1,3-Butadiene	4.4	U	4.4
Bromomethane	7.8	U	7.8
Chloroethane	13	U	13
Bromoethene(Vinyl Bromide)	8.7	U	8.7
Trichlorofluoromethane	11	U	11
Freon TF	15	U	15
1,1-Dichloroethene	7.9	U	7.9
Acetone	120	U	120
Isopropyl alcohol	120	U	120
Carbon disulfide	16	U	16

Analytical Data

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Client Sample ID: **SVE 2**

Lab Sample ID: 200-10443-1
Client Matrix: Air

Date Sampled: 04/17/2012 1140
Date Received: 04/20/2012 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-37718	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkmc005.d
Dilution:	10			Initial Weight/Volume:	20 mL
Analysis Date:	04/26/2012 1753			Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1753			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
3-Chloropropene	16	U	16
Methylene Chloride	17	U	17
tert-Butyl alcohol	150	U	150
Methyl tert-butyl ether	7.2	U	7.2
trans-1,2-Dichloroethene	7.9	U	7.9
n-Hexane	10		7.0
1,1-Dichloroethane	8.1	U	8.1
Methyl Ethyl Ketone	15	U	15
cis-1,2-Dichloroethene	7.9	U	7.9
1,2-Dichloroethene, Total	7.9	U	7.9
Chloroform	9.8	U	9.8
Tetrahydrofuran	150	U	150
1,1,1-Trichloroethane	11	U	11
Cyclohexane	18		6.9
Carbon tetrachloride	13	U	13
2,2,4-Trimethylpentane	11		9.3
Benzene	6.4	U	6.4
1,2-Dichloroethane	8.1	U	8.1
n-Heptane	9.9		8.2
Trichloroethene	11	U	11
Methyl methacrylate	20	U	20
1,2-Dichloropropane	9.2	U	9.2
1,4-Dioxane	180	U	180
Bromodichloromethane	13	U	13
cis-1,3-Dichloropropene	9.1	U	9.1
methyl isobutyl ketone	20	U	20
Toluene	11		7.5
trans-1,3-Dichloropropene	9.1	U	9.1
1,1,2-Trichloroethane	11	U	11
Tetrachloroethene	14	U	14
Methyl Butyl Ketone (2-Hexanone)	20	U	20
Dibromochloromethane	17	U	17
1,2-Dibromoethane	15	U	15
Chlorobenzene	9.2	U	9.2
Ethylbenzene	12		8.7
m,p-Xylene	22	U	22
Xylene, o-	8.7	U	8.7
Xylene (total)	15		8.7
Styrene	8.5	U	8.5
Bromoform	21	U	21
Cumene	9.8	U	9.8
1,1,2,2-Tetrachloroethane	14	U	14
n-Propylbenzene	9.8	U	9.8
4-Ethyltoluene	9.8	U	9.8
1,3,5-Trimethylbenzene	9.8	U	9.8
2-Chlorotoluene	10	U	10

Analytical Data

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Client Sample ID: **SVE 2**

Lab Sample ID: 200-10443-1
Client Matrix: Air

Date Sampled: 04/17/2012 1140
Date Received: 04/20/2012 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-37718	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkmc005.d
Dilution:	10			Initial Weight/Volume:	20 mL
Analysis Date:	04/26/2012 1753			Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1753			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
tert-Butylbenzene	11	U	11
1,2,4-Trimethylbenzene	9.8	U	9.8
sec-Butylbenzene	11	U	11
4-Isopropyltoluene	11	U	11
1,3-Dichlorobenzene	12	U	12
1,4-Dichlorobenzene	12	U	12
Benzyl chloride	10	U	10
n-Butylbenzene	11	U	11
1,2-Dichlorobenzene	12	U	12
1,2,4-Trichlorobenzene	37	U	37
Hexachlorobutadiene	21	U	21
Naphthalene	26	U	26

Analytical Data

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Client Sample ID:	**SVE 3A**		
Lab Sample ID:	200-10443-2	Date Sampled:	04/18/2012 1147
Client Matrix:	Air	Date Received:	04/20/2012 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-37718	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkmc006.d
Dilution:	10			Initial Weight/Volume:	20 mL
Analysis Date:	04/26/2012 1846			Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1846			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	5.0	U	5.0
Freon 22	5.0	U	5.0
1,2-Dichlorotetrafluoroethane	2.0	U	2.0
Chloromethane	5.0	U	5.0
n-Butane	5.0	U	5.0
Vinyl chloride	2.0	U	2.0
1,3-Butadiene	2.0	U	2.0
Bromomethane	2.0	U	2.0
Chloroethane	5.0	U	5.0
Bromoethene(Vinyl Bromide)	2.0	U	2.0
Trichlorofluoromethane	2.0	U	2.0
Freon TF	2.0	U	2.0
1,1-Dichloroethene	2.0	U	2.0
Acetone	50	U	50
Isopropyl alcohol	50	U	50
Carbon disulfide	5.0	U	5.0
3-Chloropropene	5.0	U	5.0
Methylene Chloride	5.0	U	5.0
tert-Butyl alcohol	50	U	50
Methyl tert-butyl ether	2.0	U	2.0
trans-1,2-Dichloroethene	2.0	U	2.0
n-Hexane	2.0	U	2.0
1,1-Dichloroethane	2.0	U	2.0
Methyl Ethyl Ketone	5.0	U	5.0
cis-1,2-Dichloroethene	2.0	U	2.0
1,2-Dichloroethene, Total	2.0	U	2.0
Chloroform	2.0	U	2.0
Tetrahydrofuran	50	U	50
1,1,1-Trichloroethane	2.0	U	2.0
Cyclohexane	2.0	U	2.0
Carbon tetrachloride	2.0	U	2.0
2,2,4-Trimethylpentane	2.0	U	2.0
Benzene	2.0	U	2.0
1,2-Dichloroethane	2.0	U	2.0
n-Heptane	2.0	U	2.0
Trichloroethene	2.0	U	2.0
Methyl methacrylate	5.0	U	5.0
1,2-Dichloropropane	2.0	U	2.0
1,4-Dioxane	50	U	50
Bromodichloromethane	2.0	U	2.0
cis-1,3-Dichloropropene	2.0	U	2.0
methyl isobutyl ketone	5.0	U	5.0
Toluene	2.0	U	2.0
trans-1,3-Dichloropropene	2.0	U	2.0
1,1,2-Trichloroethane	2.0	U	2.0
Tetrachloroethene	2.0	U	2.0

Analytical Data

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Client Sample ID: **SVE 3A**

Lab Sample ID: 200-10443-2
Client Matrix: Air

Date Sampled: 04/18/2012 1147
Date Received: 04/20/2012 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-37718	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkmc006.d
Dilution:	10			Initial Weight/Volume:	20 mL
Analysis Date:	04/26/2012 1846			Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1846			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Methyl Butyl Ketone (2-Hexanone)	5.0	U	5.0
Dibromochloromethane	2.0	U	2.0
1,2-Dibromoethane	2.0	U	2.0
Chlorobenzene	2.0	U	2.0
Ethylbenzene	21		2.0
m,p-Xylene	58		5.0
Xylene, o-	2.0	U	2.0
Xylene (total)	59		2.0
Styrene	2.0	U	2.0
Bromoform	2.0	U	2.0
Cumene	2.1		2.0
1,1,2,2-Tetrachloroethane	2.0	U	2.0
n-Propylbenzene	2.0	U	2.0
4-Ethyltoluene	2.0	U	2.0
1,3,5-Trimethylbenzene	2.0	U	2.0
2-Chlorotoluene	2.0	U	2.0
tert-Butylbenzene	2.0	U	2.0
1,2,4-Trimethylbenzene	2.0	U	2.0
sec-Butylbenzene	2.0	U	2.0
4-Isopropyltoluene	2.0	U	2.0
1,3-Dichlorobenzene	2.0	U	2.0
1,4-Dichlorobenzene	2.0	U	2.0
Benzyl chloride	2.0	U	2.0
n-Butylbenzene	2.0	U	2.0
1,2-Dichlorobenzene	2.0	U	2.0
1,2,4-Trichlorobenzene	5.0	U	5.0
Hexachlorobutadiene	2.0	U	2.0
Naphthalene	5.0	U	5.0

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	25	U	25
Freon 22	18	U	18
1,2-Dichlorotetrafluoroethane	14	U	14
Chloromethane	10	U	10
n-Butane	12	U	12
Vinyl chloride	5.1	U	5.1
1,3-Butadiene	4.4	U	4.4
Bromomethane	7.8	U	7.8
Chloroethane	13	U	13
Bromoethene(Vinyl Bromide)	8.7	U	8.7
Trichlorofluoromethane	11	U	11
Freon TF	15	U	15
1,1-Dichloroethene	7.9	U	7.9
Acetone	120	U	120
Isopropyl alcohol	120	U	120
Carbon disulfide	16	U	16

Analytical Data

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Client Sample ID: **SVE 3A**

Lab Sample ID:	200-10443-2	Date Sampled:	04/18/2012 1147
Client Matrix:	Air	Date Received:	04/20/2012 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-37718	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkmc006.d
Dilution:	10			Initial Weight/Volume:	20 mL
Analysis Date:	04/26/2012 1846			Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1846			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
3-Chloropropene	16	U	16
Methylene Chloride	17	U	17
tert-Butyl alcohol	150	U	150
Methyl tert-butyl ether	7.2	U	7.2
trans-1,2-Dichloroethene	7.9	U	7.9
n-Hexane	7.0	U	7.0
1,1-Dichloroethane	8.1	U	8.1
Methyl Ethyl Ketone	15	U	15
cis-1,2-Dichloroethene	7.9	U	7.9
1,2-Dichloroethene, Total	7.9	U	7.9
Chloroform	9.8	U	9.8
Tetrahydrofuran	150	U	150
1,1,1-Trichloroethane	11	U	11
Cyclohexane	6.9	U	6.9
Carbon tetrachloride	13	U	13
2,2,4-Trimethylpentane	9.3	U	9.3
Benzene	6.4	U	6.4
1,2-Dichloroethane	8.1	U	8.1
n-Heptane	8.2	U	8.2
Trichloroethene	11	U	11
Methyl methacrylate	20	U	20
1,2-Dichloropropane	9.2	U	9.2
1,4-Dioxane	180	U	180
Bromodichloromethane	13	U	13
cis-1,3-Dichloropropene	9.1	U	9.1
methyl isobutyl ketone	20	U	20
Toluene	7.5	U	7.5
trans-1,3-Dichloropropene	9.1	U	9.1
1,1,2-Trichloroethane	11	U	11
Tetrachloroethene	14	U	14
Methyl Butyl Ketone (2-Hexanone)	20	U	20
Dibromochloromethane	17	U	17
1,2-Dibromoethane	15	U	15
Chlorobenzene	9.2	U	9.2
Ethylbenzene	92		8.7
m,p-Xylene	250		22
Xylene, o-	8.7	U	8.7
Xylene (total)	250		8.7
Styrene	8.5	U	8.5
Bromoform	21	U	21
Cumene	11		9.8
1,1,2,2-Tetrachloroethane	14	U	14
n-Propylbenzene	9.8	U	9.8
4-Ethyltoluene	9.8	U	9.8
1,3,5-Trimethylbenzene	9.8	U	9.8
2-Chlorotoluene	10	U	10

Analytical Data

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Client Sample ID: **SVE 3A**

Lab Sample ID: 200-10443-2
Client Matrix: Air

Date Sampled: 04/18/2012 1147
Date Received: 04/20/2012 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-37718	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkmc006.d
Dilution:	10			Initial Weight/Volume:	20 mL
Analysis Date:	04/26/2012 1846			Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1846			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
tert-Butylbenzene	11	U	11
1,2,4-Trimethylbenzene	9.8	U	9.8
sec-Butylbenzene	11	U	11
4-Isopropyltoluene	11	U	11
1,3-Dichlorobenzene	12	U	12
1,4-Dichlorobenzene	12	U	12
Benzyl chloride	10	U	10
n-Butylbenzene	11	U	11
1,2-Dichlorobenzene	12	U	12
1,2,4-Trichlorobenzene	37	U	37
Hexachlorobutadiene	21	U	21
Naphthalene	26	U	26

Analytical Data

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Client Sample ID: **SVE 3B**

Lab Sample ID: 200-10443-3
Client Matrix: Air

Date Sampled: 04/18/2012 1315
Date Received: 04/20/2012 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-37718	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkmc007.d
Dilution:	19.8			Initial Weight/Volume:	47 mL
Analysis Date:	04/26/2012 1938			Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1938			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Dichlorodifluoromethane	9.9	U	9.9
Freon 22	9.9	U	9.9
1,2-Dichlorotetrafluoroethane	4.0	U	4.0
Chloromethane	9.9	U	9.9
n-Butane	9.9	U	9.9
Vinyl chloride	4.0	U	4.0
1,3-Butadiene	4.0	U	4.0
Bromomethane	4.0	U	4.0
Chloroethane	9.9	U	9.9
Bromoethene(Vinyl Bromide)	4.0	U	4.0
Trichlorofluoromethane	4.0	U	4.0
Freon TF	4.0	U	4.0
1,1-Dichloroethene	4.0	U	4.0
Acetone	99	U	99
Isopropyl alcohol	99	U	99
Carbon disulfide	9.9	U	9.9
3-Chloropropene	9.9	U	9.9
Methylene Chloride	9.9	U	9.9
tert-Butyl alcohol	99	U	99
Methyl tert-butyl ether	4.0	U	4.0
trans-1,2-Dichloroethene	4.0	U	4.0
n-Hexane	4.0	U	4.0
1,1-Dichloroethane	4.0	U	4.0
Methyl Ethyl Ketone	9.9	U	9.9
cis-1,2-Dichloroethene	4.0	U	4.0
1,2-Dichloroethene, Total	4.0	U	4.0
Chloroform	4.0	U	4.0
Tetrahydrofuran	99	U	99
1,1,1-Trichloroethane	4.0	U	4.0
Cyclohexane	4.5		4.0
Carbon tetrachloride	4.0	U	4.0
2,2,4-Trimethylpentane	4.0	U	4.0
Benzene	4.0	U	4.0
1,2-Dichloroethane	4.0	U	4.0
n-Heptane	12		4.0
Trichloroethene	4.0	U	4.0
Methyl methacrylate	9.9	U	9.9
1,2-Dichloropropane	4.0	U	4.0
1,4-Dioxane	99	U	99
Bromodichloromethane	4.0	U	4.0
cis-1,3-Dichloropropene	4.0	U	4.0
methyl isobutyl ketone	9.9	U	9.9
Toluene	4.0	U	4.0
trans-1,3-Dichloropropene	4.0	U	4.0
1,1,2-Trichloroethane	4.0	U	4.0
Tetrachloroethene	4.0	U	4.0

Analytical Data

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Client Sample ID: **SVE 3B**

Lab Sample ID: 200-10443-3
Client Matrix: Air

Date Sampled: 04/18/2012 1315
Date Received: 04/20/2012 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-37718	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkmc007.d
Dilution:	19.8			Initial Weight/Volume:	47 mL
Analysis Date:	04/26/2012 1938			Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1938			Injection Volume:	200 mL

Analyte	Result (ppb v/v)	Qualifier	RL
Methyl Butyl Ketone (2-Hexanone)	9.9	U	9.9
Dibromochloromethane	4.0	U	4.0
1,2-Dibromoethane	4.0	U	4.0
Chlorobenzene	4.0	U	4.0
Ethylbenzene	300		4.0
m,p-Xylene	930		9.9
Xylene, o-	4.0	U	4.0
Xylene (total)	930		4.0
Styrene	4.0	U	4.0
Bromoform	4.0	U	4.0
Cumene	27		4.0
1,1,2,2-Tetrachloroethane	4.0	U	4.0
n-Propylbenzene	6.8		4.0
4-Ethyltoluene	4.0	U	4.0
1,3,5-Trimethylbenzene	5.6		4.0
2-Chlorotoluene	4.0	U	4.0
tert-Butylbenzene	4.0	U	4.0
1,2,4-Trimethylbenzene	4.2		4.0
sec-Butylbenzene	4.0	U	4.0
4-Isopropyltoluene	4.0	U	4.0
1,3-Dichlorobenzene	4.0	U	4.0
1,4-Dichlorobenzene	4.0	U	4.0
Benzyl chloride	4.0	U	4.0
n-Butylbenzene	4.0	U	4.0
1,2-Dichlorobenzene	4.0	U	4.0
1,2,4-Trichlorobenzene	9.9	U	9.9
Hexachlorobutadiene	4.0	U	4.0
Naphthalene	9.9	U	9.9

Analyte	Result (ug/m3)	Qualifier	RL
Dichlorodifluoromethane	49	U	49
Freon 22	35	U	35
1,2-Dichlorotetrafluoroethane	28	U	28
Chloromethane	20	U	20
n-Butane	24	U	24
Vinyl chloride	10	U	10
1,3-Butadiene	8.8	U	8.8
Bromomethane	15	U	15
Chloroethane	26	U	26
Bromoethene(Vinyl Bromide)	17	U	17
Trichlorofluoromethane	22	U	22
Freon TF	30	U	30
1,1-Dichloroethene	16	U	16
Acetone	240	U	240
Isopropyl alcohol	240	U	240
Carbon disulfide	31	U	31

Analytical Data

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Client Sample ID: **SVE 3B**

Lab Sample ID:	200-10443-3	Date Sampled:	04/18/2012 1315
Client Matrix:	Air	Date Received:	04/20/2012 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-37718	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkmc007.d
Dilution:	19.8			Initial Weight/Volume:	47 mL
Analysis Date:	04/26/2012 1938			Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1938			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
3-Chloropropene	31	U	31
Methylene Chloride	34	U	34
tert-Butyl alcohol	300	U	300
Methyl tert-butyl ether	14	U	14
trans-1,2-Dichloroethene	16	U	16
n-Hexane	14	U	14
1,1-Dichloroethane	16	U	16
Methyl Ethyl Ketone	29	U	29
cis-1,2-Dichloroethene	16	U	16
1,2-Dichloroethene, Total	16	U	16
Chloroform	19	U	19
Tetrahydrofuran	290	U	290
1,1,1-Trichloroethane	22	U	22
Cyclohexane	16		14
Carbon tetrachloride	25	U	25
2,2,4-Trimethylpentane	19	U	19
Benzene	13	U	13
1,2-Dichloroethane	16	U	16
n-Heptane	48		16
Trichloroethene	21	U	21
Methyl methacrylate	41	U	41
1,2-Dichloropropane	18	U	18
1,4-Dioxane	360	U	360
Bromodichloromethane	27	U	27
cis-1,3-Dichloropropene	18	U	18
methyl isobutyl ketone	41	U	41
Toluene	15	U	15
trans-1,3-Dichloropropene	18	U	18
1,1,2-Trichloroethane	22	U	22
Tetrachloroethene	27	U	27
Methyl Butyl Ketone (2-Hexanone)	41	U	41
Dibromochloromethane	34	U	34
1,2-Dibromoethane	30	U	30
Chlorobenzene	18	U	18
Ethylbenzene	1300		17
m,p-Xylene	4000		43
Xylene, o-	17	U	17
Xylene (total)	4000		17
Styrene	17	U	17
Bromoform	41	U	41
Cumene	130		19
1,1,2,2-Tetrachloroethane	27	U	27
n-Propylbenzene	33		19
4-Ethyltoluene	19	U	19
1,3,5-Trimethylbenzene	28		19
2-Chlorotoluene	21	U	21

Analytical Data

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Client Sample ID: **SVE 3B**

Lab Sample ID: 200-10443-3
Client Matrix: Air

Date Sampled: 04/18/2012 1315
Date Received: 04/20/2012 1015

TO-15 Volatile Organic Compounds in Ambient Air

Analysis Method:	TO-15	Analysis Batch:	200-37718	Instrument ID:	B.i
Prep Method:	Summa Canister	Prep Batch:	N/A	Lab File ID:	bkmc007.d
Dilution:	19.8			Initial Weight/Volume:	47 mL
Analysis Date:	04/26/2012 1938			Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1938			Injection Volume:	200 mL

Analyte	Result (ug/m3)	Qualifier	RL
tert-Butylbenzene	22	U	22
1,2,4-Trimethylbenzene	21		19
sec-Butylbenzene	22	U	22
4-Isopropyltoluene	22	U	22
1,3-Dichlorobenzene	24	U	24
1,4-Dichlorobenzene	24	U	24
Benzyl chloride	21	U	21
n-Butylbenzene	22	U	22
1,2-Dichlorobenzene	24	U	24
1,2,4-Trichlorobenzene	73	U	73
Hexachlorobutadiene	42	U	42
Naphthalene	52	U	52

Method Blank - Batch: 200-37718

Method: TO-15
Preparation: Summa Canister

Lab Sample ID:	MB 200-37718/4	Analysis Batch:	200-37718	Instrument ID:	B.i
Client Matrix:	Air	Prep Batch:	N/A	Lab File ID:	bkmc004.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	200 mL
Analysis Date:	04/26/2012 1701	Units:	ppb v/v	Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1701			Injection Volume:	200 mL
Leach Date:	N/A				

Analyte	Result	Qual	RL
Dichlorodifluoromethane	0.50	U	0.50
Freon 22	0.50	U	0.50
1,2-Dichlorotetrafluoroethane	0.20	U	0.20
Chloromethane	0.50	U	0.50
n-Butane	0.50	U	0.50
Vinyl chloride	0.20	U	0.20
1,3-Butadiene	0.20	U	0.20
Bromomethane	0.20	U	0.20
Chloroethane	0.50	U	0.50
Bromoethene(Vinyl Bromide)	0.20	U	0.20
Trichlorofluoromethane	0.20	U	0.20
Freon TF	0.20	U	0.20
1,1-Dichloroethene	0.20	U	0.20
Acetone	5.0	U	5.0
Isopropyl alcohol	5.0	U	5.0
Carbon disulfide	0.50	U	0.50
3-Chloropropene	0.50	U	0.50
Methylene Chloride	0.50	U	0.50
tert-Butyl alcohol	5.0	U	5.0
Methyl tert-butyl ether	0.20	U	0.20
trans-1,2-Dichloroethene	0.20	U	0.20
n-Hexane	0.20	U	0.20
1,1-Dichloroethane	0.20	U	0.20
Methyl Ethyl Ketone	0.50	U	0.50
cis-1,2-Dichloroethene	0.20	U	0.20
1,2-Dichloroethene, Total	0.20	U	0.20
Chloroform	0.20	U	0.20
Tetrahydrofuran	5.0	U	5.0
1,1,1-Trichloroethane	0.20	U	0.20
Cyclohexane	0.20	U	0.20
Carbon tetrachloride	0.20	U	0.20
2,2,4-Trimethylpentane	0.20	U	0.20
Benzene	0.20	U	0.20
1,2-Dichloroethane	0.20	U	0.20
n-Heptane	0.20	U	0.20
Trichloroethene	0.20	U	0.20
Methyl methacrylate	0.50	U	0.50
1,2-Dichloropropane	0.20	U	0.20
1,4-Dioxane	5.0	U	5.0
Bromodichloromethane	0.20	U	0.20
cis-1,3-Dichloropropene	0.20	U	0.20
methyl isobutyl ketone	0.50	U	0.50
Toluene	0.20	U	0.20
trans-1,3-Dichloropropene	0.20	U	0.20
1,1,2-Trichloroethane	0.20	U	0.20

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Method Blank - Batch: 200-37718

Method: TO-15
Preparation: Summa Canister

Lab Sample ID:	MB 200-37718/4	Analysis Batch:	200-37718	Instrument ID:	B.i
Client Matrix:	Air	Prep Batch:	N/A	Lab File ID:	bkmc004.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	200 mL
Analysis Date:	04/26/2012 1701	Units:	ppb v/v	Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1701			Injection Volume:	200 mL
Leach Date:	N/A				

Analyte	Result	Qual	RL
Tetrachloroethene	0.20	U	0.20
Methyl Butyl Ketone (2-Hexanone)	0.50	U	0.50
Dibromochloromethane	0.20	U	0.20
1,2-Dibromoethane	0.20	U	0.20
Chlorobenzene	0.20	U	0.20
Ethylbenzene	0.20	U	0.20
m,p-Xylene	0.50	U	0.50
Xylene, o-	0.20	U	0.20
Xylene (total)	0.20	U	0.20
Styrene	0.20	U	0.20
Bromoform	0.20	U	0.20
Cumene	0.20	U	0.20
1,1,2,2-Tetrachloroethane	0.20	U	0.20
n-Propylbenzene	0.20	U	0.20
4-Ethyltoluene	0.20	U	0.20
1,3,5-Trimethylbenzene	0.20	U	0.20
2-Chlorotoluene	0.20	U	0.20
tert-Butylbenzene	0.20	U	0.20
1,2,4-Trimethylbenzene	0.20	U	0.20
sec-Butylbenzene	0.20	U	0.20
4-Isopropyltoluene	0.20	U	0.20
1,3-Dichlorobenzene	0.20	U	0.20
1,4-Dichlorobenzene	0.20	U	0.20
Benzyl chloride	0.20	U	0.20
n-Butylbenzene	0.20	U	0.20
1,2-Dichlorobenzene	0.20	U	0.20
1,2,4-Trichlorobenzene	0.50	U	0.50
Hexachlorobutadiene	0.20	U	0.20
Naphthalene	0.50	U	0.50

Quality Control Results

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Method Blank - Batch: 200-37718

Method: TO-15
Preparation: Summa Canister

Lab Sample ID:	MB 200-37718/4	Analysis Batch:	200-37718	Instrument ID:	B.i
Client Matrix:	Air	Prep Batch:	N/A	Lab File ID:	bkmc004.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	200 mL
Analysis Date:	04/26/2012 1701	Units:	ug/m3	Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1701			Injection Volume:	200 mL
Leach Date:	N/A				

Analyte	Result	Qual	RL
Dichlorodifluoromethane	2.5	U	2.5
Freon 22	1.8	U	1.8
1,2-Dichlorotetrafluoroethane	1.4	U	1.4
Chloromethane	1.0	U	1.0
n-Butane	1.2	U	1.2
Vinyl chloride	0.51	U	0.51
1,3-Butadiene	0.44	U	0.44
Bromomethane	0.78	U	0.78
Chloroethane	1.3	U	1.3
Bromoethene(Vinyl Bromide)	0.87	U	0.87
Trichlorofluoromethane	1.1	U	1.1
Freon TF	1.5	U	1.5
1,1-Dichloroethene	0.79	U	0.79
Acetone	12	U	12
Isopropyl alcohol	12	U	12
Carbon disulfide	1.6	U	1.6
3-Chloropropene	1.6	U	1.6
Methylene Chloride	1.7	U	1.7
tert-Butyl alcohol	15	U	15
Methyl tert-butyl ether	0.72	U	0.72
trans-1,2-Dichloroethene	0.79	U	0.79
n-Hexane	0.70	U	0.70
1,1-Dichloroethane	0.81	U	0.81
Methyl Ethyl Ketone	1.5	U	1.5
cis-1,2-Dichloroethene	0.79	U	0.79
1,2-Dichloroethene, Total	0.79	U	0.79
Chloroform	0.98	U	0.98
Tetrahydrofuran	15	U	15
1,1,1-Trichloroethane	1.1	U	1.1
Cyclohexane	0.69	U	0.69
Carbon tetrachloride	1.3	U	1.3
2,2,4-Trimethylpentane	0.93	U	0.93
Benzene	0.64	U	0.64
1,2-Dichloroethane	0.81	U	0.81
n-Heptane	0.82	U	0.82
Trichloroethene	1.1	U	1.1
Methyl methacrylate	2.0	U	2.0
1,2-Dichloropropane	0.92	U	0.92
1,4-Dioxane	18	U	18
Bromodichloromethane	1.3	U	1.3
cis-1,3-Dichloropropene	0.91	U	0.91
methyl isobutyl ketone	2.0	U	2.0
Toluene	0.75	U	0.75
trans-1,3-Dichloropropene	0.91	U	0.91
1,1,2-Trichloroethane	1.1	U	1.1

Quality Control Results

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Method Blank - Batch: 200-37718

Method: TO-15
Preparation: Summa Canister

Lab Sample ID:	MB 200-37718/4	Analysis Batch:	200-37718	Instrument ID:	B.i
Client Matrix:	Air	Prep Batch:	N/A	Lab File ID:	bkmc004.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	200 mL
Analysis Date:	04/26/2012 1701	Units:	ug/m3	Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1701			Injection Volume:	200 mL
Leach Date:	N/A				

Analyte	Result	Qual	RL
Tetrachloroethene	1.4	U	1.4
Methyl Butyl Ketone (2-Hexanone)	2.0	U	2.0
Dibromochloromethane	1.7	U	1.7
1,2-Dibromoethane	1.5	U	1.5
Chlorobenzene	0.92	U	0.92
Ethylbenzene	0.87	U	0.87
m,p-Xylene	2.2	U	2.2
Xylene, o-	0.87	U	0.87
Xylene (total)	0.87	U	0.87
Styrene	0.85	U	0.85
Bromoform	2.1	U	2.1
Cumene	0.98	U	0.98
1,1,2,2-Tetrachloroethane	1.4	U	1.4
n-Propylbenzene	0.98	U	0.98
4-Ethyltoluene	0.98	U	0.98
1,3,5-Trimethylbenzene	0.98	U	0.98
2-Chlorotoluene	1.0	U	1.0
tert-Butylbenzene	1.1	U	1.1
1,2,4-Trimethylbenzene	0.98	U	0.98
sec-Butylbenzene	1.1	U	1.1
4-Isopropyltoluene	1.1	U	1.1
1,3-Dichlorobenzene	1.2	U	1.2
1,4-Dichlorobenzene	1.2	U	1.2
Benzyl chloride	1.0	U	1.0
n-Butylbenzene	1.1	U	1.1
1,2-Dichlorobenzene	1.2	U	1.2
1,2,4-Trichlorobenzene	3.7	U	3.7
Hexachlorobutadiene	2.1	U	2.1
Naphthalene	2.6	U	2.6

Quality Control Results

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Lab Control Sample - Batch: 200-37718

Method: TO-15
Preparation: Summa Canister

Lab Sample ID:	LCS 200-37718/3	Analysis Batch:	200-37718	Instrument ID:	B.i
Client Matrix:	Air	Prep Batch:	N/A	Lab File ID:	bkmc003.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	200 mL
Analysis Date:	04/26/2012 1612	Units:	ppb v/v	Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1612			Injection Volume:	200 mL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dichlorodifluoromethane	10.0	9.84	98	70 - 130	
Freon 22	10.0	9.90	99	70 - 130	
1,2-Dichlorotetrafluoroethane	10.0	9.94	99	70 - 130	
Chloromethane	10.0	10.4	104	70 - 130	
n-Butane	10.0	10.0	100	70 - 130	
Vinyl chloride	10.0	10.3	103	70 - 130	
1,3-Butadiene	10.0	11.0	110	70 - 130	
Bromomethane	10.0	10.0	100	70 - 130	
Chloroethane	10.0	10.3	103	70 - 130	
Bromoethene(Vinyl Bromide)	10.0	10.6	106	70 - 130	
Trichlorofluoromethane	10.0	10.1	101	70 - 130	
Freon TF	10.0	11.2	112	70 - 130	
1,1-Dichloroethene	10.0	11.6	116	70 - 130	
Acetone	10.0	10.4	104	70 - 130	
Isopropyl alcohol	10.0	10.2	102	70 - 130	
Carbon disulfide	10.0	10.7	107	70 - 130	
3-Chloropropene	10.0	10.9	109	70 - 130	
Methylene Chloride	10.0	10.9	109	70 - 130	
tert-Butyl alcohol	10.0	10.1	101	70 - 130	
Methyl tert-butyl ether	10.0	10.8	108	70 - 130	
trans-1,2-Dichloroethene	10.0	10.7	107	70 - 130	
n-Hexane	10.0	10.7	107	70 - 130	
1,1-Dichloroethane	10.0	10.5	105	70 - 130	
Methyl Ethyl Ketone	10.0	9.93	99	70 - 130	
cis-1,2-Dichloroethene	10.0	10.8	108	70 - 130	
Chloroform	10.0	10.2	102	70 - 130	
Tetrahydrofuran	10.0	10.5	105	70 - 130	
1,1,1-Trichloroethane	10.0	10.4	104	70 - 130	
Cyclohexane	10.0	10.5	105	70 - 130	
Carbon tetrachloride	10.0	10.1	101	70 - 130	
2,2,4-Trimethylpentane	10.0	10.5	105	70 - 130	
Benzene	10.0	10.1	101	70 - 130	
1,2-Dichloroethane	10.0	10.2	103	70 - 130	
n-Heptane	10.0	10.3	103	70 - 130	
Trichloroethene	10.0	9.99	100	70 - 130	
Methyl methacrylate	10.0	10.3	103	70 - 130	
1,2-Dichloropropane	10.0	10.2	102	70 - 130	
1,4-Dioxane	10.0	9.86	99	70 - 130	
Bromodichloromethane	10.0	10.6	106	70 - 130	
cis-1,3-Dichloropropene	10.0	10.2	102	70 - 130	
methyl isobutyl ketone	10.0	10.4	105	70 - 130	
Toluene	10.0	10.1	101	70 - 130	
trans-1,3-Dichloropropene	10.0	10.4	104	70 - 130	
1,1,2-Trichloroethane	10.0	9.74	97	70 - 130	
Tetrachloroethene	10.0	10.1	101	70 - 130	
Methyl Butyl Ketone (2-Hexanone)	10.0	10.7	107	70 - 130	

Quality Control Results

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Lab Control Sample - Batch: 200-37718

Method: TO-15
Preparation: Summa Canister

Lab Sample ID:	LCS 200-37718/3	Analysis Batch:	200-37718	Instrument ID:	B.i
Client Matrix:	Air	Prep Batch:	N/A	Lab File ID:	bkmc003.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	200 mL
Analysis Date:	04/26/2012 1612	Units:	ppb v/v	Final Weight/Volume:	200 mL
Prep Date:	04/26/2012 1612			Injection Volume:	200 mL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dibromochloromethane	10.0	10.9	109	70 - 130	
1,2-Dibromoethane	10.0	10.1	101	70 - 130	
Chlorobenzene	10.0	9.93	99	70 - 130	
Ethylbenzene	10.0	10.1	102	70 - 130	
m,p-Xylene	20.0	20.4	102	70 - 130	
Xylene, o-	10.0	10.2	102	70 - 130	
Styrene	10.0	10.7	108	70 - 130	
Bromoform	10.0	11.2	112	70 - 130	
Cumene	10.0	10.5	105	70 - 130	
1,1,2,2-Tetrachloroethane	10.0	10.2	102	70 - 130	
n-Propylbenzene	10.0	10.5	105	70 - 130	
4-Ethyltoluene	10.0	10.7	107	70 - 130	
1,3,5-Trimethylbenzene	10.0	10.4	104	70 - 130	
2-Chlorotoluene	10.0	10.5	105	70 - 130	
tert-Butylbenzene	10.0	10.5	105	70 - 130	
1,2,4-Trimethylbenzene	10.0	10.2	102	70 - 130	
sec-Butylbenzene	10.0	10.5	105	70 - 130	
4-Isopropyltoluene	10.0	10.8	108	70 - 130	
1,3-Dichlorobenzene	10.0	10.0	100	70 - 130	
1,4-Dichlorobenzene	10.0	10.1	101	70 - 130	
Benzyl chloride	10.0	11.8	118	70 - 130	
n-Butylbenzene	10.0	10.8	108	70 - 130	
1,2-Dichlorobenzene	10.0	9.73	97	70 - 130	
1,2,4-Trichlorobenzene	10.0	10.6	106	70 - 130	
Hexachlorobutadiene	10.0	9.92	99	70 - 130	
Naphthalene	10.0	11.2	112	70 - 130	

DATA REPORTING QUALIFIERS

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

Lab Section	Qualifier	Description
Air - GC/MS VOA		
	U	Indicates the analyte was analyzed for but not detected.

Client: CHA Inc

Job Number: 200-10443-1
Sdg Number: 200-10443

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Air - GC/MS VOA					
Analysis Batch:200-37718					
LCS 200-37718/3	Lab Control Sample	T	Air	TO-15	
MB 200-37718/4	Method Blank	T	Air	TO-15	
200-10443-1	SVE 2	T	Air	TO-15	
200-10443-2	SVE 3A	T	Air	TO-15	
200-10443-3	SVE 3B	T	Air	TO-15	

Report Basis

T = Total

Laboratory Chronicle

Lab ID: 200-10443-1 **Client ID: SVE 2**

Sample Date/Time: 04/17/2012 11:40 Received Date/Time: 04/20/2012 10:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Summa Canister	200-10443-A-1		200-37718		04/26/2012 17:53	10	TAL BUR	AHK
A:TO-15	200-10443-A-1		200-37718		04/26/2012 17:53	10	TAL BUR	AHK

Lab ID: 200-10443-2 **Client ID: SVE 3A**

Sample Date/Time: 04/18/2012 11:47 Received Date/Time: 04/20/2012 10:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Summa Canister	200-10443-A-2		200-37718		04/26/2012 18:46	10	TAL BUR	AHK
A:TO-15	200-10443-A-2		200-37718		04/26/2012 18:46	10	TAL BUR	AHK

Lab ID: 200-10443-3 **Client ID: SVE 3B**

Sample Date/Time: 04/18/2012 13:15 Received Date/Time: 04/20/2012 10:15

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Summa Canister	200-10443-A-3		200-37718		04/26/2012 19:38	19.8	TAL BUR	AHK
A:TO-15	200-10443-A-3		200-37718		04/26/2012 19:38	19.8	TAL BUR	AHK

Lab ID: MB **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Summa Canister	MB 200-37718/4		200-37718		04/26/2012 17:01	1	TAL BUR	AHK
A:TO-15	MB 200-37718/4		200-37718		04/26/2012 17:01	1	TAL BUR	AHK

Lab ID: LCS **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:Summa Canister	LCS 200-37718/3		200-37718		04/26/2012 16:12	1	TAL BUR	AHK
A:TO-15	LCS 200-37718/3		200-37718		04/26/2012 16:12	1	TAL BUR	AHK

Lab References:
TAL BUR = TestAmerica Burlington

Certification Summary

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Burlington	ACLASS	DoD ELAP		ADE-1492
TestAmerica Burlington	Connecticut	State Program	1	PH-0751
TestAmerica Burlington	DE Haz. Subst. Cleanup Act	State Program	3	NA
TestAmerica Burlington	Florida	NELAC	4	E87467
TestAmerica Burlington	Louisiana	NELAC	6	176292
TestAmerica Burlington	Maine	State Program	1	VT00008
TestAmerica Burlington	Minnesota	NELAC	5	050-999-436
TestAmerica Burlington	New Hampshire	NELAC	1	200610
TestAmerica Burlington	New Jersey	NELAC	2	VT972
TestAmerica Burlington	New York	NELAC	2	10391
TestAmerica Burlington	Rhode Island	State Program	1	LAO00298
TestAmerica Burlington	USDA	Federal		P330-11-00093
TestAmerica Burlington	Vermont	State Program	1	VT-4000
TestAmerica Burlington	Virginia	NELAC	3	460209

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method TO15

Volatile Organic Compounds (GC/MS) by Method TO15

Shipping and Receiving Documents

TestAmerica Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
phone 802-660-1990 fax 802-660-1919

Canister Samples Chain of Custody Record

TestAmerica Analytical Testing Corp. assumes no liability with respect to the collection and shipment of these samples.

Client Contact Information	Project Manager: Keith Cowan	Samples Collected By: BLAYDES
Company: CHA CONSULTING INC.	Phone: 518 453 8752	1 of 1 COCs
Address: 3 WINNERS CIRCLE	Email: KCOWAN@CHACOMPANIES.com	
City/State/Zip ALBANY NY 12205		
Phone: 518 428 5626	Site Contact: B BLAYDES	
FAX:	TA Contact:	
Project Name: CONGRESS STREET	**Analysis Turnaround Time**	
Site:	Standard (Specify) ✓	
PO #	Rush (Specify)	

Sample Identification	Sample Date(s)	Time Start	Time Stop	Canister Vacuum in Field, "Hg (Start)	Canister Vacuum in Field, 'Hg (Stop)	Flow Controller ID	Canister ID	TO-15	TO-14A	EPA 3C	EPA 25C	ASTM D-1946	Other (Please specify in notes section)	*Sample Type*	Indoor Air	Ambient Air	Soil Gas	Landfill Gas	Other (Please specify in notes section)
SVE2	04/17/12	1115	1140	-30	-8	4614	4855	X									X		
SVE3A	04/18/12	1130	1147	-30	-2	4630	4865	X									X		
SVE3B	04/18/12	1300	1315	-29	-8	4975	4966	X									X		

Temperature (Fahrenheit)

	Interior	Ambient	
Start			
Stop			

Pressure (inches of Hg)

	Interior	Ambient	
Start			
Stop			

Special Instructions/QC Requirements & Comments:

Samples Shipped by: B Blaydes	Date/Time: 4/19/12 1610	Samples Received by: 4/20/12 1015
Samples Relinquished by:	Date/Time:	Received by:
Relinquished by:	Date/Time:	Received by:

Lab Use Only Shipper Name: Opened by: Condition:

FedEx Express *US Airbill*

FedEx Tracking Number 8600 7030 1112

Form ID No. 0215

1 From This portion can be removed for Recipient's records.

Date [illegible] FedEx Tracking Number 860070301112

Sender's Name [illegible] Phone [illegible]

Company [illegible]

Address [illegible]

Dept/Floor/Suite/Room

City ALBANY State NY ZIP [illegible]

2 Your Internal Billing Reference [illegible]

3 To

Recipient's Name Phone [illegible]

Company [illegible]

Recipient's Address [illegible]

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept/Floor/Suite/Room

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City [illegible] State VT ZIP [illegible]

0257842119

8600 7030 1112

4a Express Package Service *Packages up to 150 lbs.*

☐ FedEx Priority Overnight Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☒ FedEx Standard Overnight Next business afternoon.* Saturday Delivery NOT available.

☐ FedEx First Overnight Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.

☐ FedEx 2Day Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Express Saver Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

4b Express Freight Service *Packages over 150 lbs.*

☐ FedEx 1Day Freight* Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx 2Day Freight Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx 3Day Freight Third business day.** Saturday Delivery NOT available.

* Call for Confirmation:

** To most locations.

5 Packaging

☐ FedEx Envelope* ☐ FedEx Pak* Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak ☐ FedEx Box ☐ FedEx Tube ☒ Other

* Declared value limit $500

6 Special Handling

Include FedEx address in Section 3

☐ SATURDAY Delivery Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.

☐ HOLD Weekday at FedEx Location Not available for FedEx First Overnight.

☐ HOLD Saturday at FedEx Location Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods?

One box must be checked.

☒ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging. ☐ Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

☒ Sender Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check Obtain Recip. Acct. No. ☐

Total Packages Total Weight Total Charges

Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

8 *NEW* Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

☐ No Signature Required Package may be left without obtaining a signature for delivery.

☐ Direct Signature Anyone at recipient's address may sign for delivery. *Fee applies.*

☐ Indirect Signature If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. *Fee applies.*

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Login Sample Receipt Checklist

Client: CHA Inc

Job Number: 200-10443-1
SDG Number: 200-10443

Login Number: 10443
List Number: 1
Creator: Kirchner, Benjamin

List Source: TestAmerica Burlington

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	Lab does not accept radioactive samples.
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.	N/A	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	AMBIENT
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.	False	Refer to Job Narrative for details.
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.	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	Check done at department level as required.

APPENDIX H

SOIL SAMPLE RESULTS
SUMMARY TABLE

SUMMARY OF SOIL SAMPLE RESULTS

						SB01	SB02	SB03	SB04	SB05	SB06		SB07		SB08	
Part 375 Industrial	Part 375 Residential	Part 375 Unrestricted	Method	CAS-RN	Analyte	SB01 SS (2-3) 040212	SB02 SS (2-3) 040212	SB03 SS (1-2) 040212	SB04 SS (2-3) 040212	SB05 SS (1-2) 040212	SB06 SS (1-2) 040212	SB06 SS (3-4) 040212	SB07 SS (1-2) 040212	SB07 SS (3-4) 040212	SB08 SS (1-2) 040212	SB08 SS (2-3) 040212
1,000,000	***100,000***	*1,100*	SW8260B	95-50-1	1,2-Dichlorobenzene		*3,600*	220	*2,100*							
1,000,000	***100,000***	*120*	SW8260B	78-93-3	2-Butanone	8.5 J		89	77	9.6 J					64	
			SW8260B	591-78-6	2-Hexanone	2,600 J										
			SW8260B	108-10-1	4-Methyl-2-Pentanone				4,800							
1,000,000	***100,000***	*50*	SW8260B	67-64-1	Acetone	*180*		*140*	*150*	*420*				10 J	*720*	
89,000	***2,900***	*60*	SW8260B	71-43-2	Benzene	1.5 J	*82 J*	17	2.3 J	1.1 J						
			SW8260B	98-82-8	Cumene	1,900	3,600	29,000	5,600	7 J		13,000				
			SW8260B	110-82-7	Cyclohexane	530 J		3.2 J								
780,000	***30,000***	*1,000*	SW8260B	100-41-4	Ethylbenzene	*11,000*	***71,000***	***270,000***	***38,000***	38	2.4 J	***3,500,000***	13 B	6.4 B	8.8	3.3 J
			SW8260B	79-20-9	Methyl Acetate				25,000							
			SW8260B	108-87-2	Methylcyclohexane	19,000	660	26	4.9 J							
			SW8260B	100-42-5	Styrene			240	110			83,000				
1,000,000	***100,000***	*700*	SW8260B	108-88-3	Toluene	*2,200*	*90,000*	***630,000***	*63,000*	54		***130,000***	3 J	14	26	3.1 J
1,000,000	***100,000***	*260*	SW8260B	1330-20-7	Xylenes, Total	***120,000***	***140,000***	***1,000,000***	***150,000***	*2,700 B*	0.95 J	***15,000,000***	140 B	25 B	34 B	11 B
			SW8270C	92-52-4	1,1'-Biphenyl		2,300 J	7,700 J	6,700 J			2,800	22 J	87 J		
			SW8270C	105-67-9	2,4-Dimethylphenol			67,000	23,000							
			SW8270C	91-57-6	2-Methylnaphthalene		32,000			640 J		32,000	94 J	430		
1,000,000	***34,000***	*330*	SW8270C	106-44-5	4-Methylphenol											
1,000,000	***100,000***	*20,000*	SW8270C	83-32-9	Acenaphthene	100 J	2,800 J			160 J			5.9 J			
1,000,000	***100,000***	*100,000*	SW8270C	208-96-8	Acenaphthylene				650 J							
			SW8270C	98-86-2	Acetophenone	15,000	36,000		14,000 J			13,000				
1,000,000	***100,000***	*100,000*	SW8270C	120-12-7	Anthracene	350 J	840 J	8,200 J	2,300 J			200 J		15 J		
11,000	***1,000***	*1,000*	SW8270C	56-55-3	Benzo(a)Anthracene	***3,100 J***	***2,700 J***	***8,800 J***	***3,300 J***	220 J	140 J	130 J	14 J	18 J	***3,200 J***	68 J
1,100	***1,000***	*1,000*	SW8270C	50-32-8	Benzo(a)Pyrene	***2,000 J***	***1,600 J***							9.4 J	***2,200 J***	110 J
11,000	***1,000***	*1,000*	SW8270C	205-99-2	Benzo(b)Fluoranthene	***4,900***	***3,300 J***	***8,800 J***	***2,900 J***				16 J	19 J		110 J
1,000,000	***100,000***	*100,000*	SW8270C	191-24-2	Benzo(G,H,I)Perylene	2,500 J		3,200 J								
11,000	***1,000***	*800*	SW8270C	207-08-9	Benzo(k)Fluoranthene	***2,100 JB***	***1,400 JB***	***4,900 JB***	***1,700 J***							48 JB
			SW8270C	117-81-7	Bis(2-Ethylhexyl) Phthalate		7,900 J	23,000 J					110 J	120 J		
11,000	***1,000***	*1,000*	SW8270C	218-01-9	Chrysene	***3,500 JB***	***2,400 JB***	***8,600 JB***	***3,000 JB***	320 JB	74 J		14 JB	19 JB	***3,700 JB***	86 JB
1,100	***330***	*330*	SW8270C	53-70-3	Dibenzo(A,H)Anthracene	***3,000 J***										
1,000,000	***14,000***	*7,000*	SW8270C	132-64-9	Dibenzofuran		2,300 J		3,300 J			1,200 J		42 J		
1,000,000	***100,000***	*100,000*	SW8270C	206-44-0	Fluoranthene	6,000	5,900 J	22,000 J	7,500 J			250 J	15 J	41 J	4,400 J	63 J
1,000,000	***100,000***	*30,000*	SW8270C	86-73-7	Fluorene			5,900 J	2,200 J			610 J	10 J	31 J		
11,000	***500***	*500*	SW8270C	193-39-5	Indeno(1,2,3-Cd)Pyrene	***2,300 J***	***1,500 J***		***1,200 J***							75 J
1,000,000	***100,000***	*12,000*	SW8270C	91-20-3	Naphthalene	1,900 J	*59,000*	*63,000*	*42,000*	520 J		*48,000*	63 J	230		
1,000,000	***100,000***	*100,000*	SW8270C	85-01-8	Phenanthrene	1,600 J	5,300 J	35,000 J	12,000 J	400 J		930 J	26 J	84 J		
1,000,000	***100,000***	*330*	SW8270C	108-95-2	Phenol		*11,000 J*			*2,700 J*						
1,000,000	***100,000***	*100,000*	SW8270C	129-00-0	Pyrene	5,800	4,300 J	17,000 J	5,800 J			210 J		27 J	4,600 J	84 J
				Total VOC		157,420	305,342	1,929,515.2	286,744.2	3,230	3.4	18,726,000	156	55.4	852.8	17.4
				Total SVOC		54,150	182,540	283,100	131,550	4,960	214	99,330	390	1,172	18,100	644

						SB09		SB10		SB11	SB12		SB13		SB14		SB15	
Part 375 Industrial	Part 375 Residential	Part 375 Unrestricted	Method	CAS-RN	Analyte	SB09 SS (1-2) 040212	SB09 SS (3-4) 040212	SB10 SS (1-2) 040212	SB10 SS (3-4) 040212	SB11 SS (2-3) 040212	SB12 SS (0-1) 040212	SB12 SS (2-3) 040212	SB13 SS (1-2) 040212	SB13 SS (2-3) 040212	SB14 SS (1-2) 040212	SB14 SS (2-3) 040212	SB15 SS (1-2) 040212	SB15 SS (3-4) 040212
1,000,000	***100,000***	*1,100*	SW8260B	95-50-1	1,2-Dichlorobenzene	230												
1,000,000	***100,000***	*120*	SW8260B	78-93-3	2-Butanone													12 J
			SW8260B	591-78-6	2-Hexanone	420 J												
			SW8260B	108-10-1	4-Methyl-2-Pentanone													
1,000,000	***100,000***	*50*	SW8260B	67-64-1	Acetone					42				32				*81*
89,000	***2,900***	*60*	SW8260B	71-43-2	Benzene													
			SW8260B	98-82-8	Cumene	520						1 J						
			SW8260B	110-82-7	Cyclohexane													
780,000	***30,000***	*1,000*	SW8260B	100-41-4	Ethylbenzene	300	0.97 J	220		16	2.7 J	3.8 J	4.5 J	13	1.4 J	5.3	6	5.2 J
			SW8260B	79-20-9	Methyl Acetate													
			SW8260B	108-87-2	Methylcyclohexane	950												
			SW8260B	100-42-5	Styrene													
1,000,000	***100,000***	*700*	SW8260B	108-88-3	Toluene	110 J	3 J	140	42 J	41	5.1 J	3.7 J	12	33		4.6 J	5.6	17
1,000,000	***100,000***	*260*	SW8260B	1330-20-7	Xylenes, Total	*2,400*	2.7 JB	*2,100*	91 J	65 B	7 JB	42 B	15 B	45 B	8.6 JB	13 B	16	16
			SW8270C	92-52-4	1,1'-Biphenyl	330 J												
			SW8270C	105-67-9	2,4-Dimethylphenol													
			SW8270C	91-57-6	2-Methylnaphthalene							860 J						
1,000,000	***34,000***	*330*	SW8270C	106-44-5	4-Methylphenol										47 J			
1,000,000	***100,000***	*20,000*	SW8270C	83-32-9	Acenaphthene							200 J						
1,000,000	***100,000***	*100,000*	SW8270C	208-96-8	Acenaphthylene													
			SW8270C	98-86-2	Acetophenone							2,800 J						
1,000,000	***100,000***	*100,000*	SW8270C	120-12-7	Anthracene	290 J						420 J						
11,000	***1,000***	*1,000*	SW8270C	56-55-3	Benzo(a)Anthracene	680 J	47 J	470 J		12 J	63 J	930 J	76 J	140 J	29 J	15 J	62 J	210 J
1,100	***1,000***	*1,000*	SW8270C	50-32-8	Benzo(a)Pyrene	380 J		320 J		12 J		590 J		69 J	27 J	11 J		160 J
11,000	***1,000***	*1,000*	SW8270C	205-99-2	Benzo(b)Fluoranthene	410 J		670 J		19 J		710 J			24 J	17 J		220 J
1,000,000	***100,000***	*100,000*	SW8270C	191-24-2	Benzo(G,H,I)Perylene							190 J			17 J			
11,000	***1,000***	*800*	SW8270C	207-08-9	Benzo(k)Fluoranthene	520 JB		280 JB				440 JB			35 JB	11 JB		140 J
			SW8270C	117-81-7	Bis(2-Ethylhexyl) Phthalate		1,100 J	1,900 J		98 J					100 J			1,000 J
11,000	***1,000***	*1,000*	SW8270C	218-01-9	Chrysene	590 JB		490 JB		18 JB	72 JB	750 JB	52 JB	190 JB	34 JB	17 JB		200 J
1,100	***330***	*330*	SW8270C	53-70-3	Dibenzo(A,H)Anthracene							***2,200 J***						
1,000,000	***14,000***	*7,000*	SW8270C	132-64-9	Dibenzofuran													
1,000,000	***100,000***	*100,000*	SW8270C	206-44-0	Fluoranthene	1,200 J		700 J		21 J	69 J	1,600 J			48 J	17 J		300 J
1,000,000	***100,000***	*30,000*	SW8270C	86-73-7	Fluorene													
11,000	***500***	*500*	SW8270C	193-39-5	Indeno(1,2,3-Cd)Pyrene							300 J			16 J			
1,000,000	***100,000***	*12,000*	SW8270C	91-20-3	Naphthalene							5,600						
1,000,000	***100,000***	*100,000*	SW8270C	85-01-8	Phenanthrene	1,200 J		380 J				1,200 J		270 J	16 J	8.1 J		210 J
1,000,000	***100,000***	*330*	SW8270C	108-95-2	Phenol													
1,000,000	***100,000***	*100,000*	SW8270C	129-00-0	Pyrene	910 J		560 J	42 J	15 J		1,200 J		260 J	37 J	14 J		300 J
				Total VOC		4,700	6.7	2,460	133	164	14.8	50.5	31.5	123	10	22.9	27.6	131.2
				Total SVOC		6,510	1,147	5,770	42	195	204	19,990	128	929	430	110	62	2,740

APPENDIX I

SOIL SAMPLE ANALYTICAL REPORT

(ON CD)

ANALYTICAL REPORT

Job Number: 480-18049-1

Job Description: Congress Street Phase I - SI Group

For:
CHA Inc
111 Winner Circle
PO BOX 5269
Albany, NY 12205-0269

Attention: Mr. Scott Rosecrans

Peggy Gray - Erdmann

Approved for release.
Peggy Gray-Erdmann
Project Manager II
4/13/2012 4:12 PM

Peggy Gray-Erdmann
Project Manager II
peggy.gray-erdmann@testamericainc.com
04/13/2012

cc: Mr. Keith Cowan
Katie E Flood

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project Manager who has signed this report.

TestAmerica Buffalo NELAC Certifications: CADPH 01169CA, FLDOH E87672, ILEPA 200003, KSDOH E-10187, LADEQ 30708, MDH 036-999-337, NHELAP 2973, NJDEP NY455, NHDOH 10026, ORELAP NY200003, PADEP 68-00281, TXCEQ T-104704412-10-1

TestAmerica Laboratories, Inc.
TestAmerica Buffalo 10 Hazelwood Drive, Amherst, NY 14228-2298
Tel (716) 691-2600 Fax (716) 691-7991 www.testamericainc.com

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Job Narrative
480-18049-1

Comments

No additional comments.

Receipt

All samples were received in good condition within temperature requirements.

GC/MS VOA

Method(s) 8260B: The following sample(s) was analyzed at less than 1.0 gram due to the abundance of target analytes: SB05 SS (1-2) 040212 DL (480-18049-6 DL). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The method blank for batch 58395 contained total xylenes above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of samples was not performed.

Method(s) 8260B: The following sample(s) was diluted due to the abundance of target analytes: SB06 SS (3-4) 040212 (480-18049-8). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The following samples were diluted due to the abundance of target analytes: SB01 SS (2-3) 040212 DL (480-18049-1 DL), SB02 SS (2-3) 040212 DL (480-18049-2 DL), SB04 SS (2-3) 040212 DL (480-18049-5 DL). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The following samples were diluted due to the nature of the TCLP sample matrix: (LB 480-58276/1-A), SB02 SS (0-3) 040212 (480-18049-3), SB05 SS (0-3) 040212 (480-18049-7). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The following samples was diluted due to the abundance of target analytes: SB03 SS (1-2) 040212 DL (480-18049-4 DL), SB06 SS (3-4) 040212 DL (480-18049-8 DL). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: Due to the level of dilution required for the following sample, surrogate recoveries are not usable data: SB03 SS (1-2) 040212 DL (480-18049-4 DL), SB06 SS (3-4) 040212 DL (480-18049-8 DL).

Method(s) 8260B: The following compounds were outside control limits in the continuing calibration verification (CCV) associated with batch 58568: Cyclohexane and Methylcyclohexane. These compounds are not classified as Calibration Check Compounds (CCCs) in the reference method, and the laboratory defaults to in-house and/or project-specific criteria for evaluation. Due to the large number of analytes contained in the CCV, the laboratory's SOP allows for six analytes to be outside limits; therefore, the data have been reported.

Method(s) 8260B: The method blank for batch 58251 contained Ethylbenzene and Xylenes, Total above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 8260B: The following compounds were outside control limits in the continuing calibration verification (CCV) associated with batch 58389: Cyclohexane, Methylcyclohexane and trans-1,4-Dichloro-2-butene. These compounds are not classified as Calibration Check Compounds (CCCs) in the reference method, and the laboratory defaults to in-house and/or project-specific criteria for evaluation. Due to the large number of analytes contained in the CCV, the laboratory's SOP allows for six analytes to be outside limits; therefore, the data have been reported.

Method(s) 8260B: The following compounds were outside control limits in the continuing calibration verification (CCV) associated with batch 58481: Carbon disulfide. These compounds are not classified as Calibration Check Compounds (CCCs) in the reference method, and the laboratory defaults to in-house and/or project-specific criteria for evaluation. Due to the large number of analytes contained in the CCV, the laboratory's SOP allows for six analytes to be outside limits; therefore, the data have been reported.

Method(s) 8260B: The following sample(s) was analyzed medium level due to the nature of the sample matrix: SB10 SS (3-4) 040212 (480-18049-12). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The following samples were analyzed medium level due to the abundance of target analytes: SB02 SS (2-3) 040212 (480-18049-2), SB10 SS (1-2) 040212 (480-18049-11), SB09 SS (1-2) 040212 (480-18049-22). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: Internal standard responses were outside of acceptance limits for the following sample dilution: SB01 SS (2-3) 040212 DL (480-18049-1 DL). The sample shows evidence of matrix interference.

No other analytical or quality issues were noted.

GC/MS Semi VOA

Method(s) 8270C: The following samples were diluted due to viscosity: SB06 SS (1-2) 040212 (480-18049-26), SB09 SS (3-4) 040212

(480-18049-23), SB15 SS (1-2) 040212 (480-18049-24), SB15 SS (3-4) 040212 (480-18049-25). Elevated reporting limits (RL) are provided.

Method(s) 8270C: The following sample contained one acid surrogate outside acceptance limits: SB15 SS (3-4) 040212 (480-18049-25). The laboratory's SOP allows one acid surrogate to be outside acceptance limits; therefore, re-extraction/re-analysis was not performed. This result has been reported and qualified.

Method(s) 8270C: The following sample was diluted due to the abundance of target analytes: SB02 SS (0-3) 040212 DL (480-18049-3 DL). Elevated reporting limits (RLs) are provided.

Method(s) 8270C: The following samples were diluted due to viscosity: SB01 SS (2-3) 040212 (480-18049-1), SB02 SS (2-3) 040212 (480-18049-2), SB03 SS (1-2) 040212 (480-18049-4), SB04 SS (2-3) 040212 (480-18049-5), SB05 SS (1-2 040212 (480-18049-6), SB10 SS (1-2) 040212 (480-18049-11). Elevated reporting limits (RL) are provided.

Method(s) 8270C: The method blank for preparation batch 480-58238 contained several analytes above the method detection limit. These target analyte concentrations were less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 8270C: The laboratory control sample duplicate (LCSD) for preparation batch 480-58238 exceeded control limits for the following analytes: N-Nitrosodiphenylamine and 2,4-Dinitrotoluene. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 8270C: The %RPD of the laboratory control standard duplicate (LCSD) for preparation batch 480-58238 exceeded control limits for the following analyte: Benzaldehyde.

Method(s) 8270C: Due to the level of dilution required for the following samples, surrogate recoveries are not reported: SB03 SS (1-2) 040212 (480-18049-4), SB04 SS (2-3) 040212 (480-18049-5) SB05 SS (1-2) 040212 (480-18049-6).

Method(s) 8270C: The following samples were diluted due to viscosity: SB06 SS (3-4) 040212 (480-18049-8), SB08 SS (1-2) 040212 (480-18049-18), SB08 SS (2-3) 040212 (480-18049-19), SB09 SS (1-2) 040212 (480-18049-22), SB12 SS (0-1) 040212 (480-18049-20), SB12 SS (2-3)040212 (480-18049-21), SB13 SS (1-2) 040212 (480-18049-16), SB13 SS (2-3) 040212 (480-18049-17). Elevated reporting limits (RL) are provided.

Method(s) 8270C: Due to the level of dilution required for the following sample, surrogate recoveries are not reported: SB08 SS (1-2) 040212 (480-18049-18).

Method(s) 8270C: The following compounds were outside control limits in the continuing calibration verification (CCV) associated with batch 58695: 4-Chloroaniline, 3,3'-Dichlorobenzidine. These compounds are not classified as Calibration Check Compounds (CCC's) in the reference method. Due to the large number of analytes contained in the CCV, the laboratory's SOP allows for four analytes to be outside limits; therefore, the data have been reported.

Method(s) 8270C: The following compound was outside control limits in the continuing calibration verification (CCV) associated with batch 58601: 4-Nitrophenol. This compound is not classified as a Calibration Check Compound (CCC) in the reference method. Due to the large number of analytes contained in the CCV, the laboratory's SOP allows for four analytes to be outside limits; therefore, the data have been reported.

Method(s) 8270C: The analytes 3-Methylphenol and 4-Methylphenol co-elute and can not be analytical separated. The reported concentrations for these analytes are therefore a total rather than individual quantitated value. Since these analytes co-elute, only 4-Methylphenol was calibrated for in the calibration data.

No other analytical or quality issues were noted.

Metals

Method(s) 6010B: The TCLP Extractor Blank, LB 480-58275, contained total chromium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples SB02 SS (0-3) 040212 (480-18049-3), SB05 SS (0-3) 040212 (480-18049-7) was not performed.

Method(s) 6010B: The TCLP Extractor Blank, LB 480-58275, contained total barium above the reporting limit (RL). The associated samples SB02 SS (0-3) 040212 (480-18049-3), SB05 SS (0-3) 040212 (480-18049-7) contained detects for this analyte at concentrations greater than 10X the value found in the TCLP Extractor Blank; therefore, re-extraction and/or re-analysis of the samples was not performed.

No other analytical or quality issues were noted.

General Chemistry

No analytical or quality issues were noted.

Organic Prep
Method(s) 3550B: Due to the matrix, the following samples could not be concentrated to the final method required volume: SB02 SS (2-3) 040212 (480-18049-2), SB03 SS (1-2) 040212 (480-18049-4), SB04 SS (2-3) 040212 (480-18049-5), SB08 SS (1-2) 040212 (480-18049-18). The reporting limits (RLs) are elevated proportionately.

No other analytical or quality issues were noted.

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-18049-1

SDG No.:

Instrument ID: HP5973F Analysis Batch Number: 58043

Lab Sample ID: 480-18049-4 Client Sample ID: SB03 SS (1-2) 040212

Date Analyzed: 04/04/12 15:29 Lab File ID: F7756.D GC Column: ZB-624 (60) ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toluene	7.14	Split Peak	cwiklinc	04/04/12 17:23
m-Xylene & p-Xylene	8.72	Wrong peak	cwiklinc	04/04/12 17:23

Lab Sample ID: 480-18049-5 Client Sample ID: SB04 SS (2-3) 040212

Date Analyzed: 04/04/12 15:54 Lab File ID: F7757.D GC Column: ZB-624 (60) ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Toluene	7.13	Missed Peak	cwiklinc	04/04/12 17:26

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-18049-1

SDG No.:

Instrument ID: HP5973G Analysis Batch Number: 56586

Lab Sample ID: STD 480-56586/3 IC Client Sample ID:

Date Analyzed: 03/24/12 01:37 Lab File ID: G10250.D GC Column: ZB-624 (60) ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Vinyl chloride	1.49	Split Peak	coderd	03/24/12 09:56
Bromomethane	1.75	Assign Peak	coderd	03/24/12 09:59
Chloroethane	1.84	Assign Peak	coderd	03/24/12 09:56
Trichlorofluoromethane	2.05	Split Peak	coderd	03/24/12 09:56
1,1,2-Trichloro-1,2,2-trifluoroethane	2.55	Assign Peak	coderd	03/24/12 09:56
1,1-Dichloroethene	2.56	Split Peak	coderd	03/24/12 09:56
Iodomethane	2.72	Split Peak	coderd	03/24/12 09:56
Carbon disulfide	2.75	Split Peak	coderd	03/24/12 09:56
Methylene Chloride	3.07	Split Peak	coderd	03/24/12 09:56

Lab Sample ID: STD 480-56586/4 IC Client Sample ID:

Date Analyzed: 03/24/12 01:59 Lab File ID: G10251.D GC Column: ZB-624 (60) ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,1,2-Trichloro-1,2,2-trifluoroethane	2.52	Split Peak	coderd	03/24/12 09:57
1,1-Dichloroethene	2.55	Split Peak	coderd	03/24/12 09:57
Iodomethane	2.71	Split Peak	coderd	03/24/12 09:57

Lab Sample ID: STD 480-56586/5 IC Client Sample ID:

Date Analyzed: 03/24/12 02:21 Lab File ID: G10252.D GC Column: ZB-624 (60) ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,1,2-Trichloro-1,2,2-trifluoroethane	2.52	Split Peak	coderd	03/24/12 09:58
1,1-Dichloroethene	2.55	Split Peak	coderd	03/24/12 09:57
Iodomethane	2.72	Split Peak	coderd	03/24/12 09:58
Carbon disulfide	2.74	Split Peak	coderd	03/24/12 09:58

8260B

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-18049-1

SDG No.:

Instrument ID: HP5973G Analysis Batch Number: 56586

Lab Sample ID: STD 480-56586/6 ICIS Client Sample ID:

Date Analyzed: 03/24/12 02:43 Lab File ID: G10253.D GC Column: ZB-624 (60) ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Chloroethane	1.91	Assign Peak	coderd	03/24/12 09:53
1,1,2-Trichloro-1,2,2-trifluoroethane	2.53	Assign Peak	coderd	03/24/12 09:53
Iodomethane	2.72	Split Peak	coderd	03/24/12 10:01

Lab Sample ID: STD 480-56586/7 IC Client Sample ID:

Date Analyzed: 03/24/12 03:05 Lab File ID: G10254.D GC Column: ZB-624 (60) ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,1,2-Trichloro-1,2,2-trifluoroethane	2.53	Split Peak	coderd	03/24/12 09:59
1,1-Dichloroethene	2.55	Split Peak	coderd	03/24/12 09:59
Iodomethane	2.72	Split Peak	coderd	03/24/12 09:59

Lab Sample ID: STD 480-56586/8 IC Client Sample ID:

Date Analyzed: 03/24/12 03:26 Lab File ID: G10255.D GC Column: ZB-624 (60) ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,1,2-Trichloro-1,2,2-trifluoroethane	2.53	Split Peak	coderd	03/24/12 10:00
Iodomethane	2.72	Split Peak	coderd	03/24/12 10:00

8260B

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Buffalo   Job No.: 480-18049-1

SDG No.:

Instrument ID: HP5973V   Analysis Batch Number: 53870

Lab Sample ID: IC 480-53870/8   Client Sample ID:

Date Analyzed: 03/05/12 14:58   Lab File ID: V7103.D   GC Column: RXI-5Sil MS   ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Caprolactam	8.25	Assign Peak	pfenderk	03/05/12 16:38

8270C

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-18049-1

SDG No.:

Instrument ID: HP5973V Analysis Batch Number: 56937

Lab Sample ID: IC 480-56937/2 Client Sample ID:

Date Analyzed: 03/27/12 17:22 Lab File ID: V8274.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
N-Nitrosodimethylamine	2.74	Assign Peak	lyh	03/28/12 08:37
Pyridine	2.81	Assign Peak	lyh	03/28/12 08:37
2,4-Dinitrophenol	10.04	Assign Peak	lyh	03/28/12 08:37
4-Nitrophenol	10.13	Assign Peak	lyh	03/28/12 08:37
Pentachlorophenol	11.44	Assign Peak	lyh	03/28/12 08:47
Benzo(g,h,i)perylene	17.12	Assign Peak	lyh	03/28/12 08:37

Lab Sample ID: IC 480-56937/3 Client Sample ID:

Date Analyzed: 03/27/12 17:47 Lab File ID: V8275.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Pentachlorophenol	11.44	Assign Peak	lyh	03/28/12 08:47

8270C

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-18049-1

SDG No.:

Instrument ID: HP5973V Analysis Batch Number: 58452

Lab Sample ID: CCVIS 480-58452/2 Client Sample ID:

Date Analyzed: 04/06/12 11:19 Lab File ID: V8603.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
N-Nitrosodimethylamine	2.75	Assign Peak	lyh	04/06/12 12:03
Pyridine	2.81	Assign Peak	lyh	04/06/12 14:22

Lab Sample ID: 480-18049-26 Client Sample ID: SB06 SS (1-2) 040212

Date Analyzed: 04/06/12 17:20 Lab File ID: V8618.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzo(a)anthracene	14.11	Assign Peak	lyh	04/07/12 12:30
Chrysene	14.14	Assign Peak	lyh	04/07/12 12:30

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-18049-1

SDG No.:

Instrument ID: HP5973V Analysis Batch Number: 58601

Lab Sample ID: CCVIS 480-58601/2 Client Sample ID:

Date Analyzed: 04/07/12 13:15 Lab File ID: V8638.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
N-Nitrosodimethylamine	2.74	Assign Peak	lyh	04/07/12 13:37
Pyridine	2.80	Assign Peak	lyh	04/07/12 13:37
2-Fluorophenol	4.32	Assign Peak	lyh	04/07/12 13:37

Lab Sample ID: LCS 480-58531/2-A Client Sample ID:

Date Analyzed: 04/07/12 15:41 Lab File ID: V8644.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Pyridine	2.79	Assign Peak	lyh	04/09/12 09:35

Lab Sample ID: LCSD 480-58531/3-A Client Sample ID:

Date Analyzed: 04/07/12 16:05 Lab File ID: V8645.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Pyridine	2.79	Assign Peak	lyh	04/09/12 09:37

8270C

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Buffalo   Job No.: 480-18049-1

SDG No.:

Instrument ID: HP5973V   Analysis Batch Number: 58695

Lab Sample ID: IC 480-58695/2   Client Sample ID:

Date Analyzed: 04/09/12 14:10   Lab File ID: V8758.D   GC Column: RXI-5Sil MS   ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
N-Nitrosodimethylamine	2.77	Assign Peak	lyh	04/09/12 15:30
Pyridine	2.83	Assign Peak	lyh	04/09/12 15:30
2,4,5-Trichlorophenol	9.04	Assign Peak	lyh	04/09/12 15:30
2-Nitroaniline	9.38	Assign Peak	lyh	04/09/12 15:30
3-Nitroaniline	9.94	Assign Peak	lyh	04/09/12 15:30
2,4-Dinitrophenol	10.09	Assign Peak	lyh	04/09/12 15:30
4-Nitrophenol	10.21	Assign Peak	lyh	04/09/12 16:40
4-Nitroaniline	10.67	Assign Peak	lyh	04/09/12 15:30
Pentachlorophenol	11.45	Assign Peak	lyh	04/09/12 15:30
3,3'-Dichlorobenzidine	14.09	Assign Peak	lyh	04/09/12 15:30
Benzo(k)fluoranthene	15.13	Assign Peak	lyh	04/09/12 15:30
Indeno(1,2,3-cd)pyrene	16.78	Assign Peak	lyh	04/09/12 15:30
Dibenz(a,h)anthracene	16.81	Assign Peak	lyh	04/09/12 15:30

Lab Sample ID: IC 480-58695/3   Client Sample ID:

Date Analyzed: 04/09/12 14:38   Lab File ID: V8759.D   GC Column: RXI-5Sil MS   ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Pyridine	2.82	Assign Peak	lyh	04/09/12 15:33
2,4-Dinitrophenol	10.06	Assign Peak	lyh	04/09/12 15:33

Lab Sample ID: ICIS 480-58695/4   Client Sample ID:

Date Analyzed: 04/09/12 15:02   Lab File ID: V8760.D   GC Column: RXI-5Sil MS   ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Pyridine	2.82	Assign Peak	lyh	04/09/12 15:24

8270C

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Buffalo　Job No.: 480-18049-1

SDG No.:

Instrument ID: HP5973V　Analysis Batch Number: 58695

Lab Sample ID: IC 480-58695/5　Client Sample ID:

Date Analyzed: 04/09/12 15:27　Lab File ID: V8761.D　GC Column: RXI-5Sil MS　ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Pyridine	2.83	Assign Peak	lyh	04/09/12 16:32

Lab Sample ID: CCVIS 480-58695/10　Client Sample ID:

Date Analyzed: 04/09/12 17:27　Lab File ID: V8766.D　GC Column: RXI-5Sil MS　ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
N-Nitrosodimethylamine	2.75	Assign Peak	lyh	04/09/12 17:47
Pyridine	2.83	Assign Peak	lyh	04/09/12 17:47

Lab Sample ID: LCS 480-58238/2-A　Client Sample ID:

Date Analyzed: 04/09/12 19:52　Lab File ID: V8772.D　GC Column: RXI-5Sil MS　ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Caprolactam	8.29	Assign Peak	lyh	04/10/12 10:59

Lab Sample ID: 480-18049-1　Client Sample ID: SB01 SS (2-3) 040212

Date Analyzed: 04/09/12 20:40　Lab File ID: V8774.D　GC Column: RXI-5Sil MS　ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzo(k)fluoranthene	15.12	Assign Peak	lyh	04/10/12 11:05

Lab Sample ID: 480-18049-2　Client Sample ID: SB02 SS (2-3) 040212

Date Analyzed: 04/09/12 21:04　Lab File ID: V8775.D　GC Column: RXI-5Sil MS　ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2-Fluorophenol	4.32	Assign Peak	lyh	04/10/12 11:08
Indeno(1,2,3-cd)pyrene	16.75	Assign Peak	lyh	04/10/12 11:08

8270C

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-18049-1

SDG No.:

Instrument ID: HP5973V Analysis Batch Number: 58695

Lab Sample ID: 480-18049-4 Client Sample ID: SB03 SS (1-2) 040212

Date Analyzed: 04/09/12 21:28 Lab File ID: V8776.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Nitrobenzene-d5	6.74	Assign Peak	lyh	04/10/12 11:11

Lab Sample ID: 480-18049-5 Client Sample ID: SB04 SS (2-3) 040212

Date Analyzed: 04/09/12 21:52 Lab File ID: V8777.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Indeno(1,2,3-cd)pyrene	16.76	Assign Peak	lyh	04/10/12 11:14

Lab Sample ID: 480-18049-9 Client Sample ID: SB07 SS (1-2) 040212

Date Analyzed: 04/09/12 23:04 Lab File ID: V8780.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Chrysene	14.14	Assign Peak	lyh	04/10/12 11:26

Lab Sample ID: 480-18049-10 Client Sample ID: SB07 SS (3-4) 040212

Date Analyzed: 04/09/12 23:28 Lab File ID: V8781.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzo(a)anthracene	14.11	Assign Peak	lyh	04/10/12 11:29
Chrysene	14.14	Assign Peak	lyh	04/10/12 11:29
Benzo(b)fluoranthene	15.10	Assign Peak	lyh	04/10/12 11:29

Lab Sample ID: 480-18049-13 Client Sample ID: SB11 SS (2-3) 040212

Date Analyzed: 04/10/12 00:41 Lab File ID: V8784.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzo(a)pyrene	15.43	Assign Peak	lyh	04/10/12 12:21

8270C

GC/MS SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-18049-1

SDG No.:

Instrument ID: HP5973V Analysis Batch Number: 58886

Lab Sample ID: 480-18049-19 Client Sample ID: SB08 SS (2-3) 040212

Date Analyzed: 04/10/12 12:31 Lab File ID: V8812.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzo(k)fluoranthene	15.13	Assign Peak	lyh	04/10/12 13:12

Lab Sample ID: 480-18049-21 Client Sample ID: SB12 SS (2-3)040212

Date Analyzed: 04/10/12 13:20 Lab File ID: V8814.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2-Fluorophenol	4.32	Assign Peak	lyh	04/10/12 13:54
Benzo(b)fluoranthene	15.10	Coelution	lyh	04/10/12 13:54
Benzo(k)fluoranthene	15.12	Coelution	lyh	04/10/12 13:54

Lab Sample ID: 480-18049-22 Client Sample ID: SB09 SS (1-2) 040212

Date Analyzed: 04/10/12 13:44 Lab File ID: V8815.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzo(k)fluoranthene	15.12	Assign Peak	lyh	04/10/12 14:24

Lab Sample ID: 480-18049-14 Client Sample ID: SB14 SS (1-2)040212

Date Analyzed: 04/10/12 14:08 Lab File ID: V8816.D GC Column: RXI-5Sil MS ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzo(k)fluoranthene	15.11	Assign Peak	lyh	04/10/12 14:54

8270C

SAMPLE SUMMARY

Client: CHA Inc

Job Number: 480-18049-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
480-18049-1	SB01 SS (2-3) 040212	Solid	04/02/2012 0915	04/04/2012 0900
480-18049-2	SB02 SS (2-3) 040212	Solid	04/02/2012 1004	04/04/2012 0900
480-18049-3	SB02 SS (0-3) 040212	Solid	04/02/2012 1004	04/04/2012 0900
480-18049-4	SB03 SS (1-2) 040212	Solid	04/02/2012 1030	04/04/2012 0900
480-18049-5	SB04 SS (2-3) 040212	Solid	04/02/2012 1045	04/04/2012 0900
480-18049-6	SB05 SS (1-2 040212	Solid	04/02/2012 1115	04/04/2012 0900
480-18049-7	SB05 SS (0-3) 040212	Solid	04/02/2012 1115	04/04/2012 0900
480-18049-8	SB06 SS (3-4) 040212	Solid	04/02/2012 1200	04/04/2012 0900
480-18049-9	SB07 SS (1-2) 040212	Solid	04/02/2012 1215	04/04/2012 0900
480-18049-10	SB07 SS (3-4) 040212	Solid	04/02/2012 1215	04/04/2012 0900
480-18049-11	SB10 SS (1-2) 040212	Solid	04/02/2012 1230	04/04/2012 0900
480-18049-12	SB10 SS (3-4) 040212	Solid	04/02/2012 1230	04/04/2012 0900
480-18049-13	SB11 SS (2-3) 040212	Solid	04/02/2012 1245	04/04/2012 0900
480-18049-14	SB14 SS (1-2)040212	Solid	04/02/2012 1300	04/04/2012 0900
480-18049-15	SB14 SS (2-3) 040212	Solid	04/02/2012 1300	04/04/2012 0900
480-18049-16	SB13 SS (1-2) 040212	Solid	04/02/2012 1315	04/04/2012 0900
480-18049-17	SB13 SS (2-3) 040212	Solid	04/02/2012 1315	04/04/2012 0900
480-18049-18	SB08 SS (1-2) 040212	Solid	04/02/2012 1330	04/04/2012 0900
480-18049-19	SB08 SS (2-3) 040212	Solid	04/02/2012 1330	04/04/2012 0900
480-18049-20	SB12 SS (0-1) 040212	Solid	04/02/2012 1400	04/04/2012 0900
480-18049-21	SB12 SS (2-3)040212	Solid	04/02/2012 1400	04/04/2012 0900
480-18049-22	SB09 SS (1-2) 040212	Solid	04/02/2012 1415	04/04/2012 0900
480-18049-23	SB09 SS (3-4) 040212	Solid	04/02/2012 1415	04/04/2012 0900
480-18049-24	SB15 SS (1-2) 040212	Solid	04/02/2012 1430	04/04/2012 0900
480-18049-25	SB15 SS (3-4) 040212	Solid	04/02/2012 1430	04/04/2012 0900
480-18049-26	SB06 SS (1-2) 040212	Solid	04/02/2012 1200	04/04/2012 0900

EXECUTIVE SUMMARY - Detections

Client: CHA Inc Job Number: 480-18049-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
480-18049-1	**SB01 SS (2-3) 040212**					
2-Hexanone		2600	J	2800	ug/Kg	8260B
2-Butanone (MEK)		8.5	J	28	ug/Kg	8260B
Acetone		180		28	ug/Kg	8260B
Benzene		1.5	J	5.7	ug/Kg	8260B
Cyclohexane		12		5.7	ug/Kg	8260B
Cyclohexane		530	J	550	ug/Kg	8260B
Ethylbenzene		640	E	5.7	ug/Kg	8260B
Ethylbenzene		11000		550	ug/Kg	8260B
Isopropylbenzene		54		5.7	ug/Kg	8260B
Isopropylbenzene		1900		550	ug/Kg	8260B
Methylcyclohexane		260	E	5.7	ug/Kg	8260B
Methylcyclohexane		19000		550	ug/Kg	8260B
Toluene		230	E	5.7	ug/Kg	8260B
Toluene		2200		550	ug/Kg	8260B
Xylenes, Total		3700	E	11	ug/Kg	8260B
Xylenes, Total		120000		1100	ug/Kg	8260B
Acenaphthene		100	J	3800	ug/Kg	8270C
Acetophenone		15000		3800	ug/Kg	8270C
Anthracene		350	J	3800	ug/Kg	8270C
Benzo(a)anthracene		3100	J	3800	ug/Kg	8270C
Benzo(a)pyrene		2000	J	3800	ug/Kg	8270C
Benzo(b)fluoranthene		4900		3800	ug/Kg	8270C
Benzo(g,h,i)perylene		2500	J	3800	ug/Kg	8270C
Benzo(k)fluoranthene		2100	J B	3800	ug/Kg	8270C
Chrysene		3500	J B	3800	ug/Kg	8270C
Dibenz(a,h)anthracene		3000	J	3800	ug/Kg	8270C
Fluoranthene		6000		3800	ug/Kg	8270C
Indeno(1,2,3-cd)pyrene		2300	J	3800	ug/Kg	8270C
Naphthalene		1900	J	3800	ug/Kg	8270C
Phenanthrene		1600	J	3800	ug/Kg	8270C
Pyrene		5800		3800	ug/Kg	8270C
Percent Moisture		11		0.10	%	Moisture
Percent Solids		89		0.10	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: CHA Inc

Job Number: 480-18049-1

Lab Sample ID **Client Sample ID** **Analyte**	**Result**	**Qualifier**	**Reporting Limit**	**Units**	**Method**
480-18049-2 **SB02 SS (2-3) 040212**					
1,2-Dichlorobenzene	3600		110	ug/Kg	8260B
Benzene	82	J	110	ug/Kg	8260B
Ethylbenzene	71000		1100	ug/Kg	8260B
Isopropylbenzene	3600		110	ug/Kg	8260B
Methylcyclohexane	660		110	ug/Kg	8260B
Toluene	90000		1100	ug/Kg	8260B
Xylenes, Total	140000		2200	ug/Kg	8260B
Biphenyl	2300	J	12000	ug/Kg	8270C
2-Methylnaphthalene	32000		12000	ug/Kg	8270C
Acenaphthene	2800	J	12000	ug/Kg	8270C
Acetophenone	36000		12000	ug/Kg	8270C
Anthracene	840	J	12000	ug/Kg	8270C
Benzo(a)anthracene	2700	J	12000	ug/Kg	8270C
Benzo(a)pyrene	1600	J	12000	ug/Kg	8270C
Benzo(b)fluoranthene	3300	J	12000	ug/Kg	8270C
Benzo(k)fluoranthene	1400	J B	12000	ug/Kg	8270C
Bis(2-ethylhexyl) phthalate	7900	J	12000	ug/Kg	8270C
Chrysene	2400	J B	12000	ug/Kg	8270C
Dibenzofuran	2300	J	12000	ug/Kg	8270C
Fluoranthene	5900	J	12000	ug/Kg	8270C
Indeno(1,2,3-cd)pyrene	1500	J	12000	ug/Kg	8270C
Naphthalene	59000		12000	ug/Kg	8270C
Phenanthrene	5300	J	12000	ug/Kg	8270C
Phenol	11000	J	12000	ug/Kg	8270C
Pyrene	4300	J	12000	ug/Kg	8270C
Percent Moisture	13		0.10	%	Moisture
Percent Solids	87		0.10	%	Moisture
480-18049-3 **SB02 SS (0-3) 040212**					
Flashpoint	>176.0		50.0	Degrees F	1010
pH	7.33		0.100	SU	9045C
Percent Moisture	8.8		0.10	%	Moisture
Percent Solids	91		0.10	%	Moisture
TCLP					
3-Methylphenol	0.89		0.050	mg/L	8270C
2-Methylphenol	0.12		0.0050	mg/L	8270C
4-Methylphenol	0.89		0.050	mg/L	8270C
Barium	0.33	B	0.0020	mg/L	6010B
Cadmium	0.0016		0.0010	mg/L	6010B
Chromium	0.0086	B	0.0040	mg/L	6010B
Lead	0.036		0.0050	mg/L	6010B

EXECUTIVE SUMMARY - Detections

Client: CHA Inc Job Number: 480-18049-1

Lab Sample ID Client Sample ID Analyte	Result	Qualifier	Reporting Limit	Units	Method
480-18049-4 SB03 SS (1-2) 040212					
1,2-Dichlorobenzene	220		6.2	ug/Kg	8260B
2-Butanone (MEK)	89		31	ug/Kg	8260B
Acetone	140		31	ug/Kg	8260B
Benzene	17		6.2	ug/Kg	8260B
Cyclohexane	3.2	J	6.2	ug/Kg	8260B
Ethylbenzene	1900	E	6.2	ug/Kg	8260B
Ethylbenzene	270000		24000	ug/Kg	8260B
Isopropylbenzene	770	E	6.2	ug/Kg	8260B
Isopropylbenzene	29000		24000	ug/Kg	8260B
Methylcyclohexane	26		6.2	ug/Kg	8260B
Styrene	240		6.2	ug/Kg	8260B
Toluene	3900	E	6.2	ug/Kg	8260B
Toluene	630000		24000	ug/Kg	8260B
Xylenes, Total	6700	E	12	ug/Kg	8260B
Xylenes, Total	1000000		49000	ug/Kg	8260B
Biphenyl	7700	J	43000	ug/Kg	8270C
2,4-Dimethylphenol	67000		43000	ug/Kg	8270C
Anthracene	8200	J	43000	ug/Kg	8270C
Benzo(a)anthracene	8800	J	43000	ug/Kg	8270C
Benzo(b)fluoranthene	8800	J	43000	ug/Kg	8270C
Benzo(g,h,i)perylene	3200	J	43000	ug/Kg	8270C
Benzo(k)fluoranthene	4900	J B	43000	ug/Kg	8270C
Bis(2-ethylhexyl) phthalate	23000	J	43000	ug/Kg	8270C
Chrysene	8600	J B	43000	ug/Kg	8270C
Fluoranthene	22000	J	43000	ug/Kg	8270C
Fluorene	5900	J	43000	ug/Kg	8270C
Naphthalene	63000		43000	ug/Kg	8270C
Phenanthrene	35000	J	43000	ug/Kg	8270C
Pyrene	17000	J	43000	ug/Kg	8270C
Percent Moisture	21		0.10	%	Moisture
Percent Solids	80		0.10	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: CHA Inc

Job Number: 480-18049-1

Lab Sample ID Client Sample ID Analyte	Result	Qualifier	Reporting Limit	Units	Method
480-18049-5 SB04 SS (2-3) 040212					
1,2-Dichlorobenzene	59		6.0	ug/Kg	8260B
1,2-Dichlorobenzene	2100		880	ug/Kg	8260B
2-Butanone (MEK)	77		30	ug/Kg	8260B
4-Methyl-2-pentanone (MIBK)	12	J	30	ug/Kg	8260B
4-Methyl-2-pentanone (MIBK)	4800		4400	ug/Kg	8260B
Acetone	150		30	ug/Kg	8260B
Benzene	2.3	J	6.0	ug/Kg	8260B
Ethylbenzene	1100	E	6.0	ug/Kg	8260B
Ethylbenzene	38000		880	ug/Kg	8260B
Isopropylbenzene	200		6.0	ug/Kg	8260B
Isopropylbenzene	5600		880	ug/Kg	8260B
Methyl acetate	1.2	J	6.0	ug/Kg	8260B
Methyl acetate	25000		880	ug/Kg	8260B
Methylcyclohexane	4.9	J	6.0	ug/Kg	8260B
Styrene	110		6.0	ug/Kg	8260B
Toluene	2200	E	6.0	ug/Kg	8260B
Toluene	63000		880	ug/Kg	8260B
Xylenes, Total	3600	E	12	ug/Kg	8260B
Xylenes, Total	150000		1800	ug/Kg	8260B
Biphenyl	6700	J	19000	ug/Kg	8270C
2,4-Dimethylphenol	23000		19000	ug/Kg	8270C
Acenaphthylene	650	J	19000	ug/Kg	8270C
Acetophenone	14000	J	19000	ug/Kg	8270C
Anthracene	2300	J	19000	ug/Kg	8270C
Benzo(a)anthracene	3300	J	19000	ug/Kg	8270C
Benzo(b)fluoranthene	2900	J	19000	ug/Kg	8270C
Benzo(k)fluoranthene	1700	J B	19000	ug/Kg	8270C
Chrysene	3000	J B	19000	ug/Kg	8270C
Dibenzofuran	3300	J	19000	ug/Kg	8270C
Fluoranthene	7500	J	19000	ug/Kg	8270C
Fluorene	2200	J	19000	ug/Kg	8270C
Indeno(1,2,3-cd)pyrene	1200	J	19000	ug/Kg	8270C
Naphthalene	42000		19000	ug/Kg	8270C
Phenanthrene	12000	J	19000	ug/Kg	8270C
Pyrene	5800	J	19000	ug/Kg	8270C
Percent Moisture	13		0.10	%	Moisture
Percent Solids	87		0.10	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: CHA Inc

Job Number: 480-18049-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
480-18049-6	**SB05 SS (1-2 040212**					
2-Butanone (MEK)		9.6	J	29	ug/Kg	8260B
Acetone		420		29	ug/Kg	8260B
Benzene		1.1	J	5.8	ug/Kg	8260B
Ethylbenzene		38	B	5.8	ug/Kg	8260B
Isopropylbenzene		7.3		5.8	ug/Kg	8260B
Toluene		54		5.8	ug/Kg	8260B
Xylenes, Total		2700	B	79	ug/Kg	8260B
2-Methylnaphthalene		640	J	4000	ug/Kg	8270C
Acenaphthene		160	J	4000	ug/Kg	8270C
Benzo(a)anthracene		220	J	4000	ug/Kg	8270C
Chrysene		320	J B	4000	ug/Kg	8270C
Naphthalene		520	J	4000	ug/Kg	8270C
Phenanthrene		400	J	4000	ug/Kg	8270C
Phenol		2700	J	4000	ug/Kg	8270C
Percent Moisture		16		0.10	%	Moisture
Percent Solids		84		0.10	%	Moisture
480-18049-7	**SB05 SS (0-3) 040212**					
Flashpoint		>176.0		50.0	Degrees F	1010
pH		10.5		0.100	SU	9045C
Percent Moisture		19		0.10	%	Moisture
Percent Solids		81		0.10	%	Moisture
TCLP						
3-Methylphenol		0.050		0.010	mg/L	8270C
4-Methylphenol		0.050		0.010	mg/L	8270C
Arsenic		0.0082	J	0.010	mg/L	6010B
Barium		0.54	B	0.0020	mg/L	6010B
Cadmium		0.0019		0.0010	mg/L	6010B
Chromium		0.0041	B	0.0040	mg/L	6010B
Lead		0.020		0.0050	mg/L	6010B

EXECUTIVE SUMMARY - Detections

Client: CHA Inc

Job Number: 480-18049-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
480-18049-8	**SB06 SS (3-4) 040212**					
Ethylbenzene		3500000		250000	ug/Kg	8260B
Isopropylbenzene		13000		6200	ug/Kg	8260B
Styrene		83000		6200	ug/Kg	8260B
Toluene		130000		6200	ug/Kg	8260B
Xylenes, Total		15000000		490000	ug/Kg	8260B
Biphenyl		2800		2100	ug/Kg	8270C
2-Methylnaphthalene		32000		2100	ug/Kg	8270C
Acetophenone		13000		2100	ug/Kg	8270C
Anthracene		200	J	2100	ug/Kg	8270C
Benzo(a)anthracene		130	J	2100	ug/Kg	8270C
Dibenzofuran		1200	J	2100	ug/Kg	8270C
Fluoranthene		250	J	2100	ug/Kg	8270C
Fluorene		610	J	2100	ug/Kg	8270C
Naphthalene		48000		2100	ug/Kg	8270C
Phenanthrene		930	J	2100	ug/Kg	8270C
Pyrene		210	J	2100	ug/Kg	8270C
Percent Moisture		21		0.10	%	Moisture
Percent Solids		79		0.10	%	Moisture
480-18049-9	**SB07 SS (1-2) 040212**					
Ethylbenzene		13	B	6.4	ug/Kg	8260B
Toluene		3.0	J	6.4	ug/Kg	8260B
Xylenes, Total		140	B	13	ug/Kg	8260B
Biphenyl		22	J	220	ug/Kg	8270C
2-Methylnaphthalene		94	J	220	ug/Kg	8270C
Acenaphthene		5.9	J	220	ug/Kg	8270C
Benzo(a)anthracene		14	J	220	ug/Kg	8270C
Benzo(b)fluoranthene		16	J	220	ug/Kg	8270C
Bis(2-ethylhexyl) phthalate		110	J	220	ug/Kg	8270C
Chrysene		14	J B	220	ug/Kg	8270C
Fluoranthene		15	J	220	ug/Kg	8270C
Fluorene		10	J	220	ug/Kg	8270C
Naphthalene		63	J	220	ug/Kg	8270C
Phenanthrene		26	J	220	ug/Kg	8270C
Percent Moisture		23		0.10	%	Moisture
Percent Solids		77		0.10	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: CHA Inc

Job Number: 480-18049-1

Lab Sample ID Client Sample ID Analyte	Result	Qualifier	Reporting Limit	Units	Method
480-18049-10 SB07 SS (3-4) 040212					
Acetone	10	J	30	ug/Kg	8260B
Ethylbenzene	6.4	B	6.1	ug/Kg	8260B
Toluene	14		6.1	ug/Kg	8260B
Xylenes, Total	25	B	12	ug/Kg	8260B
Biphenyl	87	J	220	ug/Kg	8270C
2-Methylnaphthalene	430		220	ug/Kg	8270C
Anthracene	15	J	220	ug/Kg	8270C
Benzo(a)anthracene	18	J	220	ug/Kg	8270C
Benzo(a)pyrene	9.4	J	220	ug/Kg	8270C
Benzo(b)fluoranthene	19	J	220	ug/Kg	8270C
Bis(2-ethylhexyl) phthalate	120	J	220	ug/Kg	8270C
Chrysene	19	J B	220	ug/Kg	8270C
Dibenzofuran	42	J	220	ug/Kg	8270C
Fluoranthene	41	J	220	ug/Kg	8270C
Fluorene	31	J	220	ug/Kg	8270C
Naphthalene	230		220	ug/Kg	8270C
Phenanthrene	84	J	220	ug/Kg	8270C
Pyrene	27	J	220	ug/Kg	8270C
Percent Moisture	23		0.10	%	Moisture
Percent Solids	77		0.10	%	Moisture
480-18049-11 SB10 SS (1-2) 040212					
Ethylbenzene	220		110	ug/Kg	8260B
Toluene	140		110	ug/Kg	8260B
Xylenes, Total	2100		220	ug/Kg	8260B
Benzo(a)anthracene	470	J	3900	ug/Kg	8270C
Benzo(a)pyrene	320	J	3900	ug/Kg	8270C
Benzo(b)fluoranthene	670	J	3900	ug/Kg	8270C
Benzo(k)fluoranthene	280	J B	3900	ug/Kg	8270C
Bis(2-ethylhexyl) phthalate	1900	J	3900	ug/Kg	8270C
Chrysene	490	J B	3900	ug/Kg	8270C
Fluoranthene	700	J	3900	ug/Kg	8270C
Phenanthrene	380	J	3900	ug/Kg	8270C
Pyrene	560	J	3900	ug/Kg	8270C
Percent Moisture	13		0.10	%	Moisture
Percent Solids	87		0.10	%	Moisture
480-18049-12 SB10 SS (3-4) 040212					
Toluene	42	J	120	ug/Kg	8260B
Xylenes, Total	91	J	240	ug/Kg	8260B
Pyrene	42	J	200	ug/Kg	8270C
Percent Moisture	19		0.10	%	Moisture
Percent Solids	81		0.10	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: CHA Inc Job Number: 480-18049-1

Lab Sample ID Client Sample ID Analyte	Result	Qualifier	Reporting Limit	Units	Method
480-18049-13 SB11 SS (2-3) 040212					
Acetone	42		31	ug/Kg	8260B
Ethylbenzene	16		6.1	ug/Kg	8260B
Toluene	41		6.1	ug/Kg	8260B
Xylenes, Total	65	B	12	ug/Kg	8260B
Benzo(a)anthracene	12	J	190	ug/Kg	8270C
Benzo(a)pyrene	12	J	190	ug/Kg	8270C
Benzo(b)fluoranthene	19	J	190	ug/Kg	8270C
Bis(2-ethylhexyl) phthalate	98	J	190	ug/Kg	8270C
Chrysene	18	J B	190	ug/Kg	8270C
Fluoranthene	21	J	190	ug/Kg	8270C
Pyrene	15	J	190	ug/Kg	8270C
Percent Moisture	11		0.10	%	Moisture
Percent Solids	89		0.10	%	Moisture
480-18049-14 SB14 SS (1-2)040212					
Ethylbenzene	1.4	J	5.9	ug/Kg	8260B
Xylenes, Total	8.6	J B	12	ug/Kg	8260B
4-Methylphenol	47	J	370	ug/Kg	8270C
Benzo(a)anthracene	29	J	190	ug/Kg	8270C
Benzo(a)pyrene	27	J	190	ug/Kg	8270C
Benzo(b)fluoranthene	24	J	190	ug/Kg	8270C
Benzo(g,h,i)perylene	17	J	190	ug/Kg	8270C
Benzo(k)fluoranthene	35	J B	190	ug/Kg	8270C
Bis(2-ethylhexyl) phthalate	100	J	190	ug/Kg	8270C
Chrysene	34	J B	190	ug/Kg	8270C
Fluoranthene	48	J	190	ug/Kg	8270C
Indeno(1,2,3-cd)pyrene	16	J	190	ug/Kg	8270C
Phenanthrene	16	J	190	ug/Kg	8270C
Pyrene	37	J	190	ug/Kg	8270C
Percent Moisture	13		0.10	%	Moisture
Percent Solids	87		0.10	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: CHA Inc

Job Number: 480-18049-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
480-18049-15	**SB14 SS (2-3) 040212**					
Ethylbenzene		5.3		5.3	ug/Kg	8260B
Toluene		4.6	J	5.3	ug/Kg	8260B
Xylenes, Total		13	B	11	ug/Kg	8260B
Benzo(a)anthracene		15	J	190	ug/Kg	8270C
Benzo(a)pyrene		11	J	190	ug/Kg	8270C
Benzo(b)fluoranthene		17	J	190	ug/Kg	8270C
Benzo(k)fluoranthene		11	J B	190	ug/Kg	8270C
Chrysene		17	J B	190	ug/Kg	8270C
Fluoranthene		17	J	190	ug/Kg	8270C
Phenanthrene		8.1	J	190	ug/Kg	8270C
Pyrene		14	J	190	ug/Kg	8270C
Percent Moisture		13		0.10	%	Moisture
Percent Solids		87		0.10	%	Moisture
480-18049-16	**SB13 SS (1-2) 040212**					
Ethylbenzene		4.5	J	5.6	ug/Kg	8260B
Toluene		12		5.6	ug/Kg	8260B
Xylenes, Total		15	B	11	ug/Kg	8260B
Benzo(a)anthracene		76	J	1900	ug/Kg	8270C
Chrysene		52	J B	1900	ug/Kg	8270C
Percent Moisture		10		0.10	%	Moisture
Percent Solids		90		0.10	%	Moisture
480-18049-17	**SB13 SS (2-3) 040212**					
Acetone		32		28	ug/Kg	8260B
Ethylbenzene		13		5.7	ug/Kg	8260B
Toluene		33		5.7	ug/Kg	8260B
Xylenes, Total		45	B	11	ug/Kg	8260B
Benzo(a)anthracene		140	J	1900	ug/Kg	8270C
Benzo(a)pyrene		69	J	1900	ug/Kg	8270C
Chrysene		190	J B	1900	ug/Kg	8270C
Phenanthrene		270	J	1900	ug/Kg	8270C
Pyrene		260	J	1900	ug/Kg	8270C
Percent Moisture		14		0.10	%	Moisture
Percent Solids		86		0.10	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: CHA Inc

Job Number: 480-18049-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
480-18049-18	**SB08 SS (1-2) 040212**					
2-Butanone (MEK)		64		34	ug/Kg	8260B
Acetone		720		34	ug/Kg	8260B
Ethylbenzene		8.8		6.7	ug/Kg	8260B
Toluene		26		6.7	ug/Kg	8260B
Xylenes, Total		34	B	13	ug/Kg	8260B
Benzo(a)anthracene		3200	J	46000	ug/Kg	8270C
Benzo(a)pyrene		2200	J	46000	ug/Kg	8270C
Chrysene		3700	J B	46000	ug/Kg	8270C
Fluoranthene		4400	J	46000	ug/Kg	8270C
Pyrene		4600	J	46000	ug/Kg	8270C
Percent Moisture		26		0.10	%	Moisture
Percent Solids		74		0.10	%	Moisture
480-18049-19	**SB08 SS (2-3) 040212**					
Ethylbenzene		3.3	J	5.4	ug/Kg	8260B
Toluene		3.1	J	5.4	ug/Kg	8260B
Xylenes, Total		11	B	11	ug/Kg	8260B
Benzo(a)anthracene		68	J	1000	ug/Kg	8270C
Benzo(a)pyrene		110	J	1000	ug/Kg	8270C
Benzo(b)fluoranthene		110	J	1000	ug/Kg	8270C
Benzo(k)fluoranthene		48	J B	1000	ug/Kg	8270C
Chrysene		86	J B	1000	ug/Kg	8270C
Fluoranthene		63	J	1000	ug/Kg	8270C
Indeno(1,2,3-cd)pyrene		75	J	1000	ug/Kg	8270C
Pyrene		84	J	1000	ug/Kg	8270C
Percent Moisture		17		0.10	%	Moisture
Percent Solids		83		0.10	%	Moisture
480-18049-20	**SB12 SS (0-1) 040212**					
Ethylbenzene		2.7	J	5.2	ug/Kg	8260B
Toluene		5.1	J	5.2	ug/Kg	8260B
Xylenes, Total		7.0	J B	10	ug/Kg	8260B
Benzo(a)anthracene		63	J	960	ug/Kg	8270C
Chrysene		72	J B	960	ug/Kg	8270C
Fluoranthene		69	J	960	ug/Kg	8270C
Percent Moisture		12		0.10	%	Moisture
Percent Solids		88		0.10	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: CHA Inc

Job Number: 480-18049-1

Lab Sample ID Client Sample ID Analyte	Result	Qualifier	Reporting Limit	Units	Method
480-18049-21 **SB12 SS (2-3)040212**					
Ethylbenzene	3.8	J	4.6	ug/Kg	8260B
Isopropylbenzene	1.0	J	4.6	ug/Kg	8260B
Toluene	3.7	J	4.6	ug/Kg	8260B
Xylenes, Total	42	B	9.3	ug/Kg	8260B
2-Methylnaphthalene	860	J	3700	ug/Kg	8270C
Acenaphthene	200	J	3700	ug/Kg	8270C
Acetophenone	2800	J	3700	ug/Kg	8270C
Anthracene	420	J	3700	ug/Kg	8270C
Benzo(a)anthracene	930	J	3700	ug/Kg	8270C
Benzo(a)pyrene	590	J	3700	ug/Kg	8270C
Benzo(b)fluoranthene	710	J	3700	ug/Kg	8270C
Benzo(g,h,i)perylene	190	J	3700	ug/Kg	8270C
Benzo(k)fluoranthene	440	J B	3700	ug/Kg	8270C
Chrysene	750	J B	3700	ug/Kg	8270C
Dibenz(a,h)anthracene	2200	J	3700	ug/Kg	8270C
Fluoranthene	1600	J	3700	ug/Kg	8270C
Indeno(1,2,3-cd)pyrene	300	J	3700	ug/Kg	8270C
Naphthalene	5600		3700	ug/Kg	8270C
Phenanthrene	1200	J	3700	ug/Kg	8270C
Pyrene	1200	J	3700	ug/Kg	8270C
Percent Moisture	7.9		0.10	%	Moisture
Percent Solids	92		0.10	%	Moisture
480-18049-22 **SB09 SS (1-2) 040212**					
1,2-Dichlorobenzene	230		120	ug/Kg	8260B
2-Hexanone	420	J	580	ug/Kg	8260B
Ethylbenzene	300		120	ug/Kg	8260B
Isopropylbenzene	520		120	ug/Kg	8260B
Methylcyclohexane	950		120	ug/Kg	8260B
Toluene	110	J	120	ug/Kg	8260B
Xylenes, Total	2400		230	ug/Kg	8260B
Biphenyl	330	J	4000	ug/Kg	8270C
Anthracene	290	J	4000	ug/Kg	8270C
Benzo(a)anthracene	680	J	4000	ug/Kg	8270C
Benzo(a)pyrene	380	J	4000	ug/Kg	8270C
Benzo(b)fluoranthene	410	J	4000	ug/Kg	8270C
Benzo(k)fluoranthene	520	J B	4000	ug/Kg	8270C
Chrysene	590	J B	4000	ug/Kg	8270C
Fluoranthene	1200	J	4000	ug/Kg	8270C
Phenanthrene	1200	J	4000	ug/Kg	8270C
Pyrene	910	J	4000	ug/Kg	8270C
Percent Moisture	15		0.10	%	Moisture
Percent Solids	85		0.10	%	Moisture

EXECUTIVE SUMMARY - Detections

Client: CHA Inc Job Number: 480-18049-1

Lab Sample ID	Client Sample ID			Reporting		
Analyte		**Result**	**Qualifier**	**Limit**	**Units**	**Method**
480-18049-23	**SB09 SS (3-4) 040212**					
Ethylbenzene		0.97	J	4.9	ug/Kg	8260B
Toluene		3.0	J	4.9	ug/Kg	8260B
Xylenes, Total		2.7	J B	9.8	ug/Kg	8260B
Benzo(a)anthracene		47	J	1900	ug/Kg	8270C
Bis(2-ethylhexyl) phthalate		1100	J	1900	ug/Kg	8270C
Percent Moisture		12		0.10	%	Moisture
Percent Solids		88		0.10	%	Moisture
480-18049-24	**SB15 SS (1-2) 040212**					
Ethylbenzene		6.0		5.3	ug/Kg	8260B
Toluene		5.6		5.3	ug/Kg	8260B
Xylenes, Total		16		11	ug/Kg	8260B
Benzo(a)anthracene		62	J	1900	ug/Kg	8270C
Percent Moisture		14		0.10	%	Moisture
Percent Solids		86		0.10	%	Moisture
480-18049-25	**SB15 SS (3-4) 040212**					
2-Butanone (MEK)		12	J	28	ug/Kg	8260B
Acetone		81		28	ug/Kg	8260B
Ethylbenzene		5.2	J	5.6	ug/Kg	8260B
Toluene		17		5.6	ug/Kg	8260B
Xylenes, Total		16		11	ug/Kg	8260B
Benzo(a)anthracene		210	J	1800	ug/Kg	8270C
Benzo(a)pyrene		160	J	1800	ug/Kg	8270C
Benzo(b)fluoranthene		220	J	1800	ug/Kg	8270C
Benzo(k)fluoranthene		140	J	1800	ug/Kg	8270C
Bis(2-ethylhexyl) phthalate		1000	J	1800	ug/Kg	8270C
Chrysene		200	J	1800	ug/Kg	8270C
Fluoranthene		300	J	1800	ug/Kg	8270C
Phenanthrene		210	J	1800	ug/Kg	8270C
Pyrene		300	J	1800	ug/Kg	8270C
Percent Moisture		10		0.10	%	Moisture
Percent Solids		90		0.10	%	Moisture
480-18049-26	**SB06 SS (1-2) 040212**					
Ethylbenzene		2.4	J	5.4	ug/Kg	8260B
Xylenes, Total		0.95	J	11	ug/Kg	8260B
Benzo(a)anthracene		140	J	3800	ug/Kg	8270C
Chrysene		74	J	3800	ug/Kg	8270C
Percent Moisture		11		0.10	%	Moisture
Percent Solids		89		0.10	%	Moisture

METHOD SUMMARY

Client: CHA Inc

Job Number: 480-18049-1

Description	Lab Location	Method	Preparation Method
Matrix Solid			
Volatile Organic Compounds (GC/MS)	TAL BUF	SW846 8260B	
Closed System Purge and Trap	TAL BUF		SW846 5035
Volatile Organic Compounds (GC/MS)	TAL BUF	SW846 8260B	
Purge and Trap	TAL BUF		SW846 5035
Volatile Organic Compounds (GC/MS)	TAL BUF	SW846 8260B	
TCLP Extraction	TAL BUF		SW846 1311
Purge and Trap	TAL BUF		SW846 5030B
Semivolatile Organic Compounds (GC/MS)	TAL BUF	SW846 8270C	
Ultrasonic Extraction	TAL BUF		SW846 3550B
Semivolatile Organic Compounds (GC/MS)	TAL BUF	SW846 8270C	
TCLP Extraction	TAL BUF		SW846 1311
Liquid-Liquid Extraction (Separatory Funnel)	TAL BUF		SW846 3510C
Metals (ICP)	TAL BUF	SW846 6010B	
TCLP Extraction	TAL BUF		SW846 1311
Preparation, Total Metals	TAL BUF		SW846 3010A
Mercury (CVAA)	TAL BUF	SW846 7470A	
TCLP Extraction	TAL BUF		SW846 1311
Preparation, Mercury	TAL BUF		SW846 7470A
Ignitability, Pensky-Martens Closed-Cup Method	TAL BUF	SW846 1010	
Cyanide, Reactive	TAL BUF	SW846 9012	
Cyanide, Reactive	TAL BUF		SW846 7.3.3
Sulfide, Reactive	TAL BUF	SW846 9034	
Sulfide, Reactive	TAL BUF		SW846 7.3.4
pH	TAL BUF	SW846 9045C	
Percent Moisture	TAL BUF	EPA Moisture	

Lab References:

TAL BUF = TestAmerica Buffalo

Method References:

EPA = US Environmental Protection Agency

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

METHOD / ANALYST SUMMARY

Client: CHA Inc

Job Number: 480-18049-1

Method	Analyst	Analyst ID
SW846 8260B	Byrnes, Jennifer M	JMB
SW846 8260B	Coder, David	DC
SW846 8260B	Cwiklinski, Charles D	CDC
SW846 8260B	Larson, Renee	RL
SW846 8270C	Ly, Hau T	HTL
SW846 6010B	Hanks, Lisa	LH
SW846 7470A	Kacalski, Jason	JRK
SW846 1010	Shantz, Katelyn	KS
SW846 9012	Rojecki, James	JR
SW846 9034	Rojecki, James	JR
SW846 9045C	Nyznyk, Elizabeth G	EGN
EPA Moisture	Robitaille, Zach L	ZLR

Client Sample ID: **SB01 SS (2-3) 040212**

Lab Sample ID:	480-18049-1			Date Sampled:	04/02/2012 0915
Client Matrix:	Solid	% Moisture:	10.8	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58043	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7754.D
Dilution:	1.0			Initial Weight/Volume:	4.94 g
Analysis Date:	04/04/2012 1438			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.41	5.7
1,1,2,2-Tetrachloroethane		ND		0.92	5.7
1,1,2-Trichloroethane		ND		0.74	5.7
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.3	5.7
1,1-Dichloroethane		ND		0.69	5.7
1,1-Dichloroethene		ND		0.69	5.7
1,2,4-Trichlorobenzene		ND		0.35	5.7
1,2-Dibromo-3-Chloropropane		ND		2.8	5.7
1,2-Dibromoethane		ND		0.73	5.7
1,2-Dichlorobenzene		ND		0.44	5.7
1,2-Dichloroethane		ND		0.28	5.7
1,2-Dichloropropane		ND		2.8	5.7
1,3-Dichlorobenzene		ND		0.29	5.7
1,4-Dichlorobenzene		ND		0.79	5.7
2-Hexanone		ND		2.8	28
2-Butanone (MEK)		8.5	J	2.1	28
4-Methyl-2-pentanone (MIBK)		ND		1.9	28
Acetone		180		4.8	28
Benzene		1.5	J	0.28	5.7
Bromodichloromethane		ND		0.76	5.7
Bromoform		ND		2.8	5.7
Bromomethane		ND		0.51	5.7
Carbon disulfide		ND		2.8	5.7
Carbon tetrachloride		ND		0.55	5.7
Chlorobenzene		ND		0.75	5.7
Dibromochloromethane		ND		0.73	5.7
Chloroethane		ND		1.3	5.7
Chloroform		ND		0.35	5.7
Chloromethane		ND		0.34	5.7
cis-1,2-Dichloroethene		ND		0.73	5.7
cis-1,3-Dichloropropene		ND		0.82	5.7
Cyclohexane		12		0.79	5.7
Dichlorodifluoromethane		ND		0.47	5.7
Ethylbenzene		640	E	0.39	5.7
Isopropylbenzene		54		0.86	5.7
Methyl acetate		ND		1.1	5.7
Methyl tert-butyl ether		ND		0.56	5.7
Methylcyclohexane		260	E	0.86	5.7
Methylene Chloride		ND		2.6	5.7
Styrene		ND		0.28	5.7
Tetrachloroethene		ND		0.76	5.7
Toluene		230	E	0.43	5.7
trans-1,2-Dichloroethene		ND		0.59	5.7
trans-1,3-Dichloropropene		ND		2.5	5.7
Trichloroethene		ND		1.2	5.7
Trichlorofluoromethane		ND		0.54	5.7

Client Sample ID: **SB01 SS (2-3) 040212**

Lab Sample ID:	480-18049-1			Date Sampled: 04/02/2012 0915
Client Matrix:	Solid	% Moisture:	10.8	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58043	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7754.D
Dilution:	1.0			Initial Weight/Volume:	4.94 g
Analysis Date:	04/04/2012 1438			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.69	5.7
Xylenes, Total		3700	E	0.95	11

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	118		64 - 126
Toluene-d8 (Surr)	110		71 - 125
4-Bromofluorobenzene (Surr)	105		72 - 126

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB01 SS (2-3) 040212**

Lab Sample ID: 480-18049-1

Client Matrix: Solid

% Moisture: 10.8

Date Sampled: 04/02/2012 0915

Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58481	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10723.D
Dilution:	5.0			Initial Weight/Volume:	5.09 g
Analysis Date:	04/06/2012 1323	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		150	550
1,1,2,2-Tetrachloroethane		ND		89	550
1,1,2-Trichloroethane		ND		120	550
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		280	550
1,1-Dichloroethane		ND		170	550
1,1-Dichloroethene		ND		190	550
1,2,4-Trichlorobenzene		ND		210	550
1,2-Dibromo-3-Chloropropane		ND		280	550
1,2-Dibromoethane		ND		21	550
1,2-Dichlorobenzene		ND		140	550
1,2-Dichloroethane		ND		230	550
1,2-Dichloropropane		ND		89	550
1,3-Dichlorobenzene		ND		150	550
1,4-Dichlorobenzene		ND		77	550
2-Hexanone		2600	J	1100	2800
2-Butanone (MEK)		ND		1600	2800
4-Methyl-2-pentanone (MIBK)		ND		180	2800
Acetone		ND		2300	2800
Benzene		ND		26	550
Bromodichloromethane		ND		110	550
Bromoform		ND		280	550
Bromomethane		ND		120	550
Carbon disulfide		ND		250	550
Carbon tetrachloride		ND		140	550
Chlorobenzene		ND		73	550
Dibromochloromethane		ND		270	550
Chloroethane		ND		110	550
Chloroform		ND		380	550
Chloromethane		ND		130	550
cis-1,2-Dichloroethene		ND		150	550
cis-1,3-Dichloropropene		ND		130	550
Cyclohexane		530	J	120	550
Dichlorodifluoromethane		ND		240	550
Ethylbenzene		11000		160	550
Isopropylbenzene		1900		83	550
Methyl acetate		ND		260	550
Methyl tert-butyl ether		ND		210	550
Methylcyclohexane		19000		260	550
Methylene Chloride		ND		110	550
Styrene		ND		130	550
Tetrachloroethene		ND		74	550
Toluene		2200		150	550
trans-1,2-Dichloroethene		ND		130	550
trans-1,3-Dichloropropene		ND		26	550
Trichloroethene		ND		150	550
Trichlorofluoromethane		ND		260	550

Client Sample ID: **SB01 SS (2-3) 040212**

Lab Sample ID:	480-18049-1			Date Sampled: 04/02/2012 0915
Client Matrix:	Solid	% Moisture:	10.8	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58481	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10723.D
Dilution:	5.0			Initial Weight/Volume:	5.09 g
Analysis Date:	04/06/2012 1323	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		180	550
Xylenes, Total		120000		93	1100

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		53 - 146
Toluene-d8 (Surr)	53		50 - 149
4-Bromofluorobenzene (Surr)	53		49 - 148

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB02 SS (2-3) 040212**

Lab Sample ID:	480-18049-2			Date Sampled: 04/02/2012 1004
Client Matrix:	Solid	% Moisture:	13.3	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58389	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10708.D
Dilution:	1.0			Initial Weight/Volume:	5.16 g
Analysis Date:	04/06/2012 0615			Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		31	110
1,1,2,2-Tetrachloroethane		ND		18	110
1,1,2-Trichloroethane		ND		23	110
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		56	110
1,1-Dichloroethane		ND		35	110
1,1-Dichloroethene		ND		39	110
1,2,4-Trichlorobenzene		ND		42	110
1,2-Dibromo-3-Chloropropane		ND		56	110
1,2-Dibromoethane		ND		4.2	110
1,2-Dichlorobenzene		3600		28	110
1,2-Dichloroethane		ND		46	110
1,2-Dichloropropane		ND		18	110
1,3-Dichlorobenzene		ND		30	110
1,4-Dichlorobenzene		ND		16	110
2-Hexanone		ND		230	560
2-Butanone (MEK)		ND		330	560
4-Methyl-2-pentanone (MIBK)		ND		36	560
Acetone		ND		460	560
Benzene		82	J	5.4	110
Bromodichloromethane		ND		22	110
Bromoform		ND		56	110
Bromomethane		ND		25	110
Carbon disulfide		ND		51	110
Carbon tetrachloride		ND		28	110
Chlorobenzene		ND		15	110
Dibromochloromethane		ND		54	110
Chloroethane		ND		23	110
Chloroform		ND		77	110
Chloromethane		ND		27	110
cis-1,2-Dichloroethene		ND		31	110
cis-1,3-Dichloropropene		ND		27	110
Cyclohexane		ND		25	110
Dichlorodifluoromethane		ND		49	110
Ethylbenzene		41000	E	33	110
Isopropylbenzene		3600		17	110
Methyl acetate		ND		53	110
Methyl tert-butyl ether		ND		42	110
Methylcyclohexane		660		52	110
Methylene Chloride		ND		22	110
Styrene		ND		27	110
Tetrachloroethene		ND		15	110
Toluene		56000	E	30	110
trans-1,2-Dichloroethene		ND		26	110
trans-1,3-Dichloropropene		ND		5.4	110
Trichloroethene		ND		31	110
Trichlorofluoromethane		ND		52	110

Client Sample ID:	**SB02 SS (2-3) 040212**		
Lab Sample ID:	480-18049-2		Date Sampled: 04/02/2012 1004
Client Matrix:	Solid	% Moisture: 13.3	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58389	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10708.D
Dilution:	1.0			Initial Weight/Volume:	5.16 g
Analysis Date:	04/06/2012 0615			Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		37	110
Xylenes, Total		110000	E	19	220

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	119		53 - 146
Toluene-d8 (Surr)	109		50 - 149
4-Bromofluorobenzene (Surr)	120		49 - 148

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB02 SS (2-3) 040212**

Lab Sample ID:	480-18049-2			Date Sampled:	04/02/2012 1004
Client Matrix:	Solid	% Moisture:	13.3	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58481	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10724.D
Dilution:	10			Initial Weight/Volume:	5.16 g
Analysis Date:	04/06/2012 1346	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		310	1100
1,1,2,2-Tetrachloroethane		ND		180	1100
1,1,2-Trichloroethane		ND		230	1100
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		560	1100
1,1-Dichloroethane		ND		350	1100
1,1-Dichloroethene		ND		390	1100
1,2,4-Trichlorobenzene		ND		420	1100
1,2-Dibromo-3-Chloropropane		ND		560	1100
1,2-Dibromoethane		ND		42	1100
1,2-Dichlorobenzene		3500		280	1100
1,2-Dichloroethane		ND		460	1100
1,2-Dichloropropane		ND		180	1100
1,3-Dichlorobenzene		ND		300	1100
1,4-Dichlorobenzene		ND		160	1100
2-Hexanone		ND		2300	5600
2-Butanone (MEK)		ND		3300	5600
4-Methyl-2-pentanone (MIBK)		ND		360	5600
Acetone		ND		4600	5600
Benzene		ND		54	1100
Bromodichloromethane		ND		220	1100
Bromoform		ND		560	1100
Bromomethane		ND		250	1100
Carbon disulfide		ND		510	1100
Carbon tetrachloride		ND		280	1100
Chlorobenzene		ND		150	1100
Dibromochloromethane		ND		540	1100
Chloroethane		ND		230	1100
Chloroform		ND		770	1100
Chloromethane		ND		270	1100
cis-1,2-Dichloroethene		ND		310	1100
cis-1,3-Dichloropropene		ND		270	1100
Cyclohexane		ND		250	1100
Dichlorodifluoromethane		ND		490	1100
Ethylbenzene		71000		330	1100
Isopropylbenzene		2700		170	1100
Methyl acetate		ND		530	1100
Methyl tert-butyl ether		ND		420	1100
Methylcyclohexane		550	J	520	1100
Methylene Chloride		ND		220	1100
Styrene		ND		270	1100
Tetrachloroethene		ND		150	1100
Toluene		90000		300	1100
trans-1,2-Dichloroethene		ND		260	1100
trans-1,3-Dichloropropene		ND		54	1100
Trichloroethene		ND		310	1100
Trichlorofluoromethane		ND		520	1100

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB02 SS (2-3) 040212**

Lab Sample ID: 480-18049-2

Client Matrix: Solid

% Moisture: 13.3

Date Sampled: 04/02/2012 1004

Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58481	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10724.D
Dilution:	10			Initial Weight/Volume:	5.16 g
Analysis Date:	04/06/2012 1346	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		370	1100
Xylenes, Total		140000		190	2200

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	112		53 - 146
Toluene-d8 (Surr)	116		50 - 149
4-Bromofluorobenzene (Surr)	119		49 - 148

Client Sample ID: **SB02 SS (0-3) 040212**

Lab Sample ID:	480-18049-3	Date Sampled:	04/02/2012 1004
Client Matrix:	Solid	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)-TCLP

Analysis Method:	8260B	Analysis Batch:	480-58568	Instrument ID:	HP5973G
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	G10758.D
Dilution:	10	Leach Batch:	480-58276	Initial Weight/Volume:	5 mL
Analysis Date:	04/07/2012 0322			Final Weight/Volume:	5 mL
Prep Date:	04/07/2012 0322				
Leach Date:	04/05/2012 1014				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Benzene		ND		0.0041	0.010
Carbon tetrachloride		ND		0.0027	0.010
Chlorobenzene		ND		0.0075	0.010
Chloroform		ND		0.0034	0.010
1,2-Dichloroethane		ND		0.0021	0.010
1,1-Dichloroethene		ND		0.0029	0.010
2-Butanone (MEK)		ND		0.013	0.050
Tetrachloroethene		ND		0.0036	0.010
Trichloroethene		ND		0.0046	0.010
Vinyl chloride		ND		0.0090	0.010

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		66 - 137
Toluene-d8 (Surr)	107		71 - 126
4-Bromofluorobenzene (Surr)	108		73 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID:	**SB03 SS (1-2) 040212**			
Lab Sample ID:	480-18049-4			Date Sampled: 04/02/2012 1030
Client Matrix:	Solid	% Moisture:	20.5	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58043	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7756.D
Dilution:	1.0			Initial Weight/Volume:	5.05 g
Analysis Date:	04/04/2012 1529			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.45	6.2
1,1,2,2-Tetrachloroethane		ND		1.0	6.2
1,1,2-Trichloroethane		ND		0.81	6.2
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.4	6.2
1,1-Dichloroethane		ND		0.76	6.2
1,1-Dichloroethene		ND		0.76	6.2
1,2,4-Trichlorobenzene		ND		0.38	6.2
1,2-Dibromo-3-Chloropropane		ND		3.1	6.2
1,2-Dibromoethane		ND		0.80	6.2
1,2-Dichlorobenzene		220		0.49	6.2
1,2-Dichloroethane		ND		0.31	6.2
1,2-Dichloropropane		ND		3.1	6.2
1,3-Dichlorobenzene		ND		0.32	6.2
1,4-Dichlorobenzene		ND		0.87	6.2
2-Hexanone		ND		3.1	31
2-Butanone (MEK)		89		2.3	31
4-Methyl-2-pentanone (MIBK)		ND		2.0	31
Acetone		140		5.2	31
Benzene		17		0.31	6.2
Bromodichloromethane		ND		0.83	6.2
Bromoform		ND		3.1	6.2
Bromomethane		ND		0.56	6.2
Carbon disulfide		ND		3.1	6.2
Carbon tetrachloride		ND		0.60	6.2
Chlorobenzene		ND		0.82	6.2
Dibromochloromethane		ND		0.80	6.2
Chloroethane		ND		1.4	6.2
Chloroform		ND		0.38	6.2
Chloromethane		ND		0.38	6.2
cis-1,2-Dichloroethene		ND		0.80	6.2
cis-1,3-Dichloropropene		ND		0.90	6.2
Cyclohexane		3.2	J	0.87	6.2
Dichlorodifluoromethane		ND		0.51	6.2
Ethylbenzene		1900	E	0.43	6.2
Isopropylbenzene		770	E	0.94	6.2
Methyl acetate		ND		1.2	6.2
Methyl tert-butyl ether		ND		0.61	6.2
Methylcyclohexane		26		0.95	6.2
Methylene Chloride		ND		2.9	6.2
Styrene		240		0.31	6.2
Tetrachloroethene		ND		0.84	6.2
Toluene		3900	E	0.47	6.2
trans-1,2-Dichloroethene		ND		0.64	6.2
trans-1,3-Dichloropropene		ND		2.7	6.2
Trichloroethene		ND		1.4	6.2
Trichlorofluoromethane		ND		0.59	6.2

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB03 SS (1-2) 040212**

Lab Sample ID:	480-18049-4			Date Sampled: 04/02/2012 1030
Client Matrix:	Solid	% Moisture:	20.5	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58043	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7756.D
Dilution:	1.0			Initial Weight/Volume:	5.05 g
Analysis Date:	04/04/2012 1529			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.76	6.2
Xylenes, Total		6700	E	1.0	12

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	109		64 - 126
Toluene-d8 (Surr)	104		71 - 125
4-Bromofluorobenzene (Surr)	96		72 - 126

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB03 SS (1-2) 040212**

Lab Sample ID: 480-18049-4

Client Matrix: Solid

% Moisture: 20.5

Date Sampled: 04/02/2012 1030

Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58568	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10770.D
Dilution:	200			Initial Weight/Volume:	5.18 g
Analysis Date:	04/07/2012 0754	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		6700	24000
1,1,2,2-Tetrachloroethane		ND		3900	24000
1,1,2-Trichloroethane		ND		5100	24000
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		12000	24000
1,1-Dichloroethane		ND		7500	24000
1,1-Dichloroethene		ND		8400	24000
1,2,4-Trichlorobenzene		ND		9200	24000
1,2-Dibromo-3-Chloropropane		ND		12000	24000
1,2-Dibromoethane		ND		920	24000
1,2-Dichlorobenzene		ND		6200	24000
1,2-Dichloroethane		ND		9900	24000
1,2-Dichloropropane		ND		3900	24000
1,3-Dichlorobenzene		ND		6500	24000
1,4-Dichlorobenzene		ND		3400	24000
2-Hexanone		ND		50000	120000
2-Butanone (MEK)		ND		72000	120000
4-Methyl-2-pentanone (MIBK)		ND		7800	120000
Acetone		ND		100000	120000
Benzene		ND		1200	24000
Bromodichloromethane		ND		4900	24000
Bromoform		ND		12000	24000
Bromomethane		ND		5300	24000
Carbon disulfide		ND		11000	24000
Carbon tetrachloride		ND		6200	24000
Chlorobenzene		ND		3200	24000
Dibromochloromethane		ND		12000	24000
Chloroethane		ND		5100	24000
Chloroform		ND		17000	24000
Chloromethane		ND		5800	24000
cis-1,2-Dichloroethene		ND		6700	24000
cis-1,3-Dichloropropene		ND		5800	24000
Cyclohexane		ND		5400	24000
Dichlorodifluoromethane		ND		11000	24000
Ethylbenzene		270000		7100	24000
Isopropylbenzene		29000		3600	24000
Methyl acetate		ND		12000	24000
Methyl tert-butyl ether		ND		9200	24000
Methylcyclohexane		ND		11000	24000
Methylene Chloride		ND		4800	24000
Styrene		ND		5900	24000
Tetrachloroethene		ND		3300	24000
Toluene		630000		6500	24000
trans-1,2-Dichloroethene		ND		5700	24000
trans-1,3-Dichloropropene		ND		1200	24000
Trichloroethene		ND		6800	24000
Trichlorofluoromethane		ND		11000	24000

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB03 SS (1-2) 040212**

Lab Sample ID: 480-18049-4

Client Matrix: Solid

% Moisture: 20.5

Date Sampled: 04/02/2012 1030

Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58568	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10770.D
Dilution:	200			Initial Weight/Volume:	5.18 g
Analysis Date:	04/07/2012 0754	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		8100	24000
Xylenes, Total		1000000		4100	49000

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	0	X	53 - 146
Toluene-d8 (Surr)	0	X	50 - 149
4-Bromofluorobenzene (Surr)	0	X	49 - 148

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB04 SS (2-3) 040212**

Lab Sample ID:	480-18049-5			Date Sampled:	04/02/2012 1045
Client Matrix:	Solid	% Moisture:	13.1	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58043	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7757.D
Dilution:	1.0			Initial Weight/Volume:	4.82 g
Analysis Date:	04/04/2012 1554			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.43	6.0
1,1,2,2-Tetrachloroethane		ND		0.97	6.0
1,1,2-Trichloroethane		ND		0.78	6.0
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.4	6.0
1,1-Dichloroethane		ND		0.73	6.0
1,1-Dichloroethene		ND		0.73	6.0
1,2,4-Trichlorobenzene		ND		0.36	6.0
1,2-Dibromo-3-Chloropropane		ND		3.0	6.0
1,2-Dibromoethane		ND		0.77	6.0
1,2-Dichlorobenzene		59		0.47	6.0
1,2-Dichloroethane		ND		0.30	6.0
1,2-Dichloropropane		ND		3.0	6.0
1,3-Dichlorobenzene		ND		0.31	6.0
1,4-Dichlorobenzene		ND		0.84	6.0
2-Hexanone		ND		3.0	30
2-Butanone (MEK)		77		2.2	30
4-Methyl-2-pentanone (MIBK)		12	J	2.0	30
Acetone		150		5.0	30
Benzene		2.3	J	0.29	6.0
Bromodichloromethane		ND		0.80	6.0
Bromoform		ND		3.0	6.0
Bromomethane		ND		0.54	6.0
Carbon disulfide		ND		3.0	6.0
Carbon tetrachloride		ND		0.58	6.0
Chlorobenzene		ND		0.79	6.0
Dibromochloromethane		ND		0.76	6.0
Chloroethane		ND		1.3	6.0
Chloroform		ND		0.37	6.0
Chloromethane		ND		0.36	6.0
cis-1,2-Dichloroethene		ND		0.76	6.0
cis-1,3-Dichloropropene		ND		0.86	6.0
Cyclohexane		ND		0.84	6.0
Dichlorodifluoromethane		ND		0.49	6.0
Ethylbenzene		1100	E	0.41	6.0
Isopropylbenzene		200		0.90	6.0
Methyl acetate		1.2	J	1.1	6.0
Methyl tert-butyl ether		ND		0.59	6.0
Methylcyclohexane		4.9	J	0.91	6.0
Methylene Chloride		ND		2.7	6.0
Styrene		110		0.30	6.0
Tetrachloroethene		ND		0.80	6.0
Toluene		2200	E	0.45	6.0
trans-1,2-Dichloroethene		ND		0.62	6.0
trans-1,3-Dichloropropene		ND		2.6	6.0
Trichloroethene		ND		1.3	6.0
Trichlorofluoromethane		ND		0.56	6.0

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB04 SS (2-3) 040212**

Lab Sample ID:	480-18049-5				Date Sampled: 04/02/2012 1045
Client Matrix:	Solid	% Moisture:	13.1		Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58043	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7757.D
Dilution:	1.0			Initial Weight/Volume:	4.82 g
Analysis Date:	04/04/2012 1554			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.73	6.0
Xylenes, Total		3600	E	1.0	12

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108		64 - 126
Toluene-d8 (Surr)	100		71 - 125
4-Bromofluorobenzene (Surr)	98		72 - 126

Client Sample ID: **SB04 SS (2-3) 040212**

Lab Sample ID:	480-18049-5			Date Sampled:	04/02/2012 1045
Client Matrix:	Solid	% Moisture:	13.1	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58481	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10726.D
Dilution:	8.0			Initial Weight/Volume:	5.22 g
Analysis Date:	04/06/2012 1432	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		240	880
1,1,2,2-Tetrachloroethane		ND		140	880
1,1,2-Trichloroethane		ND		190	880
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		440	880
1,1-Dichloroethane		ND		270	880
1,1-Dichloroethene		ND		310	880
1,2,4-Trichlorobenzene		ND		330	880
1,2-Dibromo-3-Chloropropane		ND		440	880
1,2-Dibromoethane		ND		34	880
1,2-Dichlorobenzene		2100		220	880
1,2-Dichloroethane		ND		360	880
1,2-Dichloropropane		ND		140	880
1,3-Dichlorobenzene		ND		240	880
1,4-Dichlorobenzene		ND		120	880
2-Hexanone		ND		1800	4400
2-Butanone (MEK)		ND		2600	4400
4-Methyl-2-pentanone (MIBK)		4800		280	4400
Acetone		ND		3600	4400
Benzene		ND		42	880
Bromodichloromethane		ND		180	880
Bromoform		ND		440	880
Bromomethane		ND		190	880
Carbon disulfide		ND		400	880
Carbon tetrachloride		ND		220	880
Chlorobenzene		ND		120	880
Dibromochloromethane		ND		430	880
Chloroethane		ND		180	880
Chloroform		ND		600	880
Chloromethane		ND		210	880
cis-1,2-Dichloroethene		ND		240	880
cis-1,3-Dichloropropene		ND		210	880
Cyclohexane		ND		200	880
Dichlorodifluoromethane		ND		380	880
Ethylbenzene		38000		260	880
Isopropylbenzene		5600		130	880
Methyl acetate		25000		420	880
Methyl tert-butyl ether		ND		330	880
Methylcyclohexane		ND		410	880
Methylene Chloride		ND		170	880
Styrene		ND		210	880
Tetrachloroethene		ND		120	880
Toluene		63000		240	880
trans-1,2-Dichloroethene		ND		210	880
trans-1,3-Dichloropropene		ND		42	880
Trichloroethene		ND		250	880
Trichlorofluoromethane		ND		410	880

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB04 SS (2-3) 040212**

Lab Sample ID:	480-18049-5			Date Sampled: 04/02/2012 1045
Client Matrix:	Solid	% Moisture:	13.1	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58481	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10726.D
Dilution:	8.0			Initial Weight/Volume:	5.22 g
Analysis Date:	04/06/2012 1432	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		300	880
Xylenes, Total		150000		150	1800

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	123		53 - 146
Toluene-d8 (Surr)	129		50 - 149
4-Bromofluorobenzene (Surr)	129		49 - 148

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB05 SS (1-2 040212**

Lab Sample ID:	480-18049-6			Date Sampled: 04/02/2012 1115
Client Matrix:	Solid	% Moisture:	16.1	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58251	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58266	Lab File ID:	F7811.D
Dilution:	1.0			Initial Weight/Volume:	5.1 g
Analysis Date:	04/05/2012 1617			Final Weight/Volume:	5 mL
Prep Date:	04/05/2012 0923				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.42	5.8
1,1,2,2-Tetrachloroethane		ND		0.95	5.8
1,1,2-Trichloroethane		ND		0.76	5.8
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.3	5.8
1,1-Dichloroethane		ND		0.71	5.8
1,1-Dichloroethene		ND		0.72	5.8
1,2,4-Trichlorobenzene		ND		0.36	5.8
1,2-Dibromo-3-Chloropropane		ND		2.9	5.8
1,2-Dibromoethane		ND		0.75	5.8
1,2-Dichlorobenzene		ND		0.46	5.8
1,2-Dichloroethane		ND		0.29	5.8
1,2-Dichloropropane		ND		2.9	5.8
1,3-Dichlorobenzene		ND		0.30	5.8
1,4-Dichlorobenzene		ND		0.82	5.8
2-Hexanone		ND		2.9	29
2-Butanone (MEK)		9.6	J	2.1	29
4-Methyl-2-pentanone (MIBK)		ND		1.9	29
Acetone		420		4.9	29
Benzene		1.1	J	0.29	5.8
Bromodichloromethane		ND		0.78	5.8
Bromoform		ND		2.9	5.8
Bromomethane		ND		0.53	5.8
Carbon disulfide		ND		2.9	5.8
Carbon tetrachloride		ND		0.57	5.8
Chlorobenzene		ND		0.77	5.8
Dibromochloromethane		ND		0.75	5.8
Chloroethane		ND		1.3	5.8
Chloroform		ND		0.36	5.8
Chloromethane		ND		0.35	5.8
cis-1,2-Dichloroethene		ND		0.75	5.8
cis-1,3-Dichloropropene		ND		0.84	5.8
Cyclohexane		ND		0.82	5.8
Dichlorodifluoromethane		ND		0.48	5.8
Ethylbenzene		38	B	0.40	5.8
Isopropylbenzene		7.3		0.88	5.8
Methyl acetate		ND		1.1	5.8
Methyl tert-butyl ether		ND		0.57	5.8
Methylcyclohexane		ND		0.89	5.8
Methylene Chloride		ND		2.7	5.8
Styrene		ND		0.29	5.8
Tetrachloroethene		ND		0.78	5.8
Toluene		54		0.44	5.8
trans-1,2-Dichloroethene		ND		0.60	5.8
trans-1,3-Dichloropropene		ND		2.6	5.8
Trichloroethene		ND		1.3	5.8
Trichlorofluoromethane		ND		0.55	5.8

Client Sample ID: **SB05 SS (1-2 040212**

Lab Sample ID:	480-18049-6			Date Sampled: 04/02/2012 1115
Client Matrix:	Solid	% Moisture:	16.1	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58251	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58266	Lab File ID:	F7811.D
Dilution:	1.0			Initial Weight/Volume:	5.1 g
Analysis Date:	04/05/2012 1617			Final Weight/Volume:	5 mL
Prep Date:	04/05/2012 0923				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.71	5.8
Xylenes, Total		730	B E	0.98	12

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		64 - 126
Toluene-d8 (Surr)	100		71 - 125
4-Bromofluorobenzene (Surr)	100		72 - 126

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB05 SS (1-2 040212**

Lab Sample ID: 480-18049-6

Client Matrix: Solid

% Moisture: 16.1

Date Sampled: 04/02/2012 1115

Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58266	Lab File ID:	F7827.D
Dilution:	1.0			Initial Weight/Volume:	0.75 g
Analysis Date:	04/05/2012 2304	Run Type:	DL	Final Weight/Volume:	5 mL
Prep Date:	04/05/2012 2214				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		2.9	40
1,1,2,2-Tetrachloroethane		ND		6.4	40
1,1,2-Trichloroethane		ND		5.2	40
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		9.1	40
1,1-Dichloroethane		ND		4.8	40
1,1-Dichloroethene		ND		4.9	40
1,2,4-Trichlorobenzene		ND		2.4	40
1,2-Dibromo-3-Chloropropane		ND		20	40
1,2-Dibromoethane		ND		5.1	40
1,2-Dichlorobenzene		ND		3.1	40
1,2-Dichloroethane		ND		2.0	40
1,2-Dichloropropane		ND		20	40
1,3-Dichlorobenzene		ND		2.0	40
1,4-Dichlorobenzene		ND		5.6	40
2-Hexanone		ND		20	200
2-Butanone (MEK)		ND		15	200
4-Methyl-2-pentanone (MIBK)		ND		13	200
Acetone		580		33	200
Benzene		ND		1.9	40
Bromodichloromethane		ND		5.3	40
Bromoform		ND		20	40
Bromomethane		ND		3.6	40
Carbon disulfide		ND		20	40
Carbon tetrachloride		ND		3.8	40
Chlorobenzene		ND		5.2	40
Dibromochloromethane		ND		5.1	40
Chloroethane		ND		9.0	40
Chloroform		ND		2.5	40
Chloromethane		ND		2.4	40
cis-1,2-Dichloroethene		ND		5.1	40
cis-1,3-Dichloropropene		ND		5.7	40
Cyclohexane		ND		5.6	40
Dichlorodifluoromethane		ND		3.3	40
Ethylbenzene		120		2.7	40
Isopropylbenzene		32	J	6.0	40
Methyl acetate		ND		7.4	40
Methyl tert-butyl ether		ND		3.9	40
Methylcyclohexane		ND		6.0	40
Methylene Chloride		ND		18	40
Styrene		ND		2.0	40
Tetrachloroethene		ND		5.3	40
Toluene		130		3.0	40
trans-1,2-Dichloroethene		ND		4.1	40
trans-1,3-Dichloropropene		ND		17	40
Trichloroethene		ND		8.7	40
Trichlorofluoromethane		ND		3.8	40

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB05 SS (1-2 040212**

Lab Sample ID:	480-18049-6			Date Sampled:	04/02/2012 1115
Client Matrix:	Solid	% Moisture:	16.1	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58266	Lab File ID:	F7827.D
Dilution:	1.0			Initial Weight/Volume:	0.75 g
Analysis Date:	04/05/2012 2304	Run Type:	DL	Final Weight/Volume:	5 mL
Prep Date:	04/05/2012 2214				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		4.8	40
Xylenes, Total		2700	B	6.7	79

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		64 - 126
Toluene-d8 (Surr)	104		71 - 125
4-Bromofluorobenzene (Surr)	102		72 - 126

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB05 SS (0-3) 040212**

Lab Sample ID:	480-18049-7	Date Sampled: 04/02/2012 1115
Client Matrix:	Solid	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)-TCLP

Analysis Method:	8260B	Analysis Batch:	480-58568	Instrument ID:	HP5973G
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	G10759.D
Dilution:	10	Leach Batch:	480-58276	Initial Weight/Volume:	5 mL
Analysis Date:	04/07/2012 0345			Final Weight/Volume:	5 mL
Prep Date:	04/07/2012 0345				
Leach Date:	04/05/2012 1014				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Benzene		ND		0.0041	0.010
Carbon tetrachloride		ND		0.0027	0.010
Chlorobenzene		ND		0.0075	0.010
Chloroform		ND		0.0034	0.010
1,2-Dichloroethane		ND		0.0021	0.010
1,1-Dichloroethene		ND		0.0029	0.010
2-Butanone (MEK)		ND		0.013	0.050
Tetrachloroethene		ND		0.0036	0.010
Trichloroethene		ND		0.0046	0.010
Vinyl chloride		ND		0.0090	0.010

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		66 - 137
Toluene-d8 (Surr)	108		71 - 126
4-Bromofluorobenzene (Surr)	109		73 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB06 SS (3-4) 040212**

Lab Sample ID:	480-18049-8			Date Sampled: 04/02/2012 1200
Client Matrix:	Solid	% Moisture:	20.6	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58389	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10711.D
Dilution:	50			Initial Weight/Volume:	5.11 g
Analysis Date:	04/06/2012 0723			Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		1700	6200
1,1,2,2-Tetrachloroethane		ND		1000	6200
1,1,2-Trichloroethane		ND		1300	6200
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		3100	6200
1,1-Dichloroethane		ND		1900	6200
1,1-Dichloroethene		ND		2100	6200
1,2,4-Trichlorobenzene		ND		2300	6200
1,2-Dibromo-3-Chloropropane		ND		3100	6200
1,2-Dibromoethane		ND		230	6200
1,2-Dichlorobenzene		ND		1600	6200
1,2-Dichloroethane		ND		2500	6200
1,2-Dichloropropane		ND		1000	6200
1,3-Dichlorobenzene		ND		1600	6200
1,4-Dichlorobenzene		ND		860	6200
2-Hexanone		ND		13000	31000
2-Butanone (MEK)		ND		18000	31000
4-Methyl-2-pentanone (MIBK)		ND		2000	31000
Acetone		ND		25000	31000
Benzene		ND		300	6200
Bromodichloromethane		ND		1200	6200
Bromoform		ND		3100	6200
Bromomethane		ND		1400	6200
Carbon disulfide		ND		2800	6200
Carbon tetrachloride		ND		1600	6200
Chlorobenzene		ND		810	6200
Dibromochloromethane		ND		3000	6200
Chloroethane		ND		1300	6200
Chloroform		ND		4200	6200
Chloromethane		ND		1500	6200
cis-1,2-Dichloroethene		ND		1700	6200
cis-1,3-Dichloropropene		ND		1500	6200
Cyclohexane		ND		1400	6200
Dichlorodifluoromethane		ND		2700	6200
Ethylbenzene		2400000	E	1800	6200
Isopropylbenzene		13000		920	6200
Methyl acetate		ND		2900	6200
Methyl tert-butyl ether		ND		2300	6200
Methylcyclohexane		ND		2900	6200
Methylene Chloride		ND		1200	6200
Styrene		83000		1500	6200
Tetrachloroethene		ND		830	6200
Toluene		130000		1700	6200
trans-1,2-Dichloroethene		ND		1500	6200
trans-1,3-Dichloropropene		ND		300	6200
Trichloroethene		ND		1700	6200
Trichlorofluoromethane		ND		2900	6200

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB06 SS (3-4) 040212**

Lab Sample ID:	480-18049-8			Date Sampled:	04/02/2012 1200
Client Matrix:	Solid	% Moisture:	20.6	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58389	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10711.D
Dilution:	50			Initial Weight/Volume:	5.11 g
Analysis Date:	04/06/2012 0723			Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		2100	6200
Xylenes, Total		9100000	E	1000	12000

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96		53 - 146
Toluene-d8 (Surr)	117		50 - 149
4-Bromofluorobenzene (Surr)	137		49 - 148

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID:	**SB06 SS (3-4) 040212**				
Lab Sample ID:	480-18049-8			Date Sampled:	04/02/2012 1200
Client Matrix:	Solid	% Moisture:	20.6	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58568	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10771.D
Dilution:	2000			Initial Weight/Volume:	5.11 g
Analysis Date:	04/07/2012 0817	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		68000	250000
1,1,2,2-Tetrachloroethane		ND		40000	250000
1,1,2-Trichloroethane		ND		52000	250000
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		120000	250000
1,1-Dichloroethane		ND		76000	250000
1,1-Dichloroethene		ND		85000	250000
1,2,4-Trichlorobenzene		ND		93000	250000
1,2-Dibromo-3-Chloropropane		ND		120000	250000
1,2-Dibromoethane		ND		9400	250000
1,2-Dichlorobenzene		ND		63000	250000
1,2-Dichloroethane		ND		100000	250000
1,2-Dichloropropane		ND		40000	250000
1,3-Dichlorobenzene		ND		66000	250000
1,4-Dichlorobenzene		ND		35000	250000
2-Hexanone		ND		510000	1200000
2-Butanone (MEK)		ND		730000	1200000
4-Methyl-2-pentanone (MIBK)		ND		79000	1200000
Acetone		ND		1000000	1200000
Benzene		ND		12000	250000
Bromodichloromethane		ND		49000	250000
Bromoform		ND		120000	250000
Bromomethane		ND		54000	250000
Carbon disulfide		ND		110000	250000
Carbon tetrachloride		ND		63000	250000
Chlorobenzene		ND		33000	250000
Dibromochloromethane		ND		120000	250000
Chloroethane		ND		51000	250000
Chloroform		ND		170000	250000
Chloromethane		ND		59000	250000
cis-1,2-Dichloroethene		ND		68000	250000
cis-1,3-Dichloropropene		ND		59000	250000
Cyclohexane		ND		55000	250000
Dichlorodifluoromethane		ND		110000	250000
Ethylbenzene		3500000		72000	250000
Isopropylbenzene		ND		37000	250000
Methyl acetate		ND		120000	250000
Methyl tert-butyl ether		ND		93000	250000
Methylcyclohexane		ND		120000	250000
Methylene Chloride		ND		49000	250000
Styrene		ND		59000	250000
Tetrachloroethene		ND		33000	250000
Toluene		130000	J	66000	250000
trans-1,2-Dichloroethene		ND		58000	250000
trans-1,3-Dichloropropene		ND		12000	250000
Trichloroethene		ND		69000	250000
Trichlorofluoromethane		ND		120000	250000

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB06 SS (3-4) 040212**

Lab Sample ID: 480-18049-8

Client Matrix: Solid

% Moisture: 20.6

Date Sampled: 04/02/2012 1200

Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58568	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10771.D
Dilution:	2000			Initial Weight/Volume:	5.11 g
Analysis Date:	04/07/2012 0817	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		83000	250000
Xylenes, Total		15000000		41000	490000

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	0	X	53 - 146
Toluene-d8 (Surr)	0	X	50 - 149
4-Bromofluorobenzene (Surr)	0	X	49 - 148

Client Sample ID: **SB07 SS (1-2) 040212**

Lab Sample ID:	480-18049-9			Date Sampled: 04/02/2012 1215
Client Matrix:	Solid	% Moisture:	23.3	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58251	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58266	Lab File ID:	F7812.D
Dilution:	1.0			Initial Weight/Volume:	5.13 g
Analysis Date:	04/05/2012 1643			Final Weight/Volume:	5 mL
Prep Date:	04/05/2012 0923				

Analyte DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.46	6.4
1,1,2,2-Tetrachloroethane	ND		1.0	6.4
1,1,2-Trichloroethane	ND		0.83	6.4
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.4	6.4
1,1-Dichloroethane	ND		0.78	6.4
1,1-Dichloroethene	ND		0.78	6.4
1,2,4-Trichlorobenzene	ND		0.39	6.4
1,2-Dibromo-3-Chloropropane	ND		3.2	6.4
1,2-Dibromoethane	ND		0.82	6.4
1,2-Dichlorobenzene	ND		0.50	6.4
1,2-Dichloroethane	ND		0.32	6.4
1,2-Dichloropropane	ND		3.2	6.4
1,3-Dichlorobenzene	ND		0.33	6.4
1,4-Dichlorobenzene	ND		0.89	6.4
2-Hexanone	ND		3.2	32
2-Butanone (MEK)	ND		2.3	32
4-Methyl-2-pentanone (MIBK)	ND		2.1	32
Acetone	ND		5.4	32
Benzene	ND		0.31	6.4
Bromodichloromethane	ND		0.85	6.4
Bromoform	ND		3.2	6.4
Bromomethane	ND		0.57	6.4
Carbon disulfide	ND		3.2	6.4
Carbon tetrachloride	ND		0.62	6.4
Chlorobenzene	ND		0.84	6.4
Dibromochloromethane	ND		0.81	6.4
Chloroethane	ND		1.4	6.4
Chloroform	ND		0.39	6.4
Chloromethane	ND		0.38	6.4
cis-1,2-Dichloroethene	ND		0.81	6.4
cis-1,3-Dichloropropene	ND		0.92	6.4
Cyclohexane	ND		0.89	6.4
Dichlorodifluoromethane	ND		0.52	6.4
Ethylbenzene	13	B	0.44	6.4
Isopropylbenzene	ND		0.96	6.4
Methyl acetate	ND		1.2	6.4
Methyl tert-butyl ether	ND		0.62	6.4
Methylcyclohexane	ND		0.97	6.4
Methylene Chloride	ND		2.9	6.4
Styrene	ND		0.32	6.4
Tetrachloroethene	ND		0.85	6.4
Toluene	3.0	J	0.48	6.4
trans-1,2-Dichloroethene	ND		0.66	6.4
trans-1,3-Dichloropropene	ND		2.8	6.4
Trichloroethene	ND		1.4	6.4
Trichlorofluoromethane	ND		0.60	6.4

Client Sample ID: **SB07 SS (1-2) 040212**

Lab Sample ID:	480-18049-9			Date Sampled: 04/02/2012 1215
Client Matrix:	Solid	% Moisture:	23.3	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58251	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58266	Lab File ID:	F7812.D
Dilution:	1.0			Initial Weight/Volume:	5.13 g
Analysis Date:	04/05/2012 1643			Final Weight/Volume:	5 mL
Prep Date:	04/05/2012 0923				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.78	6.4
Xylenes, Total		140	B	1.1	13

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		64 - 126
Toluene-d8 (Surr)	109		71 - 125
4-Bromofluorobenzene (Surr)	109		72 - 126

Client Sample ID: **SB07 SS (3-4) 040212**

Lab Sample ID:	480-18049-10				Date Sampled: 04/02/2012 1215
Client Matrix:	Solid	% Moisture:	23.1		Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58251	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58266	Lab File ID:	F7813.D
Dilution:	1.0			Initial Weight/Volume:	5.37 g
Analysis Date:	04/05/2012 1708			Final Weight/Volume:	5 mL
Prep Date:	04/05/2012 0923				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.44	6.1
1,1,2,2-Tetrachloroethane		ND		0.98	6.1
1,1,2-Trichloroethane		ND		0.79	6.1
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.4	6.1
1,1-Dichloroethane		ND		0.74	6.1
1,1-Dichloroethene		ND		0.74	6.1
1,2,4-Trichlorobenzene		ND		0.37	6.1
1,2-Dibromo-3-Chloropropane		ND		3.0	6.1
1,2-Dibromoethane		ND		0.78	6.1
1,2-Dichlorobenzene		ND		0.47	6.1
1,2-Dichloroethane		ND		0.30	6.1
1,2-Dichloropropane		ND		3.0	6.1
1,3-Dichlorobenzene		ND		0.31	6.1
1,4-Dichlorobenzene		ND		0.85	6.1
2-Hexanone		ND		3.0	30
2-Butanone (MEK)		ND		2.2	30
4-Methyl-2-pentanone (MIBK)		ND		2.0	30
Acetone		10	J	5.1	30
Benzene		ND		0.30	6.1
Bromodichloromethane		ND		0.81	6.1
Bromoform		ND		3.0	6.1
Bromomethane		ND		0.54	6.1
Carbon disulfide		ND		3.0	6.1
Carbon tetrachloride		ND		0.59	6.1
Chlorobenzene		ND		0.80	6.1
Dibromochloromethane		ND		0.77	6.1
Chloroethane		ND		1.4	6.1
Chloroform		ND		0.37	6.1
Chloromethane		ND		0.37	6.1
cis-1,2-Dichloroethene		ND		0.77	6.1
cis-1,3-Dichloropropene		ND		0.87	6.1
Cyclohexane		ND		0.85	6.1
Dichlorodifluoromethane		ND		0.50	6.1
Ethylbenzene		6.4	B	0.42	6.1
Isopropylbenzene		ND		0.91	6.1
Methyl acetate		ND		1.1	6.1
Methyl tert-butyl ether		ND		0.59	6.1
Methylcyclohexane		ND		0.92	6.1
Methylene Chloride		ND		2.8	6.1
Styrene		ND		0.30	6.1
Tetrachloroethene		ND		0.81	6.1
Toluene		14		0.46	6.1
trans-1,2-Dichloroethene		ND		0.62	6.1
trans-1,3-Dichloropropene		ND		2.7	6.1
Trichloroethene		ND		1.3	6.1
Trichlorofluoromethane		ND		0.57	6.1

Client Sample ID: **SB07 SS (3-4) 040212**

Lab Sample ID:	480-18049-10			Date Sampled: 04/02/2012 1215
Client Matrix:	Solid	% Moisture:	23.1	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58251	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58266	Lab File ID:	F7813.D
Dilution:	1.0			Initial Weight/Volume:	5.37 g
Analysis Date:	04/05/2012 1708			Final Weight/Volume:	5 mL
Prep Date:	04/05/2012 0923				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.74	6.1
Xylenes, Total		25	B	1.0	12

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		64 - 126
Toluene-d8 (Surr)	112		71 - 125
4-Bromofluorobenzene (Surr)	114		72 - 126

Client Sample ID: **SB10 SS (1-2) 040212**

Lab Sample ID: 480-18049-11
Client Matrix: Solid
% Moisture: 12.6
Date Sampled: 04/02/2012 1230
Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B
Prep Method: 5035
Dilution: 1.0
Analysis Date: 04/06/2012 1518
Prep Date: 04/05/2012 1045
Analysis Batch: 480-58481
Prep Batch: 480-58304
Instrument ID: HP5973G
Lab File ID: G10728.D
Initial Weight/Volume: 5.17 g
Final Weight/Volume: 10 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		31	110
1,1,2,2-Tetrachloroethane		ND		18	110
1,1,2-Trichloroethane		ND		23	110
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		55	110
1,1-Dichloroethane		ND		34	110
1,1-Dichloroethene		ND		38	110
1,2,4-Trichlorobenzene		ND		42	110
1,2-Dibromo-3-Chloropropane		ND		55	110
1,2-Dibromoethane		ND		4.2	110
1,2-Dichlorobenzene		ND		28	110
1,2-Dichloroethane		ND		45	110
1,2-Dichloropropane		ND		18	110
1,3-Dichlorobenzene		ND		30	110
1,4-Dichlorobenzene		ND		15	110
2-Hexanone		ND		230	550
2-Butanone (MEK)		ND		330	550
4-Methyl-2-pentanone (MIBK)		ND		35	550
Acetone		ND		450	550
Benzene		ND		5.3	110
Bromodichloromethane		ND		22	110
Bromoform		ND		55	110
Bromomethane		ND		24	110
Carbon disulfide		ND		50	110
Carbon tetrachloride		ND		28	110
Chlorobenzene		ND		15	110
Dibromochloromethane		ND		54	110
Chloroethane		ND		23	110
Chloroform		ND		76	110
Chloromethane		ND		26	110
cis-1,2-Dichloroethene		ND		31	110
cis-1,3-Dichloropropene		ND		26	110
Cyclohexane		ND		25	110
Dichlorodifluoromethane		ND		48	110
Ethylbenzene		220		32	110
Isopropylbenzene		ND		17	110
Methyl acetate		ND		53	110
Methyl tert-butyl ether		ND		42	110
Methylcyclohexane		ND		52	110
Methylene Chloride		ND		22	110
Styrene		ND		27	110
Tetrachloroethene		ND		15	110
Toluene		140		30	110
trans-1,2-Dichloroethene		ND		26	110
trans-1,3-Dichloropropene		ND		5.3	110
Trichloroethene		ND		31	110
Trichlorofluoromethane		ND		52	110

Client Sample ID: **SB10 SS (1-2) 040212**

Lab Sample ID:	480-18049-11			Date Sampled: 04/02/2012 1230
Client Matrix:	Solid	% Moisture:	12.6	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58481	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10728.D
Dilution:	1.0			Initial Weight/Volume:	5.17 g
Analysis Date:	04/06/2012 1518			Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		37	110
Xylenes, Total		2100		19	220

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	126		53 - 146
Toluene-d8 (Surr)	131		50 - 149
4-Bromofluorobenzene (Surr)	133		49 - 148

Client Sample ID: **SB10 SS (3-4) 040212**

Lab Sample ID:	480-18049-12			Date Sampled: 04/02/2012 1230
Client Matrix:	Solid	% Moisture:	19.1	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58481	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10729.D
Dilution:	1.0			Initial Weight/Volume:	5.09 g
Analysis Date:	04/06/2012 1541			Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		34	120
1,1,2,2-Tetrachloroethane		ND		20	120
1,1,2-Trichloroethane		ND		26	120
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		61	120
1,1-Dichloroethane		ND		38	120
1,1-Dichloroethene		ND		42	120
1,2,4-Trichlorobenzene		ND		46	120
1,2-Dibromo-3-Chloropropane		ND		61	120
1,2-Dibromoethane		ND		4.6	120
1,2-Dichlorobenzene		ND		31	120
1,2-Dichloroethane		ND		50	120
1,2-Dichloropropane		ND		20	120
1,3-Dichlorobenzene		ND		32	120
1,4-Dichlorobenzene		ND		17	120
2-Hexanone		ND		250	610
2-Butanone (MEK)		ND		360	610
4-Methyl-2-pentanone (MIBK)		ND		39	610
Acetone		ND		500	610
Benzene		ND		5.8	120
Bromodichloromethane		ND		24	120
Bromoform		ND		61	120
Bromomethane		ND		27	120
Carbon disulfide		ND		55	120
Carbon tetrachloride		ND		31	120
Chlorobenzene		ND		16	120
Dibromochloromethane		ND		59	120
Chloroethane		ND		25	120
Chloroform		ND		83	120
Chloromethane		ND		29	120
cis-1,2-Dichloroethene		ND		34	120
cis-1,3-Dichloropropene		ND		29	120
Cyclohexane		ND		27	120
Dichlorodifluoromethane		ND		53	120
Ethylbenzene		ND		35	120
Isopropylbenzene		ND		18	120
Methyl acetate		ND		58	120
Methyl tert-butyl ether		ND		46	120
Methylcyclohexane		ND		57	120
Methylene Chloride		ND		24	120
Styrene		ND		29	120
Tetrachloroethene		ND		16	120
Toluene		42	J	33	120
trans-1,2-Dichloroethene		ND		29	120
trans-1,3-Dichloropropene		ND		5.8	120
Trichloroethene		ND		34	120
Trichlorofluoromethane		ND		57	120

Client Sample ID: **SB10 SS (3-4) 040212**

Lab Sample ID: 480-18049-12

Client Matrix: Solid

% Moisture: 19.1

Date Sampled: 04/02/2012 1230

Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58481	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10729.D
Dilution:	1.0			Initial Weight/Volume:	5.09 g
Analysis Date:	04/06/2012 1541			Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		41	120
Xylenes, Total		91	J	20	240

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	122		53 - 146
Toluene-d8 (Surr)	126		50 - 149
4-Bromofluorobenzene (Surr)	127		49 - 148

Client Sample ID: **SB11 SS (2-3) 040212**

Lab Sample ID:	480-18049-13			Date Sampled: 04/02/2012 1245
Client Matrix:	Solid	% Moisture:	10.7	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7828.D
Dilution:	1.0			Initial Weight/Volume:	4.58 g
Analysis Date:	04/05/2012 2330			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.44	6.1
1,1,2,2-Tetrachloroethane		ND		0.99	6.1
1,1,2-Trichloroethane		ND		0.79	6.1
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.4	6.1
1,1-Dichloroethane		ND		0.75	6.1
1,1-Dichloroethene		ND		0.75	6.1
1,2,4-Trichlorobenzene		ND		0.37	6.1
1,2-Dibromo-3-Chloropropane		ND		3.1	6.1
1,2-Dibromoethane		ND		0.79	6.1
1,2-Dichlorobenzene		ND		0.48	6.1
1,2-Dichloroethane		ND		0.31	6.1
1,2-Dichloropropane		ND		3.1	6.1
1,3-Dichlorobenzene		ND		0.31	6.1
1,4-Dichlorobenzene		ND		0.86	6.1
2-Hexanone		ND		3.1	31
2-Butanone (MEK)		ND		2.2	31
4-Methyl-2-pentanone (MIBK)		ND		2.0	31
Acetone		42		5.1	31
Benzene		ND		0.30	6.1
Bromodichloromethane		ND		0.82	6.1
Bromoform		ND		3.1	6.1
Bromomethane		ND		0.55	6.1
Carbon disulfide		ND		3.1	6.1
Carbon tetrachloride		ND		0.59	6.1
Chlorobenzene		ND		0.81	6.1
Dibromochloromethane		ND		0.78	6.1
Chloroethane		ND		1.4	6.1
Chloroform		ND		0.38	6.1
Chloromethane		ND		0.37	6.1
cis-1,2-Dichloroethene		ND		0.78	6.1
cis-1,3-Dichloropropene		ND		0.88	6.1
Cyclohexane		ND		0.86	6.1
Dichlorodifluoromethane		ND		0.51	6.1
Ethylbenzene		16		0.42	6.1
Isopropylbenzene		ND		0.92	6.1
Methyl acetate		ND		1.1	6.1
Methyl tert-butyl ether		ND		0.60	6.1
Methylcyclohexane		ND		0.93	6.1
Methylene Chloride		ND		2.8	6.1
Styrene		ND		0.31	6.1
Tetrachloroethene		ND		0.82	6.1
Toluene		41		0.46	6.1
trans-1,2-Dichloroethene		ND		0.63	6.1
trans-1,3-Dichloropropene		ND		2.7	6.1
Trichloroethene		ND		1.3	6.1
Trichlorofluoromethane		ND		0.58	6.1

Client Sample ID: **SB11 SS (2-3) 040212**

Lab Sample ID:	480-18049-13			Date Sampled:	04/02/2012 1245
Client Matrix:	Solid	% Moisture:	10.7	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7828.D
Dilution:	1.0			Initial Weight/Volume:	4.58 g
Analysis Date:	04/05/2012 2330			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.75	6.1
Xylenes, Total		65	B	1.0	12

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		64 - 126
Toluene-d8 (Surr)	105		71 - 125
4-Bromofluorobenzene (Surr)	105		72 - 126

Analytical Data

Client: CHA Inc | Job Number: 480-18049-1

Client Sample ID: **SB14 SS (1-2)040212**

Lab Sample ID: 480-18049-14 | Date Sampled: 04/02/2012 1300

Client Matrix: Solid | % Moisture: 12.9 | Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7829.D
Dilution:	1.0			Initial Weight/Volume:	4.9 g
Analysis Date:	04/05/2012 2355			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.43	5.9
1,1,2,2-Tetrachloroethane		ND		0.95	5.9
1,1,2-Trichloroethane		ND		0.76	5.9
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.3	5.9
1,1-Dichloroethane		ND		0.71	5.9
1,1-Dichloroethene		ND		0.72	5.9
1,2,4-Trichlorobenzene		ND		0.36	5.9
1,2-Dibromo-3-Chloropropane		ND		2.9	5.9
1,2-Dibromoethane		ND		0.75	5.9
1,2-Dichlorobenzene		ND		0.46	5.9
1,2-Dichloroethane		ND		0.29	5.9
1,2-Dichloropropane		ND		2.9	5.9
1,3-Dichlorobenzene		ND		0.30	5.9
1,4-Dichlorobenzene		ND		0.82	5.9
2-Hexanone		ND		2.9	29
2-Butanone (MEK)		ND		2.1	29
4-Methyl-2-pentanone (MIBK)		ND		1.9	29
Acetone		ND		4.9	29
Benzene		ND		0.29	5.9
Bromodichloromethane		ND		0.78	5.9
Bromoform		ND		2.9	5.9
Bromomethane		ND		0.53	5.9
Carbon disulfide		ND		2.9	5.9
Carbon tetrachloride		ND		0.57	5.9
Chlorobenzene		ND		0.77	5.9
Dibromochloromethane		ND		0.75	5.9
Chloroethane		ND		1.3	5.9
Chloroform		ND		0.36	5.9
Chloromethane		ND		0.35	5.9
cis-1,2-Dichloroethene		ND		0.75	5.9
cis-1,3-Dichloropropene		ND		0.84	5.9
Cyclohexane		ND		0.82	5.9
Dichlorodifluoromethane		ND		0.48	5.9
Ethylbenzene		1.4	J	0.40	5.9
Isopropylbenzene		ND		0.88	5.9
Methyl acetate		ND		1.1	5.9
Methyl tert-butyl ether		ND		0.58	5.9
Methylcyclohexane		ND		0.89	5.9
Methylene Chloride		ND		2.7	5.9
Styrene		ND		0.29	5.9
Tetrachloroethene		ND		0.79	5.9
Toluene		ND		0.44	5.9
trans-1,2-Dichloroethene		ND		0.60	5.9
trans-1,3-Dichloropropene		ND		2.6	5.9
Trichloroethene		ND		1.3	5.9
Trichlorofluoromethane		ND		0.55	5.9

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID:	**SB14 SS (1-2)040212**			
Lab Sample ID:	480-18049-14			Date Sampled: 04/02/2012 1300
Client Matrix:	Solid	% Moisture:	12.9	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7829.D
Dilution:	1.0			Initial Weight/Volume:	4.9 g
Analysis Date:	04/05/2012 2355			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.71	5.9
Xylenes, Total		8.6	J B	0.98	12

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		64 - 126
Toluene-d8 (Surr)	107		71 - 125
4-Bromofluorobenzene (Surr)	106		72 - 126

Client Sample ID: **SB14 SS (2-3) 040212**

Lab Sample ID: 480-18049-15
Client Matrix: Solid
% Moisture: 13.5
Date Sampled: 04/02/2012 1300
Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B
Prep Method: 5035
Dilution: 1.0
Analysis Date: 04/06/2012 0021
Prep Date: 04/04/2012 1404
Analysis Batch: 480-58395
Prep Batch: 480-58091
Instrument ID: HP5973F
Lab File ID: F7830.D
Initial Weight/Volume: 5.48 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.38	5.3
1,1,2,2-Tetrachloroethane		ND		0.86	5.3
1,1,2-Trichloroethane		ND		0.69	5.3
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.2	5.3
1,1-Dichloroethane		ND		0.64	5.3
1,1-Dichloroethene		ND		0.65	5.3
1,2,4-Trichlorobenzene		ND		0.32	5.3
1,2-Dibromo-3-Chloropropane		ND		2.6	5.3
1,2-Dibromoethane		ND		0.68	5.3
1,2-Dichlorobenzene		ND		0.41	5.3
1,2-Dichloroethane		ND		0.26	5.3
1,2-Dichloropropane		ND		2.6	5.3
1,3-Dichlorobenzene		ND		0.27	5.3
1,4-Dichlorobenzene		ND		0.74	5.3
2-Hexanone		ND		2.6	26
2-Butanone (MEK)		ND		1.9	26
4-Methyl-2-pentanone (MIBK)		ND		1.7	26
Acetone		ND		4.4	26
Benzene		ND		0.26	5.3
Bromodichloromethane		ND		0.71	5.3
Bromoform		ND		2.6	5.3
Bromomethane		ND		0.47	5.3
Carbon disulfide		ND		2.6	5.3
Carbon tetrachloride		ND		0.51	5.3
Chlorobenzene		ND		0.70	5.3
Dibromochloromethane		ND		0.67	5.3
Chloroethane		ND		1.2	5.3
Chloroform		ND		0.33	5.3
Chloromethane		ND		0.32	5.3
cis-1,2-Dichloroethene		ND		0.67	5.3
cis-1,3-Dichloropropene		ND		0.76	5.3
Cyclohexane		ND		0.74	5.3
Dichlorodifluoromethane		ND		0.44	5.3
Ethylbenzene		5.3		0.36	5.3
Isopropylbenzene		ND		0.80	5.3
Methyl acetate		ND		0.98	5.3
Methyl tert-butyl ether		ND		0.52	5.3
Methylcyclohexane		ND		0.80	5.3
Methylene Chloride		ND		2.4	5.3
Styrene		ND		0.26	5.3
Tetrachloroethene		ND		0.71	5.3
Toluene		4.6	J	0.40	5.3
trans-1,2-Dichloroethene		ND		0.54	5.3
trans-1,3-Dichloropropene		ND		2.3	5.3
Trichloroethene		ND		1.2	5.3
Trichlorofluoromethane		ND		0.50	5.3

Client Sample ID: **SB14 SS (2-3) 040212**

Lab Sample ID:	480-18049-15			Date Sampled:	04/02/2012 1300
Client Matrix:	Solid	% Moisture:	13.5	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7830.D
Dilution:	1.0			Initial Weight/Volume:	5.48 g
Analysis Date:	04/06/2012 0021			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.64	5.3
Xylenes, Total		13	B	0.89	11

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		64 - 126
Toluene-d8 (Surr)	107		71 - 125
4-Bromofluorobenzene (Surr)	105		72 - 126

Client Sample ID: **SB13 SS (1-2) 040212**

Lab Sample ID: 480-18049-16 Date Sampled: 04/02/2012 1315
Client Matrix: Solid % Moisture: 10.3 Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7831.D
Dilution:	1.0			Initial Weight/Volume:	4.95 g
Analysis Date:	04/06/2012 0046			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.41	5.6
1,1,2,2-Tetrachloroethane		ND		0.91	5.6
1,1,2-Trichloroethane		ND		0.73	5.6
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.3	5.6
1,1-Dichloroethane		ND		0.69	5.6
1,1-Dichloroethene		ND		0.69	5.6
1,2,4-Trichlorobenzene		ND		0.34	5.6
1,2-Dibromo-3-Chloropropane		ND		2.8	5.6
1,2-Dibromoethane		ND		0.72	5.6
1,2-Dichlorobenzene		ND		0.44	5.6
1,2-Dichloroethane		ND		0.28	5.6
1,2-Dichloropropane		ND		2.8	5.6
1,3-Dichlorobenzene		ND		0.29	5.6
1,4-Dichlorobenzene		ND		0.79	5.6
2-Hexanone		ND		2.8	28
2-Butanone (MEK)		ND		2.1	28
4-Methyl-2-pentanone (MIBK)		ND		1.8	28
Acetone		ND		4.7	28
Benzene		ND		0.28	5.6
Bromodichloromethane		ND		0.75	5.6
Bromoform		ND		2.8	5.6
Bromomethane		ND		0.51	5.6
Carbon disulfide		ND		2.8	5.6
Carbon tetrachloride		ND		0.55	5.6
Chlorobenzene		ND		0.74	5.6
Dibromochloromethane		ND		0.72	5.6
Chloroethane		ND		1.3	5.6
Chloroform		ND		0.35	5.6
Chloromethane		ND		0.34	5.6
cis-1,2-Dichloroethene		ND		0.72	5.6
cis-1,3-Dichloropropene		ND		0.81	5.6
Cyclohexane		ND		0.79	5.6
Dichlorodifluoromethane		ND		0.47	5.6
Ethylbenzene		4.5	J	0.39	5.6
Isopropylbenzene		ND		0.85	5.6
Methyl acetate		ND		1.0	5.6
Methyl tert-butyl ether		ND		0.55	5.6
Methylcyclohexane		ND		0.86	5.6
Methylene Chloride		ND		2.6	5.6
Styrene		ND		0.28	5.6
Tetrachloroethene		ND		0.76	5.6
Toluene		12		0.43	5.6
trans-1,2-Dichloroethene		ND		0.58	5.6
trans-1,3-Dichloropropene		ND		2.5	5.6
Trichloroethene		ND		1.2	5.6
Trichlorofluoromethane		ND		0.53	5.6

Client Sample ID: **SB13 SS (1-2) 040212**

Lab Sample ID:	480-18049-16			Date Sampled: 04/02/2012 1315
Client Matrix:	Solid	% Moisture:	10.3	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7831.D
Dilution:	1.0			Initial Weight/Volume:	4.95 g
Analysis Date:	04/06/2012 0046			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.69	5.6
Xylenes, Total		15	B	0.95	11

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		64 - 126
Toluene-d8 (Surr)	106		71 - 125
4-Bromofluorobenzene (Surr)	104		72 - 126

Client Sample ID: **SB13 SS (2-3) 040212**

Lab Sample ID: 480-18049-17 Date Sampled: 04/02/2012 1315
Client Matrix: Solid % Moisture: 13.6 Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7832.D
Dilution:	1.0			Initial Weight/Volume:	5.11 g
Analysis Date:	04/06/2012 0112			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.41	5.7
1,1,2,2-Tetrachloroethane		ND		0.92	5.7
1,1,2-Trichloroethane		ND		0.74	5.7
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.3	5.7
1,1-Dichloroethane		ND		0.69	5.7
1,1-Dichloroethene		ND		0.69	5.7
1,2,4-Trichlorobenzene		ND		0.34	5.7
1,2-Dibromo-3-Chloropropane		ND		2.8	5.7
1,2-Dibromoethane		ND		0.73	5.7
1,2-Dichlorobenzene		ND		0.44	5.7
1,2-Dichloroethane		ND		0.28	5.7
1,2-Dichloropropane		ND		2.8	5.7
1,3-Dichlorobenzene		ND		0.29	5.7
1,4-Dichlorobenzene		ND		0.79	5.7
2-Hexanone		ND		2.8	28
2-Butanone (MEK)		ND		2.1	28
4-Methyl-2-pentanone (MIBK)		ND		1.9	28
Acetone		32		4.8	28
Benzene		ND		0.28	5.7
Bromodichloromethane		ND		0.76	5.7
Bromoform		ND		2.8	5.7
Bromomethane		ND		0.51	5.7
Carbon disulfide		ND		2.8	5.7
Carbon tetrachloride		ND		0.55	5.7
Chlorobenzene		ND		0.75	5.7
Dibromochloromethane		ND		0.72	5.7
Chloroethane		ND		1.3	5.7
Chloroform		ND		0.35	5.7
Chloromethane		ND		0.34	5.7
cis-1,2-Dichloroethene		ND		0.72	5.7
cis-1,3-Dichloropropene		ND		0.82	5.7
Cyclohexane		ND		0.79	5.7
Dichlorodifluoromethane		ND		0.47	5.7
Ethylbenzene		13		0.39	5.7
Isopropylbenzene		ND		0.85	5.7
Methyl acetate		ND		1.1	5.7
Methyl tert-butyl ether		ND		0.56	5.7
Methylcyclohexane		ND		0.86	5.7
Methylene Chloride		ND		2.6	5.7
Styrene		ND		0.28	5.7
Tetrachloroethene		ND		0.76	5.7
Toluene		33		0.43	5.7
trans-1,2-Dichloroethene		ND		0.58	5.7
trans-1,3-Dichloropropene		ND		2.5	5.7
Trichloroethene		ND		1.2	5.7
Trichlorofluoromethane		ND		0.54	5.7

Analytical Data

Client: CHA Inc Job Number: 480-18049-1

Client Sample ID: **SB13 SS (2-3) 040212**

Lab Sample ID:	480-18049-17			Date Sampled: 04/02/2012 1315
Client Matrix:	Solid	% Moisture:	13.6	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7832.D
Dilution:	1.0			Initial Weight/Volume:	5.11 g
Analysis Date:	04/06/2012 0112			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.69	5.7
Xylenes, Total		45	B	0.95	11

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		64 - 126
Toluene-d8 (Surr)	107		71 - 125
4-Bromofluorobenzene (Surr)	107		72 - 126

Client Sample ID: **SB08 SS (1-2) 040212**

Lab Sample ID:	480-18049-18			Date Sampled:	04/02/2012 1330
Client Matrix:	Solid	% Moisture:	26.2	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7833.D
Dilution:	1.0			Initial Weight/Volume:	5.03 g
Analysis Date:	04/06/2012 0137			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.49	6.7
1,1,2,2-Tetrachloroethane		ND		1.1	6.7
1,1,2-Trichloroethane		ND		0.88	6.7
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.5	6.7
1,1-Dichloroethane		ND		0.82	6.7
1,1-Dichloroethene		ND		0.82	6.7
1,2,4-Trichlorobenzene		ND		0.41	6.7
1,2-Dibromo-3-Chloropropane		ND		3.4	6.7
1,2-Dibromoethane		ND		0.86	6.7
1,2-Dichlorobenzene		ND		0.53	6.7
1,2-Dichloroethane		ND		0.34	6.7
1,2-Dichloropropane		ND		3.4	6.7
1,3-Dichlorobenzene		ND		0.35	6.7
1,4-Dichlorobenzene		ND		0.94	6.7
2-Hexanone		ND		3.4	34
2-Butanone (MEK)		64		2.5	34
4-Methyl-2-pentanone (MIBK)		ND		2.2	34
Acetone		720		5.7	34
Benzene		ND		0.33	6.7
Bromodichloromethane		ND		0.90	6.7
Bromoform		ND		3.4	6.7
Bromomethane		ND		0.61	6.7
Carbon disulfide		ND		3.4	6.7
Carbon tetrachloride		ND		0.65	6.7
Chlorobenzene		ND		0.89	6.7
Dibromochloromethane		ND		0.86	6.7
Chloroethane		ND		1.5	6.7
Chloroform		ND		0.42	6.7
Chloromethane		ND		0.41	6.7
cis-1,2-Dichloroethene		ND		0.86	6.7
cis-1,3-Dichloropropene		ND		0.97	6.7
Cyclohexane		ND		0.94	6.7
Dichlorodifluoromethane		ND		0.56	6.7
Ethylbenzene		8.8		0.46	6.7
Isopropylbenzene		ND		1.0	6.7
Methyl acetate		ND		1.3	6.7
Methyl tert-butyl ether		ND		0.66	6.7
Methylcyclohexane		ND		1.0	6.7
Methylene Chloride		ND		3.1	6.7
Styrene		ND		0.34	6.7
Tetrachloroethene		ND		0.90	6.7
Toluene		26		0.51	6.7
trans-1,2-Dichloroethene		ND		0.69	6.7
trans-1,3-Dichloropropene		ND		3.0	6.7
Trichloroethene		ND		1.5	6.7
Trichlorofluoromethane		ND		0.64	6.7

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB08 SS (1-2) 040212**

Lab Sample ID:	480-18049-18			Date Sampled: 04/02/2012 1330
Client Matrix:	Solid	% Moisture:	26.2	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7833.D
Dilution:	1.0			Initial Weight/Volume:	5.03 g
Analysis Date:	04/06/2012 0137			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.82	6.7
Xylenes, Total		34	B	1.1	13

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		64 - 126
Toluene-d8 (Surr)	107		71 - 125
4-Bromofluorobenzene (Surr)	103		72 - 126

Client Sample ID: **SB08 SS (2-3) 040212**

Lab Sample ID: 480-18049-19
Client Matrix: Solid
% Moisture: 16.8
Date Sampled: 04/02/2012 1330
Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B
Prep Method: 5035
Dilution: 1.0
Analysis Date: 04/06/2012 0203
Prep Date: 04/04/2012 1404
Analysis Batch: 480-58395
Prep Batch: 480-58091
Instrument ID: HP5973F
Lab File ID: F7834.D
Initial Weight/Volume: 5.55 g
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.39	5.4
1,1,2,2-Tetrachloroethane		ND		0.88	5.4
1,1,2-Trichloroethane		ND		0.70	5.4
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.2	5.4
1,1-Dichloroethane		ND		0.66	5.4
1,1-Dichloroethene		ND		0.66	5.4
1,2,4-Trichlorobenzene		ND		0.33	5.4
1,2-Dibromo-3-Chloropropane		ND		2.7	5.4
1,2-Dibromoethane		ND		0.70	5.4
1,2-Dichlorobenzene		ND		0.42	5.4
1,2-Dichloroethane		ND		0.27	5.4
1,2-Dichloropropane		ND		2.7	5.4
1,3-Dichlorobenzene		ND		0.28	5.4
1,4-Dichlorobenzene		ND		0.76	5.4
2-Hexanone		ND		2.7	27
2-Butanone (MEK)		ND		2.0	27
4-Methyl-2-pentanone (MIBK)		ND		1.8	27
Acetone		ND		4.6	27
Benzene		ND		0.27	5.4
Bromodichloromethane		ND		0.73	5.4
Bromoform		ND		2.7	5.4
Bromomethane		ND		0.49	5.4
Carbon disulfide		ND		2.7	5.4
Carbon tetrachloride		ND		0.52	5.4
Chlorobenzene		ND		0.71	5.4
Dibromochloromethane		ND		0.69	5.4
Chloroethane		ND		1.2	5.4
Chloroform		ND		0.33	5.4
Chloromethane		ND		0.33	5.4
cis-1,2-Dichloroethene		ND		0.69	5.4
cis-1,3-Dichloropropene		ND		0.78	5.4
Cyclohexane		ND		0.76	5.4
Dichlorodifluoromethane		ND		0.45	5.4
Ethylbenzene		3.3	J	0.37	5.4
Isopropylbenzene		ND		0.82	5.4
Methyl acetate		ND		1.0	5.4
Methyl tert-butyl ether		ND		0.53	5.4
Methylcyclohexane		ND		0.82	5.4
Methylene Chloride		ND		2.5	5.4
Styrene		ND		0.27	5.4
Tetrachloroethene		ND		0.73	5.4
Toluene		3.1	J	0.41	5.4
trans-1,2-Dichloroethene		ND		0.56	5.4
trans-1,3-Dichloropropene		ND		2.4	5.4
Trichloroethene		ND		1.2	5.4
Trichlorofluoromethane		ND		0.51	5.4

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB08 SS (2-3) 040212**

Lab Sample ID:	480-18049-19			Date Sampled: 04/02/2012 1330
Client Matrix:	Solid	% Moisture:	16.8	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7834.D
Dilution:	1.0			Initial Weight/Volume:	5.55 g
Analysis Date:	04/06/2012 0203			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.66	5.4
Xylenes, Total		11	B	0.91	11

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		64 - 126
Toluene-d8 (Surr)	112		71 - 125
4-Bromofluorobenzene (Surr)	111		72 - 126

Client Sample ID: **SB12 SS (0-1) 040212**

Lab Sample ID:	480-18049-20			Date Sampled: 04/02/2012 1400
Client Matrix:	Solid	% Moisture:	12.0	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7835.D
Dilution:	1.0			Initial Weight/Volume:	5.43 g
Analysis Date:	04/06/2012 0228			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.38	5.2
1,1,2,2-Tetrachloroethane		ND		0.85	5.2
1,1,2-Trichloroethane		ND		0.68	5.2
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.2	5.2
1,1-Dichloroethane		ND		0.64	5.2
1,1-Dichloroethene		ND		0.64	5.2
1,2,4-Trichlorobenzene		ND		0.32	5.2
1,2-Dibromo-3-Chloropropane		ND		2.6	5.2
1,2-Dibromoethane		ND		0.67	5.2
1,2-Dichlorobenzene		ND		0.41	5.2
1,2-Dichloroethane		ND		0.26	5.2
1,2-Dichloropropane		ND		2.6	5.2
1,3-Dichlorobenzene		ND		0.27	5.2
1,4-Dichlorobenzene		ND		0.73	5.2
2-Hexanone		ND		2.6	26
2-Butanone (MEK)		ND		1.9	26
4-Methyl-2-pentanone (MIBK)		ND		1.7	26
Acetone		ND		4.4	26
Benzene		ND		0.26	5.2
Bromodichloromethane		ND		0.70	5.2
Bromoform		ND		2.6	5.2
Bromomethane		ND		0.47	5.2
Carbon disulfide		ND		2.6	5.2
Carbon tetrachloride		ND		0.51	5.2
Chlorobenzene		ND		0.69	5.2
Dibromochloromethane		ND		0.67	5.2
Chloroethane		ND		1.2	5.2
Chloroform		ND		0.32	5.2
Chloromethane		ND		0.32	5.2
cis-1,2-Dichloroethene		ND		0.67	5.2
cis-1,3-Dichloropropene		ND		0.75	5.2
Cyclohexane		ND		0.73	5.2
Dichlorodifluoromethane		ND		0.43	5.2
Ethylbenzene		2.7	J	0.36	5.2
Isopropylbenzene		ND		0.79	5.2
Methyl acetate		ND		0.97	5.2
Methyl tert-butyl ether		ND		0.51	5.2
Methylcyclohexane		ND		0.79	5.2
Methylene Chloride		ND		2.4	5.2
Styrene		ND		0.26	5.2
Tetrachloroethene		ND		0.70	5.2
Toluene		5.1	J	0.40	5.2
trans-1,2-Dichloroethene		ND		0.54	5.2
trans-1,3-Dichloropropene		ND		2.3	5.2
Trichloroethene		ND		1.2	5.2
Trichlorofluoromethane		ND		0.49	5.2

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB12 SS (0-1) 040212**

Lab Sample ID:	480-18049-20			Date Sampled: 04/02/2012 1400
Client Matrix:	Solid	% Moisture:	12.0	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7835.D
Dilution:	1.0			Initial Weight/Volume:	5.43 g
Analysis Date:	04/06/2012 0228			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.64	5.2
Xylenes, Total		7.0	J B	0.88	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		64 - 126
Toluene-d8 (Surr)	107		71 - 125
4-Bromofluorobenzene (Surr)	105		72 - 126

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB12 SS (2-3)040212**

Lab Sample ID: 480-18049-21

Client Matrix: Solid

% Moisture: 7.9

Date Sampled: 04/02/2012 1400

Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7836.D
Dilution:	1.0			Initial Weight/Volume:	5.87 g
Analysis Date:	04/06/2012 0254			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.34	4.6
1,1,2,2-Tetrachloroethane		ND		0.75	4.6
1,1,2-Trichloroethane		ND		0.60	4.6
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.1	4.6
1,1-Dichloroethane		ND		0.56	4.6
1,1-Dichloroethene		ND		0.57	4.6
1,2,4-Trichlorobenzene		ND		0.28	4.6
1,2-Dibromo-3-Chloropropane		ND		2.3	4.6
1,2-Dibromoethane		ND		0.59	4.6
1,2-Dichlorobenzene		ND		0.36	4.6
1,2-Dichloroethane		ND		0.23	4.6
1,2-Dichloropropane		ND		2.3	4.6
1,3-Dichlorobenzene		ND		0.24	4.6
1,4-Dichlorobenzene		ND		0.65	4.6
2-Hexanone		ND		2.3	23
2-Butanone (MEK)		ND		1.7	23
4-Methyl-2-pentanone (MIBK)		ND		1.5	23
Acetone		ND		3.9	23
Benzene		ND		0.23	4.6
Bromodichloromethane		ND		0.62	4.6
Bromoform		ND		2.3	4.6
Bromomethane		ND		0.42	4.6
Carbon disulfide		ND		2.3	4.6
Carbon tetrachloride		ND		0.45	4.6
Chlorobenzene		ND		0.61	4.6
Dibromochloromethane		ND		0.59	4.6
Chloroethane		ND		1.0	4.6
Chloroform		ND		0.29	4.6
Chloromethane		ND		0.28	4.6
cis-1,2-Dichloroethene		ND		0.59	4.6
cis-1,3-Dichloropropene		ND		0.67	4.6
Cyclohexane		ND		0.65	4.6
Dichlorodifluoromethane		ND		0.38	4.6
Ethylbenzene		3.8	J	0.32	4.6
Isopropylbenzene		1.0	J	0.70	4.6
Methyl acetate		ND		0.86	4.6
Methyl tert-butyl ether		ND		0.45	4.6
Methylcyclohexane		ND		0.70	4.6
Methylene Chloride		ND		2.1	4.6
Styrene		ND		0.23	4.6
Tetrachloroethene		ND		0.62	4.6
Toluene		3.7	J	0.35	4.6
trans-1,2-Dichloroethene		ND		0.48	4.6
trans-1,3-Dichloropropene		ND		2.0	4.6
Trichloroethene		ND		1.0	4.6
Trichlorofluoromethane		ND		0.44	4.6

Client Sample ID: **SB12 SS (2-3)040212**

Lab Sample ID:	480-18049-21			Date Sampled: 04/02/2012 1400
Client Matrix:	Solid	% Moisture:	7.9	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7836.D
Dilution:	1.0			Initial Weight/Volume:	5.87 g
Analysis Date:	04/06/2012 0254			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.56	4.6
Xylenes, Total		42	B	0.78	9.3

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		64 - 126
Toluene-d8 (Surr)	106		71 - 125
4-Bromofluorobenzene (Surr)	107		72 - 126

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID:	**SB09 SS (1-2) 040212**				
Lab Sample ID:	480-18049-22			Date Sampled:	04/02/2012 1415
Client Matrix:	Solid	% Moisture:	15.2	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58389	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10714.D
Dilution:	1.0			Initial Weight/Volume:	5.11 g
Analysis Date:	04/06/2012 0830			Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		32	120
1,1,2,2-Tetrachloroethane		ND		19	120
1,1,2-Trichloroethane		ND		24	120
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		58	120
1,1-Dichloroethane		ND		36	120
1,1-Dichloroethene		ND		40	120
1,2,4-Trichlorobenzene		ND		44	120
1,2-Dibromo-3-Chloropropane		ND		58	120
1,2-Dibromoethane		ND		4.4	120
1,2-Dichlorobenzene		230		29	120
1,2-Dichloroethane		ND		47	120
1,2-Dichloropropane		ND		19	120
1,3-Dichlorobenzene		ND		31	120
1,4-Dichlorobenzene		ND		16	120
2-Hexanone		420	J	240	580
2-Butanone (MEK)		ND		340	580
4-Methyl-2-pentanone (MIBK)		ND		37	580
Acetone		ND		470	580
Benzene		ND		5.5	120
Bromodichloromethane		ND		23	120
Bromoform		ND		58	120
Bromomethane		ND		25	120
Carbon disulfide		ND		52	120
Carbon tetrachloride		ND		29	120
Chlorobenzene		ND		15	120
Dibromochloromethane		ND		56	120
Chloroethane		ND		24	120
Chloroform		ND		79	120
Chloromethane		ND		27	120
cis-1,2-Dichloroethene		ND		32	120
cis-1,3-Dichloropropene		ND		28	120
Cyclohexane		ND		26	120
Dichlorodifluoromethane		ND		50	120
Ethylbenzene		300		34	120
Isopropylbenzene		520		17	120
Methyl acetate		ND		55	120
Methyl tert-butyl ether		ND		44	120
Methylcyclohexane		950		54	120
Methylene Chloride		ND		23	120
Styrene		ND		28	120
Tetrachloroethene		ND		16	120
Toluene		110	J	31	120
trans-1,2-Dichloroethene		ND		27	120
trans-1,3-Dichloropropene		ND		5.5	120
Trichloroethene		ND		32	120
Trichlorofluoromethane		ND		54	120

Client Sample ID: **SB09 SS (1-2) 040212**

Lab Sample ID:	480-18049-22			Date Sampled:	04/02/2012 1415
Client Matrix:	Solid	% Moisture:	15.2	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58389	Instrument ID:	HP5973G
Prep Method:	5035	Prep Batch:	480-58304	Lab File ID:	G10714.D
Dilution:	1.0			Initial Weight/Volume:	5.11 g
Analysis Date:	04/06/2012 0830			Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		39	120
Xylenes, Total		2400		19	230

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	117		53 - 146
Toluene-d8 (Surr)	97		50 - 149
4-Bromofluorobenzene (Surr)	99		49 - 148

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB09 SS (3-4) 040212**

Lab Sample ID:	480-18049-23			Date Sampled: 04/02/2012 1415
Client Matrix:	Solid	% Moisture:	12.4	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7837.D
Dilution:	1.0			Initial Weight/Volume:	5.8 g
Analysis Date:	04/06/2012 0320			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.36	4.9
1,1,2,2-Tetrachloroethane		ND		0.80	4.9
1,1,2-Trichloroethane		ND		0.64	4.9
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.1	4.9
1,1-Dichloroethane		ND		0.60	4.9
1,1-Dichloroethene		ND		0.60	4.9
1,2,4-Trichlorobenzene		ND		0.30	4.9
1,2-Dibromo-3-Chloropropane		ND		2.5	4.9
1,2-Dibromoethane		ND		0.63	4.9
1,2-Dichlorobenzene		ND		0.38	4.9
1,2-Dichloroethane		ND		0.25	4.9
1,2-Dichloropropane		ND		2.5	4.9
1,3-Dichlorobenzene		ND		0.25	4.9
1,4-Dichlorobenzene		ND		0.69	4.9
2-Hexanone		ND		2.5	25
2-Butanone (MEK)		ND		1.8	25
4-Methyl-2-pentanone (MIBK)		ND		1.6	25
Acetone		ND		4.1	25
Benzene		ND		0.24	4.9
Bromodichloromethane		ND		0.66	4.9
Bromoform		ND		2.5	4.9
Bromomethane		ND		0.44	4.9
Carbon disulfide		ND		2.5	4.9
Carbon tetrachloride		ND		0.48	4.9
Chlorobenzene		ND		0.65	4.9
Dibromochloromethane		ND		0.63	4.9
Chloroethane		ND		1.1	4.9
Chloroform		ND		0.30	4.9
Chloromethane		ND		0.30	4.9
cis-1,2-Dichloroethene		ND		0.63	4.9
cis-1,3-Dichloropropene		ND		0.71	4.9
Cyclohexane		ND		0.69	4.9
Dichlorodifluoromethane		ND		0.41	4.9
Ethylbenzene		0.97	J	0.34	4.9
Isopropylbenzene		ND		0.74	4.9
Methyl acetate		ND		0.92	4.9
Methyl tert-butyl ether		ND		0.48	4.9
Methylcyclohexane		ND		0.75	4.9
Methylene Chloride		ND		2.3	4.9
Styrene		ND		0.25	4.9
Tetrachloroethene		ND		0.66	4.9
Toluene		3.0	J	0.37	4.9
trans-1,2-Dichloroethene		ND		0.51	4.9
trans-1,3-Dichloropropene		ND		2.2	4.9
Trichloroethene		ND		1.1	4.9
Trichlorofluoromethane		ND		0.47	4.9

Client Sample ID: **SB09 SS (3-4) 040212**

Lab Sample ID:	480-18049-23			Date Sampled: 04/02/2012 1415
Client Matrix:	Solid	% Moisture:	12.4	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7837.D
Dilution:	1.0			Initial Weight/Volume:	5.8 g
Analysis Date:	04/06/2012 0320			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.60	4.9
Xylenes, Total		2.7	J B	0.83	9.8

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		64 - 126
Toluene-d8 (Surr)	107		71 - 125
4-Bromofluorobenzene (Surr)	106		72 - 126

Client Sample ID: **SB15 SS (1-2) 040212**

Lab Sample ID:	480-18049-24			Date Sampled:	04/02/2012 1430
Client Matrix:	Solid	% Moisture:	13.5	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58428	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7855.D
Dilution:	1.0			Initial Weight/Volume:	5.42 g
Analysis Date:	04/06/2012 1114			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.39	5.3
1,1,2,2-Tetrachloroethane		ND		0.86	5.3
1,1,2-Trichloroethane		ND		0.69	5.3
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.2	5.3
1,1-Dichloroethane		ND		0.65	5.3
1,1-Dichloroethene		ND		0.65	5.3
1,2,4-Trichlorobenzene		ND		0.32	5.3
1,2-Dibromo-3-Chloropropane		ND		2.7	5.3
1,2-Dibromoethane		ND		0.68	5.3
1,2-Dichlorobenzene		ND		0.42	5.3
1,2-Dichloroethane		ND		0.27	5.3
1,2-Dichloropropane		ND		2.7	5.3
1,3-Dichlorobenzene		ND		0.27	5.3
1,4-Dichlorobenzene		ND		0.75	5.3
2-Hexanone		ND		2.7	27
2-Butanone (MEK)		ND		2.0	27
4-Methyl-2-pentanone (MIBK)		ND		1.7	27
Acetone		ND		4.5	27
Benzene		ND		0.26	5.3
Bromodichloromethane		ND		0.71	5.3
Bromoform		ND		2.7	5.3
Bromomethane		ND		0.48	5.3
Carbon disulfide		ND		2.7	5.3
Carbon tetrachloride		ND		0.52	5.3
Chlorobenzene		ND		0.70	5.3
Dibromochloromethane		ND		0.68	5.3
Chloroethane		ND		1.2	5.3
Chloroform		ND		0.33	5.3
Chloromethane		ND		0.32	5.3
cis-1,2-Dichloroethene		ND		0.68	5.3
cis-1,3-Dichloropropene		ND		0.77	5.3
Cyclohexane		ND		0.75	5.3
Dichlorodifluoromethane		ND		0.44	5.3
Ethylbenzene		6.0		0.37	5.3
Isopropylbenzene		ND		0.80	5.3
Methyl acetate		ND		0.99	5.3
Methyl tert-butyl ether		ND		0.52	5.3
Methylcyclohexane		ND		0.81	5.3
Methylene Chloride		ND		2.5	5.3
Styrene		ND		0.27	5.3
Tetrachloroethene		ND		0.72	5.3
Toluene		5.6		0.40	5.3
trans-1,2-Dichloroethene		ND		0.55	5.3
trans-1,3-Dichloropropene		ND		2.3	5.3
Trichloroethene		ND		1.2	5.3
Trichlorofluoromethane		ND		0.50	5.3

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB15 SS (1-2) 040212**

Lab Sample ID: 480-18049-24

Client Matrix: Solid

% Moisture: 13.5

Date Sampled: 04/02/2012 1430

Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58428	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7855.D
Dilution:	1.0			Initial Weight/Volume:	5.42 g
Analysis Date:	04/06/2012 1114			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.65	5.3
Xylenes, Total		16		0.90	11

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		64 - 126
Toluene-d8 (Surr)	107		71 - 125
4-Bromofluorobenzene (Surr)	106		72 - 126

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB15 SS (3-4) 040212**

Lab Sample ID: 480-18049-25

Client Matrix: Solid

% Moisture: 10.0

Date Sampled: 04/02/2012 1430

Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58428	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7856.D
Dilution:	1.0			Initial Weight/Volume:	4.97 g
Analysis Date:	04/06/2012 1139			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.41	5.6
1,1,2,2-Tetrachloroethane		ND		0.91	5.6
1,1,2-Trichloroethane		ND		0.73	5.6
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.3	5.6
1,1-Dichloroethane		ND		0.68	5.6
1,1-Dichloroethene		ND		0.68	5.6
1,2,4-Trichlorobenzene		ND		0.34	5.6
1,2-Dibromo-3-Chloropropane		ND		2.8	5.6
1,2-Dibromoethane		ND		0.72	5.6
1,2-Dichlorobenzene		ND		0.44	5.6
1,2-Dichloroethane		ND		0.28	5.6
1,2-Dichloropropane		ND		2.8	5.6
1,3-Dichlorobenzene		ND		0.29	5.6
1,4-Dichlorobenzene		ND		0.78	5.6
2-Hexanone		ND		2.8	28
2-Butanone (MEK)		12	J	2.0	28
4-Methyl-2-pentanone (MIBK)		ND		1.8	28
Acetone		81		4.7	28
Benzene		ND		0.27	5.6
Bromodichloromethane		ND		0.75	5.6
Bromoform		ND		2.8	5.6
Bromomethane		ND		0.50	5.6
Carbon disulfide		ND		2.8	5.6
Carbon tetrachloride		ND		0.54	5.6
Chlorobenzene		ND		0.74	5.6
Dibromochloromethane		ND		0.72	5.6
Chloroethane		ND		1.3	5.6
Chloroform		ND		0.35	5.6
Chloromethane		ND		0.34	5.6
cis-1,2-Dichloroethene		ND		0.72	5.6
cis-1,3-Dichloropropene		ND		0.80	5.6
Cyclohexane		ND		0.78	5.6
Dichlorodifluoromethane		ND		0.46	5.6
Ethylbenzene		5.2	J	0.39	5.6
Isopropylbenzene		ND		0.84	5.6
Methyl acetate		ND		1.0	5.6
Methyl tert-butyl ether		ND		0.55	5.6
Methylcyclohexane		ND		0.85	5.6
Methylene Chloride		ND		2.6	5.6
Styrene		ND		0.28	5.6
Tetrachloroethene		ND		0.75	5.6
Toluene		17		0.42	5.6
trans-1,2-Dichloroethene		ND		0.58	5.6
trans-1,3-Dichloropropene		ND		2.5	5.6
Trichloroethene		ND		1.2	5.6
Trichlorofluoromethane		ND		0.53	5.6

Client Sample ID: **SB15 SS (3-4) 040212**

Lab Sample ID:	480-18049-25			Date Sampled: 04/02/2012 1430
Client Matrix:	Solid	% Moisture:	10.0	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58428	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7856.D
Dilution:	1.0			Initial Weight/Volume:	4.97 g
Analysis Date:	04/06/2012 1139			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.68	5.6
Xylenes, Total		16		0.94	11

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		64 - 126
Toluene-d8 (Surr)	106		71 - 125
4-Bromofluorobenzene (Surr)	105		72 - 126

Client Sample ID: **SB06 SS (1-2) 040212**

Lab Sample ID:	480-18049-26			Date Sampled: 04/02/2012 1200
Client Matrix:	Solid	% Moisture:	11.4	Date Received: 04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58428	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7857.D
Dilution:	1.0			Initial Weight/Volume:	5.21 g
Analysis Date:	04/06/2012 1205			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.39	5.4
1,1,2,2-Tetrachloroethane		ND		0.88	5.4
1,1,2-Trichloroethane		ND		0.70	5.4
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.2	5.4
1,1-Dichloroethane		ND		0.66	5.4
1,1-Dichloroethene		ND		0.66	5.4
1,2,4-Trichlorobenzene		ND		0.33	5.4
1,2-Dibromo-3-Chloropropane		ND		2.7	5.4
1,2-Dibromoethane		ND		0.70	5.4
1,2-Dichlorobenzene		ND		0.42	5.4
1,2-Dichloroethane		ND		0.27	5.4
1,2-Dichloropropane		ND		2.7	5.4
1,3-Dichlorobenzene		ND		0.28	5.4
1,4-Dichlorobenzene		ND		0.76	5.4
2-Hexanone		ND		2.7	27
2-Butanone (MEK)		ND		2.0	27
4-Methyl-2-pentanone (MIBK)		ND		1.8	27
Acetone		ND		4.6	27
Benzene		ND		0.27	5.4
Bromodichloromethane		ND		0.73	5.4
Bromoform		ND		2.7	5.4
Bromomethane		ND		0.49	5.4
Carbon disulfide		ND		2.7	5.4
Carbon tetrachloride		ND		0.52	5.4
Chlorobenzene		ND		0.72	5.4
Dibromochloromethane		ND		0.69	5.4
Chloroethane		ND		1.2	5.4
Chloroform		ND		0.33	5.4
Chloromethane		ND		0.33	5.4
cis-1,2-Dichloroethene		ND		0.69	5.4
cis-1,3-Dichloropropene		ND		0.78	5.4
Cyclohexane		ND		0.76	5.4
Dichlorodifluoromethane		ND		0.45	5.4
Ethylbenzene		2.4	J	0.37	5.4
Isopropylbenzene		ND		0.82	5.4
Methyl acetate		ND		1.0	5.4
Methyl tert-butyl ether		ND		0.53	5.4
Methylcyclohexane		ND		0.82	5.4
Methylene Chloride		ND		2.5	5.4
Styrene		ND		0.27	5.4
Tetrachloroethene		ND		0.73	5.4
Toluene		ND		0.41	5.4
trans-1,2-Dichloroethene		ND		0.56	5.4
trans-1,3-Dichloropropene		ND		2.4	5.4
Trichloroethene		ND		1.2	5.4
Trichlorofluoromethane		ND		0.51	5.4

Client Sample ID:	**SB06 SS (1-2) 040212**				
Lab Sample ID:	480-18049-26			Date Sampled:	04/02/2012 1200
Client Matrix:	Solid	% Moisture:	11.4	Date Received:	04/04/2012 0900

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	480-58428	Instrument ID:	HP5973F
Prep Method:	5035	Prep Batch:	480-58091	Lab File ID:	F7857.D
Dilution:	1.0			Initial Weight/Volume:	5.21 g
Analysis Date:	04/06/2012 1205			Final Weight/Volume:	5 mL
Prep Date:	04/04/2012 1404				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Vinyl chloride		ND		0.66	5.4
Xylenes, Total		0.95	J	0.91	11

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		64 - 126
Toluene-d8 (Surr)	108		71 - 125
4-Bromofluorobenzene (Surr)	106		72 - 126

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB01 SS (2-3) 040212**

Lab Sample ID: 480-18049-1
Client Matrix: Solid
% Moisture: 10.8
Date Sampled: 04/02/2012 0915
Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8774.D
Dilution:	20			Initial Weight/Volume:	+30.10 g
Analysis Date:	04/09/2012 2040			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		240	3800
bis (2-chloroisopropyl) ether		ND		390	3800
2,4,5-Trichlorophenol		ND		820	3800
2,4,6-Trichlorophenol		ND		250	3800
2,4-Dichlorophenol		ND		200	3800
2,4-Dimethylphenol		ND		1000	3800
2,4-Dinitrophenol		ND		1300	7400
2,4-Dinitrotoluene		ND	*	580	3800
2,6-Dinitrotoluene		ND		920	3800
2-Chloronaphthalene		ND		250	3800
2-Chlorophenol		ND		190	3800
2-Methylnaphthalene		ND		46	3800
2-Methylphenol		ND		120	3800
2-Nitroaniline		ND		1200	7400
2-Nitrophenol		ND		170	3800
3,3'-Dichlorobenzidine		ND		3300	3800
3-Nitroaniline		ND		870	7400
4,6-Dinitro-2-methylphenol		ND		1300	7400
4-Bromophenyl phenyl ether		ND		1200	3800
4-Chloro-3-methylphenol		ND		160	3800
4-Chloroaniline		ND		1100	3800
4-Chlorophenyl phenyl ether		ND		80	3800
4-Methylphenol		ND		210	7400
4-Nitroaniline		ND		420	7400
4-Nitrophenol		ND		910	7400
Acenaphthene		100	J	44	3800
Acenaphthylene		ND		31	3800
Acetophenone		15000		190	3800
Anthracene		350	J	97	3800
Atrazine		ND		170	3800
Benzaldehyde		ND	*	410	3800
Benzo(a)anthracene		3100	J	65	3800
Benzo(a)pyrene		2000	J	91	3800
Benzo(b)fluoranthene		4900		73	3800
Benzo(g,h,i)perylene		2500	J	45	3800
Benzo(k)fluoranthene		2100	J B	42	3800
Bis(2-chloroethoxy)methane		ND		210	3800
Bis(2-chloroethyl)ether		ND		330	3800
Bis(2-ethylhexyl) phthalate		ND		1200	3800
Butyl benzyl phthalate		ND		1000	3800
Caprolactam		ND		1600	3800
Carbazole		ND		44	3800
Chrysene		3500	J B	38	3800
Di-n-butyl phthalate		ND		1300	3800
Di-n-octyl phthalate		ND		88	3800
Dibenz(a,h)anthracene		3000	J	44	3800

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID:	**SB01 SS (2-3) 040212**			
Lab Sample ID:	480-18049-1			Date Sampled: 04/02/2012 0915
Client Matrix:	Solid	% Moisture:	10.8	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8774.D
Dilution:	20			Initial Weight/Volume:	+30.10 g
Analysis Date:	04/09/2012 2040			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		39	3800
Diethyl phthalate		ND		110	3800
Dimethyl phthalate		ND		98	3800
Fluoranthene		6000		55	3800
Fluorene		ND		87	3800
Hexachlorobenzene		ND		190	3800
Hexachlorobutadiene		ND		190	3800
Hexachlorocyclopentadiene		ND		1100	3800
Hexachloroethane		ND		290	3800
Indeno(1,2,3-cd)pyrene		2300	J	100	3800
Isophorone		ND		190	3800
N-Nitrosodi-n-propylamine		ND		300	3800
N-Nitrosodiphenylamine		ND	*	210	3800
Naphthalene		1900	J	63	3800
Nitrobenzene		ND		170	3800
Pentachlorophenol		ND		1300	7400
Phenanthrene		1600	J	79	3800
Phenol		ND		400	3800
Pyrene		5800		24	3800

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	93		39 - 146
2-Fluorobiphenyl	89		37 - 120
2-Fluorophenol	63		18 - 120
Nitrobenzene-d5	71		34 - 132
p-Terphenyl-d14	100		65 - 153
Phenol-d5	71		11 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB02 SS (2-3) 040212**

Lab Sample ID: 480-18049-2

Date Sampled: 04/02/2012 1004

Client Matrix: Solid

% Moisture: 13.3

Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8775.D
Dilution:	10			Initial Weight/Volume:	+30.47 g
Analysis Date:	04/09/2012 2104			Final Weight/Volume:	6 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		2300	J	720	12000
bis (2-chloroisopropyl) ether		ND		1200	12000
2,4,5-Trichlorophenol		ND		2500	12000
2,4,6-Trichlorophenol		ND		760	12000
2,4-Dichlorophenol		ND		600	12000
2,4-Dimethylphenol		ND		3100	12000
2,4-Dinitrophenol		ND		4000	22000
2,4-Dinitrotoluene		ND	*	1800	12000
2,6-Dinitrotoluene		ND		2800	12000
2-Chloronaphthalene		ND		770	12000
2-Chlorophenol		ND		590	12000
2-Methylnaphthalene		32000		140	12000
2-Methylphenol		ND		350	12000
2-Nitroaniline		ND		3700	22000
2-Nitrophenol		ND		530	12000
3,3'-Dichlorobenzidine		ND		10000	12000
3-Nitroaniline		ND		2600	22000
4,6-Dinitro-2-methylphenol		ND		4000	22000
4-Bromophenyl phenyl ether		ND		3700	12000
4-Chloro-3-methylphenol		ND		470	12000
4-Chloroaniline		ND		3400	12000
4-Chlorophenyl phenyl ether		ND		250	12000
4-Methylphenol		ND		640	22000
4-Nitroaniline		ND		1300	22000
4-Nitrophenol		ND		2800	22000
Acenaphthene		2800	J	140	12000
Acenaphthylene		ND		94	12000
Acetophenone		36000		590	12000
Anthracene		840	J	290	12000
Atrazine		ND		510	12000
Benzaldehyde		ND	*	1300	12000
Benzo(a)anthracene		2700	J	200	12000
Benzo(a)pyrene		1600	J	280	12000
Benzo(b)fluoranthene		3300	J	220	12000
Benzo(g,h,i)perylene		ND		140	12000
Benzo(k)fluoranthene		1400	J B	130	12000
Bis(2-chloroethoxy)methane		ND		630	12000
Bis(2-chloroethyl)ether		ND		990	12000
Bis(2-ethylhexyl) phthalate		7900	J	3700	12000
Butyl benzyl phthalate		ND		3100	12000
Caprolactam		ND		5000	12000
Carbazole		ND		130	12000
Chrysene		2400	J B	110	12000
Di-n-butyl phthalate		ND		4000	12000
Di-n-octyl phthalate		ND		270	12000
Dibenz(a,h)anthracene		ND		140	12000

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB02 SS (2-3) 040212**

Lab Sample ID:	480-18049-2			Date Sampled: 04/02/2012 1004
Client Matrix:	Solid	% Moisture:	13.3	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8775.D
Dilution:	10			Initial Weight/Volume:	+30.47 g
Analysis Date:	04/09/2012 2104			Final Weight/Volume:	6 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		2300	J	120	12000
Diethyl phthalate		ND		350	12000
Dimethyl phthalate		ND		300	12000
Fluoranthene		5900	J	170	12000
Fluorene		ND		260	12000
Hexachlorobenzene		ND		570	12000
Hexachlorobutadiene		ND		590	12000
Hexachlorocyclopentadiene		ND		3500	12000
Hexachloroethane		ND		890	12000
Indeno(1,2,3-cd)pyrene		1500	J	320	12000
Isophorone		ND		570	12000
N-Nitrosodi-n-propylamine		ND		910	12000
N-Nitrosodiphenylamine		ND	*	630	12000
Naphthalene		59000		190	12000
Nitrobenzene		ND		510	12000
Pentachlorophenol		ND		3900	22000
Phenanthrene		5300	J	240	12000
Phenol		11000	J	1200	12000
Pyrene		4300	J	74	12000

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	103		39 - 146
2-Fluorobiphenyl	106		37 - 120
2-Fluorophenol	77		18 - 120
Nitrobenzene-d5	113		34 - 132
p-Terphenyl-d14	116		65 - 153
Phenol-d5	94		11 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB02 SS (0-3) 040212**

Lab Sample ID: 480-18049-3

Client Matrix: Solid

Date Sampled: 04/02/2012 1004

Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)-TCLP

Analysis Method:	8270C	Analysis Batch:	480-58601	Instrument ID:	HP5973V
Prep Method:	3510C	Prep Batch:	480-58531	Lab File ID:	V8647.D
Dilution:	1.0	Leach Batch:	480-58275	Initial Weight/Volume:	250 mL
Analysis Date:	04/07/2012 1653			Final Weight/Volume:	1 mL
Prep Date:	04/06/2012 1352			Injection Volume:	1 uL
Leach Date:	04/05/2012 1009				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
1,4-Dichlorobenzene		ND		0.00046	0.010
2,4-Dinitrotoluene		ND		0.00045	0.0050
Hexachlorobenzene		ND		0.00051	0.0050
Hexachlorobutadiene		ND		0.00068	0.0050
Hexachloroethane		ND		0.00059	0.0050
3-Methylphenol		0.85	E	0.00040	0.010
2-Methylphenol		0.12		0.00040	0.0050
4-Methylphenol		0.85	E	0.00036	0.010
Nitrobenzene		ND		0.00029	0.0050
Pentachlorophenol		ND		0.0022	0.010
Pyridine		ND		0.00041	0.025
2,4,5-Trichlorophenol		ND		0.00048	0.0050
2,4,6-Trichlorophenol		ND		0.00061	0.0050

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	106		52 - 132
2-Fluorobiphenyl	87		48 - 120
2-Fluorophenol	43		20 - 120
Nitrobenzene-d5	71		46 - 120
p-Terphenyl-d14	119		67 - 150
Phenol-d5	28		16 - 120

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB02 SS (0-3) 040212**

Lab Sample ID: 480-18049-3

Client Matrix: Solid

Date Sampled: 04/02/2012 1004

Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)-TCLP

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3510C	Prep Batch:	480-58531	Lab File ID:	V8768.D
Dilution:	5.0	Leach Batch:	480-58275	Initial Weight/Volume:	250 mL
Analysis Date:	04/09/2012 1816	Run Type:	DL	Final Weight/Volume:	1 mL
Prep Date:	04/06/2012 1352			Injection Volume:	1 uL
Leach Date:	04/05/2012 1009				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
1,4-Dichlorobenzene		ND		0.0023	0.050
2,4-Dinitrotoluene		ND		0.0022	0.025
Hexachlorobenzene		ND		0.0026	0.025
Hexachlorobutadiene		ND		0.0034	0.025
Hexachloroethane		ND		0.0030	0.025
3-Methylphenol		0.89		0.0020	0.050
2-Methylphenol		0.13		0.0020	0.025
4-Methylphenol		0.89		0.0018	0.050
Nitrobenzene		ND		0.0015	0.025
Pentachlorophenol		ND		0.011	0.050
Pyridine		ND		0.0021	0.13
2,4,5-Trichlorophenol		ND		0.0024	0.025
2,4,6-Trichlorophenol		ND		0.0031	0.025

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	82		52 - 132
2-Fluorobiphenyl	91		48 - 120
2-Fluorophenol	44		20 - 120
Nitrobenzene-d5	81		46 - 120
p-Terphenyl-d14	112		67 - 150
Phenol-d5	27		16 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB03 SS (1-2) 040212**

Lab Sample ID:	480-18049-4			Date Sampled:	04/02/2012 1030
Client Matrix:	Solid	% Moisture:	20.5	Date Received:	04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8776.D
Dilution:	20			Initial Weight/Volume:	+30.18 g
Analysis Date:	04/09/2012 2128			Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		7700	J	2600	43000
bis (2-chloroisopropyl) ether		ND		4400	43000
2,4,5-Trichlorophenol		ND		9200	43000
2,4,6-Trichlorophenol		ND		2800	43000
2,4-Dichlorophenol		ND		2200	43000
2,4-Dimethylphenol		67000		11000	43000
2,4-Dinitrophenol		ND		15000	83000
2,4-Dinitrotoluene		ND	*	6500	43000
2,6-Dinitrotoluene		ND		10000	43000
2-Chloronaphthalene		ND		2800	43000
2-Chlorophenol		ND		2100	43000
2-Methylnaphthalene		ND		510	43000
2-Methylphenol		ND		1300	43000
2-Nitroaniline		ND		14000	83000
2-Nitrophenol		ND		1900	43000
3,3'-Dichlorobenzidine		ND		37000	43000
3-Nitroaniline		ND		9700	83000
4,6-Dinitro-2-methylphenol		ND		15000	83000
4-Bromophenyl phenyl ether		ND		13000	43000
4-Chloro-3-methylphenol		ND		1700	43000
4-Chloroaniline		ND		12000	43000
4-Chlorophenyl phenyl ether		ND		900	43000
4-Methylphenol		ND		2400	83000
4-Nitroaniline		ND		4700	83000
4-Nitrophenol		ND		10000	83000
Acenaphthene		ND		500	43000
Acenaphthylene		ND		350	43000
Acetophenone		ND		2200	43000
Anthracene		8200	J	1100	43000
Atrazine		ND		1900	43000
Benzaldehyde		ND	*	4600	43000
Benzo(a)anthracene		8800	J	730	43000
Benzo(a)pyrene		ND		1000	43000
Benzo(b)fluoranthene		8800	J	820	43000
Benzo(g,h,i)perylene		3200	J	510	43000
Benzo(k)fluoranthene		4900	J B	460	43000
Bis(2-chloroethoxy)methane		ND		2300	43000
Bis(2-chloroethyl)ether		ND		3600	43000
Bis(2-ethylhexyl) phthalate		23000	J	14000	43000
Butyl benzyl phthalate		ND		11000	43000
Caprolactam		ND		18000	43000
Carbazole		ND		490	43000
Chrysene		8600	J B	420	43000
Di-n-butyl phthalate		ND		15000	43000
Di-n-octyl phthalate		ND		990	43000
Dibenz(a,h)anthracene		ND		500	43000

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB03 SS (1-2) 040212**

Lab Sample ID:	480-18049-4			Date Sampled: 04/02/2012 1030
Client Matrix:	Solid	% Moisture:	20.5	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8776.D
Dilution:	20			Initial Weight/Volume:	+30.18 g
Analysis Date:	04/09/2012 2128			Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		440	43000
Diethyl phthalate		ND		1300	43000
Dimethyl phthalate		ND		1100	43000
Fluoranthene		22000	J	610	43000
Fluorene		5900	J	970	43000
Hexachlorobenzene		ND		2100	43000
Hexachlorobutadiene		ND		2200	43000
Hexachlorocyclopentadiene		ND		13000	43000
Hexachloroethane		ND		3300	43000
Indeno(1,2,3-cd)pyrene		ND		1200	43000
Isophorone		ND		2100	43000
N-Nitrosodi-n-propylamine		ND		3300	43000
N-Nitrosodiphenylamine		ND	*	2300	43000
Naphthalene		63000		700	43000
Nitrobenzene		ND		1900	43000
Pentachlorophenol		ND		14000	83000
Phenanthrene		35000	J	890	43000
Phenol		ND		4400	43000
Pyrene		17000	J	270	43000

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	0	X	39 - 146
2-Fluorobiphenyl	90		37 - 120
2-Fluorophenol	0	X	18 - 120
Nitrobenzene-d5	73		34 - 132
p-Terphenyl-d14	118		65 - 153
Phenol-d5	0	X	11 - 120

Client Sample ID: **SB04 SS (2-3) 040212**

Lab Sample ID: 480-18049-5
Client Matrix: Solid
% Moisture: 13.1
Date Sampled: 04/02/2012 1045
Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8777.D
Dilution:	20			Initial Weight/Volume:	+30.55 g
Analysis Date:	04/09/2012 2152			Final Weight/Volume:	5 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		6700	J	1200	19000
bis (2-chloroisopropyl) ether		ND		2000	19000
2,4,5-Trichlorophenol		ND		4200	19000
2,4,6-Trichlorophenol		ND		1300	19000
2,4-Dichlorophenol		ND		1000	19000
2,4-Dimethylphenol		23000		5200	19000
2,4-Dinitrophenol		ND		6700	37000
2,4-Dinitrotoluene		ND	*	3000	19000
2,6-Dinitrotoluene		ND		4700	19000
2-Chloronaphthalene		ND		1300	19000
2-Chlorophenol		ND		970	19000
2-Methylnaphthalene		ND		230	19000
2-Methylphenol		ND		590	19000
2-Nitroaniline		ND		6100	37000
2-Nitrophenol		ND		870	19000
3,3'-Dichlorobenzidine		ND		17000	19000
3-Nitroaniline		ND		4400	37000
4,6-Dinitro-2-methylphenol		ND		6600	37000
4-Bromophenyl phenyl ether		ND		6100	19000
4-Chloro-3-methylphenol		ND		780	19000
4-Chloroaniline		ND		5600	19000
4-Chlorophenyl phenyl ether		ND		410	19000
4-Methylphenol		ND		1100	37000
4-Nitroaniline		ND		2100	37000
4-Nitrophenol		ND		4600	37000
Acenaphthene		ND		220	19000
Acenaphthylene		650	J	160	19000
Acetophenone		14000	J	980	19000
Anthracene		2300	J	490	19000
Atrazine		ND		850	19000
Benzaldehyde		ND	*	2100	19000
Benzo(a)anthracene		3300	J	330	19000
Benzo(a)pyrene		ND		460	19000
Benzo(b)fluoranthene		2900	J	370	19000
Benzo(g,h,i)perylene		ND		230	19000
Benzo(k)fluoranthene		1700	J B	210	19000
Bis(2-chloroethoxy)methane		ND		1000	19000
Bis(2-chloroethyl)ether		ND		1600	19000
Bis(2-ethylhexyl) phthalate		ND		6100	19000
Butyl benzyl phthalate		ND		5100	19000
Caprolactam		ND		8300	19000
Carbazole		ND		220	19000
Chrysene		3000	J B	190	19000
Di-n-butyl phthalate		ND		6600	19000
Di-n-octyl phthalate		ND		450	19000
Dibenz(a,h)anthracene		ND		220	19000

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB04 SS (2-3) 040212**

Lab Sample ID:	480-18049-5			Date Sampled:	04/02/2012 1045
Client Matrix:	Solid	% Moisture:	13.1	Date Received:	04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8777.D
Dilution:	20			Initial Weight/Volume:	+30.55 g
Analysis Date:	04/09/2012 2152			Final Weight/Volume:	5 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		3300	J	200	19000
Diethyl phthalate		ND		580	19000
Dimethyl phthalate		ND		500	19000
Fluoranthene		7500	J	280	19000
Fluorene		2200	J	440	19000
Hexachlorobenzene		ND		950	19000
Hexachlorobutadiene		ND		980	19000
Hexachlorocyclopentadiene		ND		5800	19000
Hexachloroethane		ND		1500	19000
Indeno(1,2,3-cd)pyrene		1200	J	530	19000
Isophorone		ND		950	19000
N-Nitrosodi-n-propylamine		ND		1500	19000
N-Nitrosodiphenylamine		ND	*	1000	19000
Naphthalene		42000		320	19000
Nitrobenzene		ND		850	19000
Pentachlorophenol		ND		6500	37000
Phenanthrene		12000	J	400	19000
Phenol		ND		2000	19000
Pyrene		5800	J	120	19000

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	0	X	39 - 146
2-Fluorobiphenyl	105		37 - 120
2-Fluorophenol	52		18 - 120
Nitrobenzene-d5	105		34 - 132
p-Terphenyl-d14	119		65 - 153
Phenol-d5	69		11 - 120

Analytical Data

Client: CHA Inc	Job Number: 480-18049-1

Client Sample ID: **SB05 SS (1-2 040212**

Lab Sample ID:	480-18049-6			Date Sampled: 04/02/2012 1115
Client Matrix:	Solid	% Moisture:	16.1	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8778.D
Dilution:	20			Initial Weight/Volume:	+30.40 g
Analysis Date:	04/09/2012 2216			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		250	4000
bis (2-chloroisopropyl) ether		ND		420	4000
2,4,5-Trichlorophenol		ND		870	4000
2,4,6-Trichlorophenol		ND		260	4000
2,4-Dichlorophenol		ND		210	4000
2,4-Dimethylphenol		ND		1100	4000
2,4-Dinitrophenol		ND		1400	7800
2,4-Dinitrotoluene		ND	*	610	4000
2,6-Dinitrotoluene		ND		970	4000
2-Chloronaphthalene		ND		270	4000
2-Chlorophenol		ND		200	4000
2-Methylnaphthalene		640	J	48	4000
2-Methylphenol		ND		120	4000
2-Nitroaniline		ND		1300	7800
2-Nitrophenol		ND		180	4000
3,3'-Dichlorobenzidine		ND		3500	4000
3-Nitroaniline		ND		910	7800
4,6-Dinitro-2-methylphenol		ND		1400	7800
4-Bromophenyl phenyl ether		ND		1300	4000
4-Chloro-3-methylphenol		ND		160	4000
4-Chloroaniline		ND		1200	4000
4-Chlorophenyl phenyl ether		ND		85	4000
4-Methylphenol		ND		220	7800
4-Nitroaniline		ND		440	7800
4-Nitrophenol		ND		960	7800
Acenaphthene		160	J	47	4000
Acenaphthylene		ND		32	4000
Acetophenone		ND		200	4000
Anthracene		ND		100	4000
Atrazine		ND		180	4000
Benzaldehyde		ND	*	440	4000
Benzo(a)anthracene		220	J	69	4000
Benzo(a)pyrene		ND		96	4000
Benzo(b)fluoranthene		ND		77	4000
Benzo(g,h,i)perylene		ND		48	4000
Benzo(k)fluoranthene		ND		44	4000
Bis(2-chloroethoxy)methane		ND		220	4000
Bis(2-chloroethyl)ether		ND		340	4000
Bis(2-ethylhexyl) phthalate		ND		1300	4000
Butyl benzyl phthalate		ND		1100	4000
Caprolactam		ND		1700	4000
Carbazole		ND		46	4000
Chrysene		320	J B	40	4000
Di-n-butyl phthalate		ND		1400	4000
Di-n-octyl phthalate		ND		93	4000
Dibenz(a,h)anthracene		ND		47	4000

Client Sample ID: **SB05 SS (1-2 040212**

Lab Sample ID:	480-18049-6			Date Sampled: 04/02/2012 1115
Client Matrix:	Solid	% Moisture:	16.1	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8778.D
Dilution:	20			Initial Weight/Volume:	+30.40 g
Analysis Date:	04/09/2012 2216			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		41	4000
Diethyl phthalate		ND		120	4000
Dimethyl phthalate		ND		100	4000
Fluoranthene		ND		58	4000
Fluorene		ND		92	4000
Hexachlorobenzene		ND		200	4000
Hexachlorobutadiene		ND		200	4000
Hexachlorocyclopentadiene		ND		1200	4000
Hexachloroethane		ND		310	4000
Indeno(1,2,3-cd)pyrene		ND		110	4000
Isophorone		ND		200	4000
N-Nitrosodi-n-propylamine		ND		310	4000
N-Nitrosodiphenylamine		ND	*	220	4000
Naphthalene		520	J	66	4000
Nitrobenzene		ND		180	4000
Pentachlorophenol		ND		1400	7800
Phenanthrene		400	J	83	4000
Phenol		2700	J	420	4000
Pyrene		ND		26	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	0	X	39 - 146
2-Fluorobiphenyl	10	X	37 - 120
2-Fluorophenol	0	X	18 - 120
Nitrobenzene-d5	0	X	34 - 132
p-Terphenyl-d14	0	X	65 - 153
Phenol-d5	0	X	11 - 120

Client Sample ID: **SB05 SS (0-3) 040212**

Lab Sample ID:	480-18049-7	Date Sampled: 04/02/2012 1115
Client Matrix:	Solid	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)-TCLP

Analysis Method:	8270C	Analysis Batch:	480-58601	Instrument ID:	HP5973V
Prep Method:	3510C	Prep Batch:	480-58531	Lab File ID:	V8648.D
Dilution:	1.0	Leach Batch:	480-58275	Initial Weight/Volume:	250 mL
Analysis Date:	04/07/2012 1717			Final Weight/Volume:	1 mL
Prep Date:	04/06/2012 1352			Injection Volume:	1 uL
Leach Date:	04/05/2012 1009				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
1,4-Dichlorobenzene		ND		0.00046	0.010
2,4-Dinitrotoluene		ND		0.00045	0.0050
Hexachlorobenzene		ND		0.00051	0.0050
Hexachlorobutadiene		ND		0.00068	0.0050
Hexachloroethane		ND		0.00059	0.0050
3-Methylphenol		0.050		0.00040	0.010
2-Methylphenol		ND		0.00040	0.0050
4-Methylphenol		0.050		0.00036	0.010
Nitrobenzene		ND		0.00029	0.0050
Pentachlorophenol		ND		0.0022	0.010
Pyridine		ND		0.00041	0.025
2,4,5-Trichlorophenol		ND		0.00048	0.0050
2,4,6-Trichlorophenol		ND		0.00061	0.0050

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	111		52 - 132
2-Fluorobiphenyl	94		48 - 120
2-Fluorophenol	44		20 - 120
Nitrobenzene-d5	76		46 - 120
p-Terphenyl-d14	112		67 - 150
Phenol-d5	28		16 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB06 SS (3-4) 040212**

Lab Sample ID:	480-18049-8			Date Sampled:	04/02/2012 1200
Client Matrix:	Solid	% Moisture:	20.6	Date Received:	04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8808.D
Dilution:	10			Initial Weight/Volume:	+30.23 g
Analysis Date:	04/10/2012 1056			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		2800		130	2100
bis (2-chloroisopropyl) ether		ND		220	2100
2,4,5-Trichlorophenol		ND		460	2100
2,4,6-Trichlorophenol		ND		140	2100
2,4-Dichlorophenol		ND		110	2100
2,4-Dimethylphenol		ND		570	2100
2,4-Dinitrophenol		ND		740	4100
2,4-Dinitrotoluene		ND	*	330	2100
2,6-Dinitrotoluene		ND		520	2100
2-Chloronaphthalene		ND		140	2100
2-Chlorophenol		ND		110	2100
2-Methylnaphthalene		32000		26	2100
2-Methylphenol		ND		65	2100
2-Nitroaniline		ND		680	4100
2-Nitrophenol		ND		96	2100
3,3'-Dichlorobenzidine		ND		1900	2100
3-Nitroaniline		ND		490	4100
4,6-Dinitro-2-methylphenol		ND		730	4100
4-Bromophenyl phenyl ether		ND		670	2100
4-Chloro-3-methylphenol		ND		87	2100
4-Chloroaniline		ND		620	2100
4-Chlorophenyl phenyl ether		ND		45	2100
4-Methylphenol		ND		120	4100
4-Nitroaniline		ND		240	4100
4-Nitrophenol		ND		510	4100
Acenaphthene		ND		25	2100
Acenaphthylene		ND		17	2100
Acetophenone		13000		110	2100
Anthracene		200	J	54	2100
Atrazine		ND		94	2100
Benzaldehyde		ND	*	230	2100
Benzo(a)anthracene		130	J	36	2100
Benzo(a)pyrene		ND		51	2100
Benzo(b)fluoranthene		ND		41	2100
Benzo(g,h,i)perylene		ND		25	2100
Benzo(k)fluoranthene		ND		23	2100
Bis(2-chloroethoxy)methane		ND		110	2100
Bis(2-chloroethyl)ether		ND		180	2100
Bis(2-ethylhexyl) phthalate		ND		680	2100
Butyl benzyl phthalate		ND		570	2100
Caprolactam		ND		910	2100
Carbazole		ND		24	2100
Chrysene		ND		21	2100
Di-n-butyl phthalate		ND		730	2100
Di-n-octyl phthalate		ND		49	2100
Dibenz(a,h)anthracene		ND		25	2100

Client Sample ID: **SB06 SS (3-4) 040212**

Lab Sample ID: 480-18049-8 Date Sampled: 04/02/2012 1200
Client Matrix: Solid % Moisture: 20.6 Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8808.D
Dilution:	10			Initial Weight/Volume:	+30.23 g
Analysis Date:	04/10/2012 1056			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		1200	J	22	2100
Diethyl phthalate		ND		64	2100
Dimethyl phthalate		ND		55	2100
Fluoranthene		250	J	31	2100
Fluorene		610	J	49	2100
Hexachlorobenzene		ND		100	2100
Hexachlorobutadiene		ND		110	2100
Hexachlorocyclopentadiene		ND		640	2100
Hexachloroethane		ND		160	2100
Indeno(1,2,3-cd)pyrene		ND		58	2100
Isophorone		ND		110	2100
N-Nitrosodi-n-propylamine		ND		170	2100
N-Nitrosodiphenylamine		ND	*	120	2100
Naphthalene		48000		35	2100
Nitrobenzene		ND		94	2100
Pentachlorophenol		ND		720	4100
Phenanthrene		930	J	44	2100
Phenol		ND		220	2100
Pyrene		210	J	14	2100

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	87		39 - 146
2-Fluorobiphenyl	97		37 - 120
2-Fluorophenol	78		18 - 120
Nitrobenzene-d5	78		34 - 132
p-Terphenyl-d14	101		65 - 153
Phenol-d5	78		11 - 120

Client Sample ID: **SB07 SS (1-2) 040212**

Lab Sample ID:	480-18049-9			Date Sampled: 04/02/2012 1215
Client Matrix:	Solid	% Moisture:	23.3	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8780.D
Dilution:	1.0			Initial Weight/Volume:	+30.65 g
Analysis Date:	04/09/2012 2304			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		22	J	13	220
bis (2-chloroisopropyl) ether		ND		23	220
2,4,5-Trichlorophenol		ND		47	220
2,4,6-Trichlorophenol		ND		14	220
2,4-Dichlorophenol		ND		11	220
2,4-Dimethylphenol		ND		58	220
2,4-Dinitrophenol		ND		75	420
2,4-Dinitrotoluene		ND	*	33	220
2,6-Dinitrotoluene		ND		53	220
2-Chloronaphthalene		ND		14	220
2-Chlorophenol		ND		11	220
2-Methylnaphthalene		94	J	2.6	220
2-Methylphenol		ND		6.6	220
2-Nitroaniline		ND		69	420
2-Nitrophenol		ND		9.8	220
3,3'-Dichlorobenzidine		ND		190	220
3-Nitroaniline		ND		50	420
4,6-Dinitro-2-methylphenol		ND		74	420
4-Bromophenyl phenyl ether		ND		69	220
4-Chloro-3-methylphenol		ND		8.9	220
4-Chloroaniline		ND		63	220
4-Chlorophenyl phenyl ether		ND		4.6	220
4-Methylphenol		ND		12	420
4-Nitroaniline		ND		24	420
4-Nitrophenol		ND		52	420
Acenaphthene		5.9	J	2.5	220
Acenaphthylene		ND		1.8	220
Acetophenone		ND		11	220
Anthracene		ND		5.5	220
Atrazine		ND		9.6	220
Benzaldehyde		ND	*	24	220
Benzo(a)anthracene		14	J	3.7	220
Benzo(a)pyrene		ND		5.2	220
Benzo(b)fluoranthene		16	J	4.2	220
Benzo(g,h,i)perylene		ND		2.6	220
Benzo(k)fluoranthene		ND		2.4	220
Bis(2-chloroethoxy)methane		ND		12	220
Bis(2-chloroethyl)ether		ND		19	220
Bis(2-ethylhexyl) phthalate		110	J	69	220
Butyl benzyl phthalate		ND		58	220
Caprolactam		ND		93	220
Carbazole		ND		2.5	220
Chrysene		14	J B	2.2	220
Di-n-butyl phthalate		ND		74	220
Di-n-octyl phthalate		ND		5.0	220
Dibenz(a,h)anthracene		ND		2.5	220

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID:	**SB07 SS (1-2) 040212**			
Lab Sample ID:	480-18049-9			Date Sampled: 04/02/2012 1215
Client Matrix:	Solid	% Moisture:	23.3	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8780.D
Dilution:	1.0			Initial Weight/Volume:	+30.65 g
Analysis Date:	04/09/2012 2304			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		2.2	220
Diethyl phthalate		ND		6.5	220
Dimethyl phthalate		ND		5.6	220
Fluoranthene		15	J	3.1	220
Fluorene		10	J	5.0	220
Hexachlorobenzene		ND		11	220
Hexachlorobutadiene		ND		11	220
Hexachlorocyclopentadiene		ND		65	220
Hexachloroethane		ND		17	220
Indeno(1,2,3-cd)pyrene		ND		6.0	220
Isophorone		ND		11	220
N-Nitrosodi-n-propylamine		ND		17	220
N-Nitrosodiphenylamine		ND	*	12	220
Naphthalene		63	J	3.6	220
Nitrobenzene		ND		9.6	220
Pentachlorophenol		ND		74	420
Phenanthrene		26	J	4.5	220
Phenol		ND		23	220
Pyrene		ND		1.4	220

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	110		39 - 146
2-Fluorobiphenyl	91		37 - 120
2-Fluorophenol	69		18 - 120
Nitrobenzene-d5	78		34 - 132
p-Terphenyl-d14	109		65 - 153
Phenol-d5	75		11 - 120

Analytical Data

Client: CHA Inc | Job Number: 480-18049-1

Client Sample ID: **SB07 SS (3-4) 040212**

Lab Sample ID:	480-18049-10			Date Sampled:	04/02/2012 1215
Client Matrix:	Solid	% Moisture:	23.1	Date Received:	04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8781.D
Dilution:	1.0			Initial Weight/Volume:	+30.40 g
Analysis Date:	04/09/2012 2328			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		87	J	13	220
bis (2-chloroisopropyl) ether		ND		23	220
2,4,5-Trichlorophenol		ND		47	220
2,4,6-Trichlorophenol		ND		14	220
2,4-Dichlorophenol		ND		11	220
2,4-Dimethylphenol		ND		58	220
2,4-Dinitrophenol		ND		76	420
2,4-Dinitrotoluene		ND	*	34	220
2,6-Dinitrotoluene		ND		53	220
2-Chloronaphthalene		ND		15	220
2-Chlorophenol		ND		11	220
2-Methylnaphthalene		430		2.6	220
2-Methylphenol		ND		6.7	220
2-Nitroaniline		ND		69	420
2-Nitrophenol		ND		9.9	220
3,3'-Dichlorobenzidine		ND		190	220
3-Nitroaniline		ND		50	420
4,6-Dinitro-2-methylphenol		ND		75	420
4-Bromophenyl phenyl ether		ND		69	220
4-Chloro-3-methylphenol		ND		8.9	220
4-Chloroaniline		ND		64	220
4-Chlorophenyl phenyl ether		ND		4.6	220
4-Methylphenol		ND		12	420
4-Nitroaniline		ND		24	420
4-Nitrophenol		ND		52	420
Acenaphthene		ND		2.5	220
Acenaphthylene		ND		1.8	220
Acetophenone		ND		11	220
Anthracene		15	J	5.5	220
Atrazine		ND		9.6	220
Benzaldehyde		ND	*	24	220
Benzo(a)anthracene		18	J	3.7	220
Benzo(a)pyrene		9.4	J	5.2	220
Benzo(b)fluoranthene		19	J	4.2	220
Benzo(g,h,i)perylene		ND		2.6	220
Benzo(k)fluoranthene		ND		2.4	220
Bis(2-chloroethoxy)methane		ND		12	220
Bis(2-chloroethyl)ether		ND		19	220
Bis(2-ethylhexyl) phthalate		120	J	70	220
Butyl benzyl phthalate		ND		58	220
Caprolactam		ND		94	220
Carbazole		ND		2.5	220
Chrysene		19	J B	2.2	220
Di-n-butyl phthalate		ND		75	220
Di-n-octyl phthalate		ND		5.1	220
Dibenz(a,h)anthracene		ND		2.5	220

Client Sample ID: **SB07 SS (3-4) 040212**

Lab Sample ID:	480-18049-10			Date Sampled: 04/02/2012 1215
Client Matrix:	Solid	% Moisture:	23.1	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8781.D
Dilution:	1.0			Initial Weight/Volume:	+30.40 g
Analysis Date:	04/09/2012 2328			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		42	J	2.3	220
Diethyl phthalate		ND		6.5	220
Dimethyl phthalate		ND		5.6	220
Fluoranthene		41	J	3.1	220
Fluorene		31	J	5.0	220
Hexachlorobenzene		ND		11	220
Hexachlorobutadiene		ND		11	220
Hexachlorocyclopentadiene		ND		65	220
Hexachloroethane		ND		17	220
Indeno(1,2,3-cd)pyrene		ND		6.0	220
Isophorone		ND		11	220
N-Nitrosodi-n-propylamine		ND		17	220
N-Nitrosodiphenylamine		ND	*	12	220
Naphthalene		230		3.6	220
Nitrobenzene		ND		9.6	220
Pentachlorophenol		ND		74	420
Phenanthrene		84	J	4.5	220
Phenol		ND		23	220
Pyrene		27	J	1.4	220

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	125		39 - 146
2-Fluorobiphenyl	97		37 - 120
2-Fluorophenol	80		18 - 120
Nitrobenzene-d5	88		34 - 132
p-Terphenyl-d14	118		65 - 153
Phenol-d5	87		11 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB10 SS (1-2) 040212**

Lab Sample ID:	480-18049-11			Date Sampled:	04/02/2012 1230
Client Matrix:	Solid	% Moisture:	12.6	Date Received:	04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8782.D
Dilution:	20			Initial Weight/Volume:	+30.13 g
Analysis Date:	04/09/2012 2353			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		240	3900
bis (2-chloroisopropyl) ether		ND		400	3900
2,4,5-Trichlorophenol		ND		840	3900
2,4,6-Trichlorophenol		ND		250	3900
2,4-Dichlorophenol		ND		200	3900
2,4-Dimethylphenol		ND		1000	3900
2,4-Dinitrophenol		ND		1300	7500
2,4-Dinitrotoluene		ND	*	600	3900
2,6-Dinitrotoluene		ND		940	3900
2-Chloronaphthalene		ND		260	3900
2-Chlorophenol		ND		200	3900
2-Methylnaphthalene		ND		47	3900
2-Methylphenol		ND		120	3900
2-Nitroaniline		ND		1200	7500
2-Nitrophenol		ND		180	3900
3,3'-Dichlorobenzidine		ND		3400	3900
3-Nitroaniline		ND		880	7500
4,6-Dinitro-2-methylphenol		ND		1300	7500
4-Bromophenyl phenyl ether		ND		1200	3900
4-Chloro-3-methylphenol		ND		160	3900
4-Chloroaniline		ND		1100	3900
4-Chlorophenyl phenyl ether		ND		82	3900
4-Methylphenol		ND		210	7500
4-Nitroaniline		ND		430	7500
4-Nitrophenol		ND		930	7500
Acenaphthene		ND		45	3900
Acenaphthylene		ND		31	3900
Acetophenone		ND		200	3900
Anthracene		ND		98	3900
Atrazine		ND		170	3900
Benzaldehyde		ND	*	420	3900
Benzo(a)anthracene		470	J	66	3900
Benzo(a)pyrene		320	J	93	3900
Benzo(b)fluoranthene		670	J	75	3900
Benzo(g,h,i)perylene		ND		46	3900
Benzo(k)fluoranthene		280	J B	42	3900
Bis(2-chloroethoxy)methane		ND		210	3900
Bis(2-chloroethyl)ether		ND		330	3900
Bis(2-ethylhexyl) phthalate		1900	J	1200	3900
Butyl benzyl phthalate		ND		1000	3900
Caprolactam		ND		1700	3900
Carbazole		ND		44	3900
Chrysene		490	J B	38	3900
Di-n-butyl phthalate		ND		1300	3900
Di-n-octyl phthalate		ND		90	3900
Dibenz(a,h)anthracene		ND		45	3900

Client Sample ID: **SB10 SS (1-2) 040212**

Lab Sample ID: 480-18049-11 Date Sampled: 04/02/2012 1230
Client Matrix: Solid % Moisture: 12.6 Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8782.D
Dilution:	20			Initial Weight/Volume:	+30.13 g
Analysis Date:	04/09/2012 2353			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		40	3900
Diethyl phthalate		ND		120	3900
Dimethyl phthalate		ND		100	3900
Fluoranthene		700	J	56	3900
Fluorene		ND		89	3900
Hexachlorobenzene		ND		190	3900
Hexachlorobutadiene		ND		200	3900
Hexachlorocyclopentadiene		ND		1200	3900
Hexachloroethane		ND		300	3900
Indeno(1,2,3-cd)pyrene		ND		110	3900
Isophorone		ND		190	3900
N-Nitrosodi-n-propylamine		ND		300	3900
N-Nitrosodiphenylamine		ND	*	210	3900
Naphthalene		ND		64	3900
Nitrobenzene		ND		170	3900
Pentachlorophenol		ND		1300	7500
Phenanthrene		380	J	81	3900
Phenol		ND		400	3900
Pyrene		560	J	25	3900

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	66		39 - 146
2-Fluorobiphenyl	77		37 - 120
2-Fluorophenol	66		18 - 120
Nitrobenzene-d5	61		34 - 132
p-Terphenyl-d14	101		65 - 153
Phenol-d5	63		11 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB10 SS (3-4) 040212**

Lab Sample ID: 480-18049-12

Client Matrix: Solid

% Moisture: 19.1

Date Sampled: 04/02/2012 1230

Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8783.D
Dilution:	1.0			Initial Weight/Volume:	+30.87 g
Analysis Date:	04/10/2012 0017			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		13	200
bis (2-chloroisopropyl) ether		ND		21	200
2,4,5-Trichlorophenol		ND		44	200
2,4,6-Trichlorophenol		ND		13	200
2,4-Dichlorophenol		ND		11	200
2,4-Dimethylphenol		ND		55	200
2,4-Dinitrophenol		ND		71	400
2,4-Dinitrotoluene		ND	*	31	200
2,6-Dinitrotoluene		ND		50	200
2-Chloronaphthalene		ND		14	200
2-Chlorophenol		ND		10	200
2-Methylnaphthalene		ND		2.5	200
2-Methylphenol		ND		6.2	200
2-Nitroaniline		ND		65	400
2-Nitrophenol		ND		9.3	200
3,3'-Dichlorobenzidine		ND		180	200
3-Nitroaniline		ND		47	400
4,6-Dinitro-2-methylphenol		ND		70	400
4-Bromophenyl phenyl ether		ND		65	200
4-Chloro-3-methylphenol		ND		8.3	200
4-Chloroaniline		ND		60	200
4-Chlorophenyl phenyl ether		ND		4.3	200
4-Methylphenol		ND		11	400
4-Nitroaniline		ND		23	400
4-Nitrophenol		ND		49	400
Acenaphthene		ND		2.4	200
Acenaphthylene		ND		1.7	200
Acetophenone		ND		10	200
Anthracene		ND		5.2	200
Atrazine		ND		9.0	200
Benzaldehyde		ND	*	22	200
Benzo(a)anthracene		ND		3.5	200
Benzo(a)pyrene		ND		4.9	200
Benzo(b)fluoranthene		ND		3.9	200
Benzo(g,h,i)perylene		ND		2.4	200
Benzo(k)fluoranthene		ND		2.2	200
Bis(2-chloroethoxy)methane		ND		11	200
Bis(2-chloroethyl)ether		ND		18	200
Bis(2-ethylhexyl) phthalate		ND		65	200
Butyl benzyl phthalate		ND		54	200
Caprolactam		ND		88	200
Carbazole		ND		2.3	200
Chrysene		ND		2.0	200
Di-n-butyl phthalate		ND		70	200
Di-n-octyl phthalate		ND		4.7	200
Dibenz(a,h)anthracene		ND		2.4	200

Client Sample ID: **SB10 SS (3-4) 040212**

Lab Sample ID:	480-18049-12			Date Sampled: 04/02/2012 1230
Client Matrix:	Solid	% Moisture:	19.1	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8783.D
Dilution:	1.0			Initial Weight/Volume:	+30.87 g
Analysis Date:	04/10/2012 0017			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		2.1	200
Diethyl phthalate		ND		6.1	200
Dimethyl phthalate		ND		5.3	200
Fluoranthene		ND		2.9	200
Fluorene		ND		4.7	200
Hexachlorobenzene		ND		10	200
Hexachlorobutadiene		ND		10	200
Hexachlorocyclopentadiene		ND		61	200
Hexachloroethane		ND		16	200
Indeno(1,2,3-cd)pyrene		ND		5.6	200
Isophorone		ND		10	200
N-Nitrosodi-n-propylamine		ND		16	200
N-Nitrosodiphenylamine		ND	*	11	200
Naphthalene		ND		3.4	200
Nitrobenzene		ND		9.0	200
Pentachlorophenol		ND		70	400
Phenanthrene		ND		4.3	200
Phenol		ND		21	200
Pyrene		42	J	1.3	200

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	123		39 - 146
2-Fluorobiphenyl	97		37 - 120
2-Fluorophenol	80		18 - 120
Nitrobenzene-d5	96		34 - 132
p-Terphenyl-d14	121		65 - 153
Phenol-d5	84		11 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB11 SS (2-3) 040212**

Lab Sample ID: 480-18049-13

Client Matrix: Solid

% Moisture: 10.7

Date Sampled: 04/02/2012 1245

Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8784.D
Dilution:	1.0			Initial Weight/Volume:	+30.66 g
Analysis Date:	04/10/2012 0041			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		12	190
bis (2-chloroisopropyl) ether		ND		19	190
2,4,5-Trichlorophenol		ND		40	190
2,4,6-Trichlorophenol		ND		12	190
2,4-Dichlorophenol		ND		9.7	190
2,4-Dimethylphenol		ND		50	190
2,4-Dinitrophenol		ND		65	360
2,4-Dinitrotoluene		ND	*	29	190
2,6-Dinitrotoluene		ND		45	190
2-Chloronaphthalene		ND		12	190
2-Chlorophenol		ND		9.4	190
2-Methylnaphthalene		ND		2.2	190
2-Methylphenol		ND		5.7	190
2-Nitroaniline		ND		59	360
2-Nitrophenol		ND		8.5	190
3,3'-Dichlorobenzidine		ND		160	190
3-Nitroaniline		ND		43	360
4,6-Dinitro-2-methylphenol		ND		64	360
4-Bromophenyl phenyl ether		ND		59	190
4-Chloro-3-methylphenol		ND		7.6	190
4-Chloroaniline		ND		54	190
4-Chlorophenyl phenyl ether		ND		3.9	190
4-Methylphenol		ND		10	360
4-Nitroaniline		ND		21	360
4-Nitrophenol		ND		45	360
Acenaphthene		ND		2.2	190
Acenaphthylene		ND		1.5	190
Acetophenone		ND		9.5	190
Anthracene		ND		4.7	190
Atrazine		ND		8.2	190
Benzaldehyde		ND	*	20	190
Benzo(a)anthracene		12	J	3.2	190
Benzo(a)pyrene		12	J	4.5	190
Benzo(b)fluoranthene		19	J	3.6	190
Benzo(g,h,i)perylene		ND		2.2	190
Benzo(k)fluoranthene		ND		2.0	190
Bis(2-chloroethoxy)methane		ND		10	190
Bis(2-chloroethyl)ether		ND		16	190
Bis(2-ethylhexyl) phthalate		98	J	60	190
Butyl benzyl phthalate		ND		50	190
Caprolactam		ND		80	190
Carbazole		ND		2.1	190
Chrysene		18	J B	1.9	190
Di-n-butyl phthalate		ND		64	190
Di-n-octyl phthalate		ND		4.3	190
Dibenz(a,h)anthracene		ND		2.2	190

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB11 SS (2-3) 040212**

Lab Sample ID:	480-18049-13			Date Sampled: 04/02/2012 1245
Client Matrix:	Solid	% Moisture:	10.7	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8784.D
Dilution:	1.0			Initial Weight/Volume:	+30.66 g
Analysis Date:	04/10/2012 0041			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		1.9	190
Diethyl phthalate		ND		5.6	190
Dimethyl phthalate		ND		4.8	190
Fluoranthene		21	J	2.7	190
Fluorene		ND		4.3	190
Hexachlorobenzene		ND		9.2	190
Hexachlorobutadiene		ND		9.5	190
Hexachlorocyclopentadiene		ND		56	190
Hexachloroethane		ND		14	190
Indeno(1,2,3-cd)pyrene		ND		5.1	190
Isophorone		ND		9.2	190
N-Nitrosodi-n-propylamine		ND		15	190
N-Nitrosodiphenylamine		ND	*	10	190
Naphthalene		ND		3.1	190
Nitrobenzene		ND		8.2	190
Pentachlorophenol		ND		63	360
Phenanthrene		ND		3.9	190
Phenol		ND		19	190
Pyrene		15	J	1.2	190

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	136		39 - 146
2-Fluorobiphenyl	104		37 - 120
2-Fluorophenol	95		18 - 120
Nitrobenzene-d5	97		34 - 132
p-Terphenyl-d14	125		65 - 153
Phenol-d5	96		11 - 120

Client Sample ID: **SB14 SS (1-2)040212**

Lab Sample ID: 480-18049-14 Date Sampled: 04/02/2012 1300
Client Matrix: Solid % Moisture: 12.9 Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8816.D
Dilution:	1.0			Initial Weight/Volume:	+30.66 g
Analysis Date:	04/10/2012 1408			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		12	190
bis (2-chloroisopropyl) ether		ND		20	190
2,4,5-Trichlorophenol		ND		41	190
2,4,6-Trichlorophenol		ND		13	190
2,4-Dichlorophenol		ND		9.9	190
2,4-Dimethylphenol		ND		51	190
2,4-Dinitrophenol		ND		66	370
2,4-Dinitrotoluene		ND	*	29	190
2,6-Dinitrotoluene		ND		46	190
2-Chloronaphthalene		ND		13	190
2-Chlorophenol		ND		9.7	190
2-Methylnaphthalene		ND		2.3	190
2-Methylphenol		ND		5.8	190
2-Nitroaniline		ND		61	370
2-Nitrophenol		ND		8.7	190
3,3'-Dichlorobenzidine		ND		170	190
3-Nitroaniline		ND		44	370
4,6-Dinitro-2-methylphenol		ND		65	370
4-Bromophenyl phenyl ether		ND		60	190
4-Chloro-3-methylphenol		ND		7.8	190
4-Chloroaniline		ND		56	190
4-Chlorophenyl phenyl ether		ND		4.0	190
4-Methylphenol		47	J	11	370
4-Nitroaniline		ND		21	370
4-Nitrophenol		ND		46	370
Acenaphthene		ND		2.2	190
Acenaphthylene		ND		1.6	190
Acetophenone		ND		9.7	190
Anthracene		ND		4.9	190
Atrazine		ND		8.4	190
Benzaldehyde		ND	*	21	190
Benzo(a)anthracene		29	J	3.3	190
Benzo(a)pyrene		27	J	4.6	190
Benzo(b)fluoranthene		24	J	3.7	190
Benzo(g,h,i)perylene		17	J	2.3	190
Benzo(k)fluoranthene		35	J B	2.1	190
Bis(2-chloroethoxy)methane		ND		10	190
Bis(2-chloroethyl)ether		ND		16	190
Bis(2-ethylhexyl) phthalate		100	J	61	190
Butyl benzyl phthalate		ND		51	190
Caprolactam		ND		82	190
Carbazole		ND		2.2	190
Chrysene		34	J B	1.9	190
Di-n-butyl phthalate		ND		66	190
Di-n-octyl phthalate		ND		4.4	190
Dibenz(a,h)anthracene		ND		2.2	190

Client Sample ID: **SB14 SS (1-2)040212**

Lab Sample ID:	480-18049-14			Date Sampled:	04/02/2012 1300
Client Matrix:	Solid	% Moisture:	12.9	Date Received:	04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8816.D
Dilution:	1.0			Initial Weight/Volume:	+30.66 g
Analysis Date:	04/10/2012 1408			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		2.0	190
Diethyl phthalate		ND		5.7	190
Dimethyl phthalate		ND		4.9	190
Fluoranthene		48	J	2.7	190
Fluorene		ND		4.4	190
Hexachlorobenzene		ND		9.4	190
Hexachlorobutadiene		ND		9.7	190
Hexachlorocyclopentadiene		ND		57	190
Hexachloroethane		ND		15	190
Indeno(1,2,3-cd)pyrene		16	J	5.2	190
Isophorone		ND		9.5	190
N-Nitrosodi-n-propylamine		ND		15	190
N-Nitrosodiphenylamine		ND	*	10	190
Naphthalene		ND		3.2	190
Nitrobenzene		ND		8.4	190
Pentachlorophenol		ND		65	370
Phenanthrene		16	J	4.0	190
Phenol		ND		20	190
Pyrene		37	J	1.2	190

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	69		39 - 146
2-Fluorobiphenyl	58		37 - 120
2-Fluorophenol	42		18 - 120
Nitrobenzene-d5	49		34 - 132
p-Terphenyl-d14	71		65 - 153
Phenol-d5	50		11 - 120

Client Sample ID: **SB14 SS (2-3) 040212**

Lab Sample ID:	480-18049-15			Date Sampled: 04/02/2012 1300
Client Matrix:	Solid	% Moisture:	13.5	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8786.D
Dilution:	1.0			Initial Weight/Volume:	+30.51 g
Analysis Date:	04/10/2012 0129			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		12	190
bis (2-chloroisopropyl) ether		ND		20	190
2,4,5-Trichlorophenol		ND		42	190
2,4,6-Trichlorophenol		ND		13	190
2,4-Dichlorophenol		ND		10	190
2,4-Dimethylphenol		ND		52	190
2,4-Dinitrophenol		ND		67	380
2,4-Dinitrotoluene		ND	*	30	190
2,6-Dinitrotoluene		ND		47	190
2-Chloronaphthalene		ND		13	190
2-Chlorophenol		ND		9.8	190
2-Methylnaphthalene		ND		2.3	190
2-Methylphenol		ND		5.9	190
2-Nitroaniline		ND		62	380
2-Nitrophenol		ND		8.8	190
3,3'-Dichlorobenzidine		ND		170	190
3-Nitroaniline		ND		44	380
4,6-Dinitro-2-methylphenol		ND		66	380
4-Bromophenyl phenyl ether		ND		61	190
4-Chloro-3-methylphenol		ND		7.9	190
4-Chloroaniline		ND		56	190
4-Chlorophenyl phenyl ether		ND		4.1	190
4-Methylphenol		ND		11	380
4-Nitroaniline		ND		21	380
4-Nitrophenol		ND		47	380
Acenaphthene		ND		2.3	190
Acenaphthylene		ND		1.6	190
Acetophenone		ND		9.8	190
Anthracene		ND		4.9	190
Atrazine		ND		8.5	190
Benzaldehyde		ND	*	21	190
Benzo(a)anthracene		15	J	3.3	190
Benzo(a)pyrene		11	J	4.6	190
Benzo(b)fluoranthene		17	J	3.7	190
Benzo(g,h,i)perylene		ND		2.3	190
Benzo(k)fluoranthene		11	J B	2.1	190
Bis(2-chloroethoxy)methane		ND		10	190
Bis(2-chloroethyl)ether		ND		17	190
Bis(2-ethylhexyl) phthalate		ND		62	190
Butyl benzyl phthalate		ND		52	190
Caprolactam		ND		83	190
Carbazole		ND		2.2	190
Chrysene		17	J B	1.9	190
Di-n-butyl phthalate		ND		66	190
Di-n-octyl phthalate		ND		4.5	190
Dibenz(a,h)anthracene		ND		2.3	190

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB14 SS (2-3) 040212**

Lab Sample ID:	480-18049-15			Date Sampled: 04/02/2012 1300
Client Matrix:	Solid	% Moisture:	13.5	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8786.D
Dilution:	1.0			Initial Weight/Volume:	+30.51 g
Analysis Date:	04/10/2012 0129			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		2.0	190
Diethyl phthalate		ND		5.8	190
Dimethyl phthalate		ND		5.0	190
Fluoranthene		17	J	2.8	190
Fluorene		ND		4.4	190
Hexachlorobenzene		ND		9.5	190
Hexachlorobutadiene		ND		9.8	190
Hexachlorocyclopentadiene		ND		58	190
Hexachloroethane		ND		15	190
Indeno(1,2,3-cd)pyrene		ND		5.3	190
Isophorone		ND		9.6	190
N-Nitrosodi-n-propylamine		ND		15	190
N-Nitrosodiphenylamine		ND	*	10	190
Naphthalene		ND		3.2	190
Nitrobenzene		ND		8.5	190
Pentachlorophenol		ND		66	380
Phenanthrene		8.1	J	4.0	190
Phenol		ND		20	190
Pyrene		14	J	1.2	190

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	128		39 - 146
2-Fluorobiphenyl	102		37 - 120
2-Fluorophenol	90		18 - 120
Nitrobenzene-d5	93		34 - 132
p-Terphenyl-d14	119		65 - 153
Phenol-d5	91		11 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB13 SS (1-2) 040212**

Lab Sample ID: 480-18049-16

Date Sampled: 04/02/2012 1315

Client Matrix: Solid

% Moisture: 10.3

Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8809.D
Dilution:	10			Initial Weight/Volume:	+30.26 g
Analysis Date:	04/10/2012 1120			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		120	1900
bis (2-chloroisopropyl) ether		ND		190	1900
2,4,5-Trichlorophenol		ND		410	1900
2,4,6-Trichlorophenol		ND		120	1900
2,4-Dichlorophenol		ND		98	1900
2,4-Dimethylphenol		ND		500	1900
2,4-Dinitrophenol		ND		650	3600
2,4-Dinitrotoluene		ND	*	290	1900
2,6-Dinitrotoluene		ND		460	1900
2-Chloronaphthalene		ND		130	1900
2-Chlorophenol		ND		95	1900
2-Methylnaphthalene		ND		23	1900
2-Methylphenol		ND		57	1900
2-Nitroaniline		ND		600	3600
2-Nitrophenol		ND		85	1900
3,3'-Dichlorobenzidine		ND		1600	1900
3-Nitroaniline		ND		430	3600
4,6-Dinitro-2-methylphenol		ND		640	3600
4-Bromophenyl phenyl ether		ND		590	1900
4-Chloro-3-methylphenol		ND		77	1900
4-Chloroaniline		ND		550	1900
4-Chlorophenyl phenyl ether		ND		40	1900
4-Methylphenol		ND		100	3600
4-Nitroaniline		ND		210	3600
4-Nitrophenol		ND		450	3600
Acenaphthene		ND		22	1900
Acenaphthylene		ND		15	1900
Acetophenone		ND		96	1900
Anthracene		ND		48	1900
Atrazine		ND		83	1900
Benzaldehyde		ND	*	200	1900
Benzo(a)anthracene		76	J	32	1900
Benzo(a)pyrene		ND		45	1900
Benzo(b)fluoranthene		ND		36	1900
Benzo(g,h,i)perylene		ND		22	1900
Benzo(k)fluoranthene		ND		21	1900
Bis(2-chloroethoxy)methane		ND		100	1900
Bis(2-chloroethyl)ether		ND		160	1900
Bis(2-ethylhexyl) phthalate		ND		600	1900
Butyl benzyl phthalate		ND		500	1900
Caprolactam		ND		810	1900
Carbazole		ND		22	1900
Chrysene		52	J B	19	1900
Di-n-butyl phthalate		ND		640	1900
Di-n-octyl phthalate		ND		44	1900
Dibenz(a,h)anthracene		ND		22	1900

Client: CHA Inc | Job Number: 480-18049-1

Client Sample ID: **SB13 SS (1-2) 040212**

Lab Sample ID:	480-18049-16			Date Sampled: 04/02/2012 1315
Client Matrix:	Solid	% Moisture:	10.3	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8809.D
Dilution:	10			Initial Weight/Volume:	+30.26 g
Analysis Date:	04/10/2012 1120			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		19	1900
Diethyl phthalate		ND		56	1900
Dimethyl phthalate		ND		49	1900
Fluoranthene		ND		27	1900
Fluorene		ND		43	1900
Hexachlorobenzene		ND		93	1900
Hexachlorobutadiene		ND		95	1900
Hexachlorocyclopentadiene		ND		560	1900
Hexachloroethane		ND		140	1900
Indeno(1,2,3-cd)pyrene		ND		52	1900
Isophorone		ND		93	1900
N-Nitrosodi-n-propylamine		ND		150	1900
N-Nitrosodiphenylamine		ND	*	100	1900
Naphthalene		ND		31	1900
Nitrobenzene		ND		83	1900
Pentachlorophenol		ND		640	3600
Phenanthrene		ND		39	1900
Phenol		ND		200	1900
Pyrene		ND		12	1900

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	89		39 - 146
2-Fluorobiphenyl	91		37 - 120
2-Fluorophenol	77		18 - 120
Nitrobenzene-d5	74		34 - 132
p-Terphenyl-d14	122		65 - 153
Phenol-d5	79		11 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB13 SS (2-3) 040212**

Lab Sample ID:	480-18049-17			Date Sampled: 04/02/2012 1315
Client Matrix:	Solid	% Moisture:	13.6	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8810.D
Dilution:	10			Initial Weight/Volume:	+30.43 g
Analysis Date:	04/10/2012 1144			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		120	1900
bis (2-chloroisopropyl) ether		ND		200	1900
2,4,5-Trichlorophenol		ND		420	1900
2,4,6-Trichlorophenol		ND		130	1900
2,4-Dichlorophenol		ND		100	1900
2,4-Dimethylphenol		ND		520	1900
2,4-Dinitrophenol		ND		670	3800
2,4-Dinitrotoluene		ND	*	300	1900
2,6-Dinitrotoluene		ND		470	1900
2-Chloronaphthalene		ND		130	1900
2-Chlorophenol		ND		98	1900
2-Methylnaphthalene		ND		23	1900
2-Methylphenol		ND		59	1900
2-Nitroaniline		ND		620	3800
2-Nitrophenol		ND		88	1900
3,3'-Dichlorobenzidine		ND		1700	1900
3-Nitroaniline		ND		440	3800
4,6-Dinitro-2-methylphenol		ND		660	3800
4-Bromophenyl phenyl ether		ND		610	1900
4-Chloro-3-methylphenol		ND		79	1900
4-Chloroaniline		ND		570	1900
4-Chlorophenyl phenyl ether		ND		41	1900
4-Methylphenol		ND		110	3800
4-Nitroaniline		ND		220	3800
4-Nitrophenol		ND		470	3800
Acenaphthene		ND		23	1900
Acenaphthylene		ND		16	1900
Acetophenone		ND		99	1900
Anthracene		ND		49	1900
Atrazine		ND		86	1900
Benzaldehyde		ND	*	210	1900
Benzo(a)anthracene		140	J	33	1900
Benzo(a)pyrene		69	J	46	1900
Benzo(b)fluoranthene		ND		37	1900
Benzo(g,h,i)perylene		ND		23	1900
Benzo(k)fluoranthene		ND		21	1900
Bis(2-chloroethoxy)methane		ND		100	1900
Bis(2-chloroethyl)ether		ND		170	1900
Bis(2-ethylhexyl) phthalate		ND		620	1900
Butyl benzyl phthalate		ND		520	1900
Caprolactam		ND		830	1900
Carbazole		ND		22	1900
Chrysene		190	J B	19	1900
Di-n-butyl phthalate		ND		670	1900
Di-n-octyl phthalate		ND		45	1900
Dibenz(a,h)anthracene		ND		23	1900

Client Sample ID: **SB13 SS (2-3) 040212**

Lab Sample ID:	480-18049-17			Date Sampled:	04/02/2012 1315
Client Matrix:	Solid	% Moisture:	13.6	Date Received:	04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8810.D
Dilution:	10			Initial Weight/Volume:	+30.43 g
Analysis Date:	04/10/2012 1144			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		20	1900
Diethyl phthalate		ND		58	1900
Dimethyl phthalate		ND		50	1900
Fluoranthene		ND		28	1900
Fluorene		ND		44	1900
Hexachlorobenzene		ND		96	1900
Hexachlorobutadiene		ND		99	1900
Hexachlorocyclopentadiene		ND		580	1900
Hexachloroethane		ND		150	1900
Indeno(1,2,3-cd)pyrene		ND		53	1900
Isophorone		ND		96	1900
N-Nitrosodi-n-propylamine		ND		150	1900
N-Nitrosodiphenylamine		ND	*	110	1900
Naphthalene		ND		32	1900
Nitrobenzene		ND		85	1900
Pentachlorophenol		ND		660	3800
Phenanthrene		270	J	40	1900
Phenol		ND		200	1900
Pyrene		260	J	12	1900

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	74		39 - 146
2-Fluorobiphenyl	88		37 - 120
2-Fluorophenol	83		18 - 120
Nitrobenzene-d5	70		34 - 132
p-Terphenyl-d14	121		65 - 153
Phenol-d5	79		11 - 120

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB08 SS (1-2) 040212**

Lab Sample ID: 480-18049-18

Client Matrix: Solid

% Moisture: 26.2

Date Sampled: 04/02/2012 1330

Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8811.D
Dilution:	20			Initial Weight/Volume:	+30.14 g
Analysis Date:	04/10/2012 1208			Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		2800	46000
bis (2-chloroisopropyl) ether		ND		4800	46000
2,4,5-Trichlorophenol		ND		9900	46000
2,4,6-Trichlorophenol		ND		3000	46000
2,4-Dichlorophenol		ND		2400	46000
2,4-Dimethylphenol		ND		12000	46000
2,4-Dinitrophenol		ND		16000	89000
2,4-Dinitrotoluene		ND	*	7000	46000
2,6-Dinitrotoluene		ND		11000	46000
2-Chloronaphthalene		ND		3100	46000
2-Chlorophenol		ND		2300	46000
2-Methylnaphthalene		ND		550	46000
2-Methylphenol		ND		1400	46000
2-Nitroaniline		ND		15000	89000
2-Nitrophenol		ND		2100	46000
3,3'-Dichlorobenzidine		ND		40000	46000
3-Nitroaniline		ND		10000	89000
4,6-Dinitro-2-methylphenol		ND		16000	89000
4-Bromophenyl phenyl ether		ND		14000	46000
4-Chloro-3-methylphenol		ND		1900	46000
4-Chloroaniline		ND		13000	46000
4-Chlorophenyl phenyl ether		ND		970	46000
4-Methylphenol		ND		2500	89000
4-Nitroaniline		ND		5100	89000
4-Nitrophenol		ND		11000	89000
Acenaphthene		ND		540	46000
Acenaphthylene		ND		370	46000
Acetophenone		ND		2300	46000
Anthracene		ND		1200	46000
Atrazine		ND		2000	46000
Benzaldehyde		ND	*	5000	46000
Benzo(a)anthracene		3200	J	790	46000
Benzo(a)pyrene		2200	J	1100	46000
Benzo(b)fluoranthene		ND		880	46000
Benzo(g,h,i)perylene		ND		550	46000
Benzo(k)fluoranthene		ND		500	46000
Bis(2-chloroethoxy)methane		ND		2500	46000
Bis(2-chloroethyl)ether		ND		3900	46000
Bis(2-ethylhexyl) phthalate		ND		15000	46000
Butyl benzyl phthalate		ND		12000	46000
Caprolactam		ND		20000	46000
Carbazole		ND		530	46000
Chrysene		3700	J B	460	46000
Di-n-butyl phthalate		ND		16000	46000
Di-n-octyl phthalate		ND		1100	46000
Dibenz(a,h)anthracene		ND		540	46000

Client Sample ID:	**SB08 SS (1-2) 040212**			
Lab Sample ID:	480-18049-18			Date Sampled: 04/02/2012 1330
Client Matrix:	Solid	% Moisture:	26.2	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8811.D
Dilution:	20			Initial Weight/Volume:	+30.14 g
Analysis Date:	04/10/2012 1208			Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		470	46000
Diethyl phthalate		ND		1400	46000
Dimethyl phthalate		ND		1200	46000
Fluoranthene		4400	J	660	46000
Fluorene		ND		1000	46000
Hexachlorobenzene		ND		2300	46000
Hexachlorobutadiene		ND		2300	46000
Hexachlorocyclopentadiene		ND		14000	46000
Hexachloroethane		ND		3500	46000
Indeno(1,2,3-cd)pyrene		ND		1300	46000
Isophorone		ND		2300	46000
N-Nitrosodi-n-propylamine		ND		3600	46000
N-Nitrosodiphenylamine		ND	*	2500	46000
Naphthalene		ND		760	46000
Nitrobenzene		ND		2000	46000
Pentachlorophenol		ND		16000	89000
Phenanthrene		ND		960	46000
Phenol		ND		4800	46000
Pyrene		4600	J	290	46000

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	0	X	39 - 146
2-Fluorobiphenyl	64		37 - 120
2-Fluorophenol	0	X	18 - 120
Nitrobenzene-d5	0	X	34 - 132
p-Terphenyl-d14	0	X	65 - 153
Phenol-d5	0	X	11 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB08 SS (2-3) 040212**

Lab Sample ID:	480-18049-19			Date Sampled:	04/02/2012 1330
Client Matrix:	Solid	% Moisture:	16.8	Date Received:	04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8812.D
Dilution:	5.0			Initial Weight/Volume:	+30.46 g
Analysis Date:	04/10/2012 1231			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		62	1000
bis (2-chloroisopropyl) ether		ND		100	1000
2,4,5-Trichlorophenol		ND		220	1000
2,4,6-Trichlorophenol		ND		66	1000
2,4-Dichlorophenol		ND		52	1000
2,4-Dimethylphenol		ND		270	1000
2,4-Dinitrophenol		ND		350	2000
2,4-Dinitrotoluene		ND	*	150	1000
2,6-Dinitrotoluene		ND		240	1000
2-Chloronaphthalene		ND		67	1000
2-Chlorophenol		ND		51	1000
2-Methylnaphthalene		ND		12	1000
2-Methylphenol		ND		31	1000
2-Nitroaniline		ND		320	2000
2-Nitrophenol		ND		46	1000
3,3'-Dichlorobenzidine		ND		880	1000
3-Nitroaniline		ND		230	2000
4,6-Dinitro-2-methylphenol		ND		340	2000
4-Bromophenyl phenyl ether		ND		320	1000
4-Chloro-3-methylphenol		ND		41	1000
4-Chloroaniline		ND		290	1000
4-Chlorophenyl phenyl ether		ND		21	1000
4-Methylphenol		ND		56	2000
4-Nitroaniline		ND		110	2000
4-Nitrophenol		ND		240	2000
Acenaphthene		ND		12	1000
Acenaphthylene		ND		8.2	1000
Acetophenone		ND		51	1000
Anthracene		ND		26	1000
Atrazine		ND		44	1000
Benzaldehyde		ND	*	110	1000
Benzo(a)anthracene		68	J	17	1000
Benzo(a)pyrene		110	J	24	1000
Benzo(b)fluoranthene		110	J	19	1000
Benzo(g,h,i)perylene		ND		12	1000
Benzo(k)fluoranthene		48	J B	11	1000
Bis(2-chloroethoxy)methane		ND		54	1000
Bis(2-chloroethyl)ether		ND		86	1000
Bis(2-ethylhexyl) phthalate		ND		320	1000
Butyl benzyl phthalate		ND		270	1000
Caprolactam		ND		430	1000
Carbazole		ND		12	1000
Chrysene		86	J B	10	1000
Di-n-butyl phthalate		ND		350	1000
Di-n-octyl phthalate		ND		23	1000
Dibenz(a,h)anthracene		ND		12	1000

Client Sample ID: **SB08 SS (2-3) 040212**

Lab Sample ID:	480-18049-19			Date Sampled: 04/02/2012 1330
Client Matrix:	Solid	% Moisture:	16.8	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8812.D
Dilution:	5.0			Initial Weight/Volume:	+30.46 g
Analysis Date:	04/10/2012 1231			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		10	1000
Diethyl phthalate		ND		30	1000
Dimethyl phthalate		ND		26	1000
Fluoranthene		63	J	14	1000
Fluorene		ND		23	1000
Hexachlorobenzene		ND		50	1000
Hexachlorobutadiene		ND		51	1000
Hexachlorocyclopentadiene		ND		300	1000
Hexachloroethane		ND		77	1000
Indeno(1,2,3-cd)pyrene		75	J	28	1000
Isophorone		ND		50	1000
N-Nitrosodi-n-propylamine		ND		79	1000
N-Nitrosodiphenylamine		ND	*	55	1000
Naphthalene		ND		17	1000
Nitrobenzene		ND		44	1000
Pentachlorophenol		ND		340	2000
Phenanthrene		ND		21	1000
Phenol		ND		110	1000
Pyrene		84	J	6.5	1000

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	88		39 - 146
2-Fluorobiphenyl	82		37 - 120
2-Fluorophenol	63		18 - 120
Nitrobenzene-d5	66		34 - 132
p-Terphenyl-d14	102		65 - 153
Phenol-d5	70		11 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB12 SS (0-1) 040212**

Lab Sample ID:	480-18049-20			Date Sampled:	04/02/2012 1400
Client Matrix:	Solid	% Moisture:	12.0	Date Received:	04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8813.D
Dilution:	5.0			Initial Weight/Volume:	+30.29 g
Analysis Date:	04/10/2012 1256			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		59	960
bis (2-chloroisopropyl) ether		ND		99	960
2,4,5-Trichlorophenol		ND		210	960
2,4,6-Trichlorophenol		ND		63	960
2,4-Dichlorophenol		ND		50	960
2,4-Dimethylphenol		ND		260	960
2,4-Dinitrophenol		ND		330	1900
2,4-Dinitrotoluene		ND	*	150	960
2,6-Dinitrotoluene		ND		230	960
2-Chloronaphthalene		ND		64	960
2-Chlorophenol		ND		48	960
2-Methylnaphthalene		ND		12	960
2-Methylphenol		ND		29	960
2-Nitroaniline		ND		300	1900
2-Nitrophenol		ND		43	960
3,3'-Dichlorobenzidine		ND		830	960
3-Nitroaniline		ND		220	1900
4,6-Dinitro-2-methylphenol		ND		330	1900
4-Bromophenyl phenyl ether		ND		300	960
4-Chloro-3-methylphenol		ND		39	960
4-Chloroaniline		ND		280	960
4-Chlorophenyl phenyl ether		ND		20	960
4-Methylphenol		ND		53	1900
4-Nitroaniline		ND		110	1900
4-Nitrophenol		ND		230	1900
Acenaphthene		ND		11	960
Acenaphthylene		ND		7.8	960
Acetophenone		ND		49	960
Anthracene		ND		24	960
Atrazine		ND		42	960
Benzaldehyde		ND	*	100	960
Benzo(a)anthracene		63	J	16	960
Benzo(a)pyrene		ND		23	960
Benzo(b)fluoranthene		ND		18	960
Benzo(g,h,i)perylene		ND		11	960
Benzo(k)fluoranthene		ND		10	960
Bis(2-chloroethoxy)methane		ND		52	960
Bis(2-chloroethyl)ether		ND		82	960
Bis(2-ethylhexyl) phthalate		ND		310	960
Butyl benzyl phthalate		ND		250	960
Caprolactam		ND		410	960
Carbazole		ND		11	960
Chrysene		72	J B	9.5	960
Di-n-butyl phthalate		ND		330	960
Di-n-octyl phthalate		ND		22	960
Dibenz(a,h)anthracene		ND		11	960

Client Sample ID: **SB12 SS (0-1) 040212**

Lab Sample ID:	480-18049-20			Date Sampled: 04/02/2012 1400
Client Matrix:	Solid	% Moisture:	12.0	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8813.D
Dilution:	5.0			Initial Weight/Volume:	+30.29 g
Analysis Date:	04/10/2012 1256			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		9.9	960
Diethyl phthalate		ND		29	960
Dimethyl phthalate		ND		25	960
Fluoranthene		69	J	14	960
Fluorene		ND		22	960
Hexachlorobenzene		ND		47	960
Hexachlorobutadiene		ND		49	960
Hexachlorocyclopentadiene		ND		290	960
Hexachloroethane		ND		73	960
Indeno(1,2,3-cd)pyrene		ND		26	960
Isophorone		ND		47	960
N-Nitrosodi-n-propylamine		ND		75	960
N-Nitrosodiphenylamine		ND	*	52	960
Naphthalene		ND		16	960
Nitrobenzene		ND		42	960
Pentachlorophenol		ND		330	1900
Phenanthrene		ND		20	960
Phenol		ND		100	960
Pyrene		ND		6.1	960

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	73		39 - 146
2-Fluorobiphenyl	82		37 - 120
2-Fluorophenol	69		18 - 120
Nitrobenzene-d5	67		34 - 132
p-Terphenyl-d14	98		65 - 153
Phenol-d5	70		11 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB12 SS (2-3)040212**

Lab Sample ID:	480-18049-21			Date Sampled:	04/02/2012 1400
Client Matrix:	Solid	% Moisture:	7.9	Date Received:	04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8814.D
Dilution:	20			Initial Weight/Volume:	+30.19 g
Analysis Date:	04/10/2012 1320			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		230	3700
bis (2-chloroisopropyl) ether		ND		380	3700
2,4,5-Trichlorophenol		ND		790	3700
2,4,6-Trichlorophenol		ND		240	3700
2,4-Dichlorophenol		ND		190	3700
2,4-Dimethylphenol		ND		980	3700
2,4-Dinitrophenol		ND		1300	7100
2,4-Dinitrotoluene		ND	*	560	3700
2,6-Dinitrotoluene		ND		890	3700
2-Chloronaphthalene		ND		240	3700
2-Chlorophenol		ND		190	3700
2-Methylnaphthalene		860	J	44	3700
2-Methylphenol		ND		110	3700
2-Nitroaniline		ND		1200	7100
2-Nitrophenol		ND		170	3700
3,3'-Dichlorobenzidine		ND		3200	3700
3-Nitroaniline		ND		840	7100
4,6-Dinitro-2-methylphenol		ND		1300	7100
4-Bromophenyl phenyl ether		ND		1200	3700
4-Chloro-3-methylphenol		ND		150	3700
4-Chloroaniline		ND		1100	3700
4-Chlorophenyl phenyl ether		ND		78	3700
4-Methylphenol		ND		200	7100
4-Nitroaniline		ND		410	7100
4-Nitrophenol		ND		880	7100
Acenaphthene		200	J	43	3700
Acenaphthylene		ND		30	3700
Acetophenone		2800	J	190	3700
Anthracene		420	J	93	3700
Atrazine		ND		160	3700
Benzaldehyde		ND	*	400	3700
Benzo(a)anthracene		930	J	63	3700
Benzo(a)pyrene		590	J	88	3700
Benzo(b)fluoranthene		710	J	71	3700
Benzo(g,h,i)perylene		190	J	44	3700
Benzo(k)fluoranthene		440	J B	40	3700
Bis(2-chloroethoxy)methane		ND		200	3700
Bis(2-chloroethyl)ether		ND		310	3700
Bis(2-ethylhexyl) phthalate		ND		1200	3700
Butyl benzyl phthalate		ND		980	3700
Caprolactam		ND		1600	3700
Carbazole		ND		42	3700
Chrysene		750	J B	36	3700
Di-n-butyl phthalate		ND		1300	3700
Di-n-octyl phthalate		ND		85	3700
Dibenz(a,h)anthracene		2200	J	43	3700

Client Sample ID: **SB12 SS (2-3)040212**

Lab Sample ID:	480-18049-21			Date Sampled: 04/02/2012 1400
Client Matrix:	Solid	% Moisture:	7.9	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8814.D
Dilution:	20			Initial Weight/Volume:	+30.19 g
Analysis Date:	04/10/2012 1320			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		38	3700
Diethyl phthalate		ND		110	3700
Dimethyl phthalate		ND		95	3700
Fluoranthene		1600	J	53	3700
Fluorene		ND		84	3700
Hexachlorobenzene		ND		180	3700
Hexachlorobutadiene		ND		190	3700
Hexachlorocyclopentadiene		ND		1100	3700
Hexachloroethane		ND		280	3700
Indeno(1,2,3-cd)pyrene		300	J	100	3700
Isophorone		ND		180	3700
N-Nitrosodi-n-propylamine		ND		290	3700
N-Nitrosodiphenylamine		ND	*	200	3700
Naphthalene		5600		61	3700
Nitrobenzene		ND		160	3700
Pentachlorophenol		ND		1200	7100
Phenanthrene		1200	J	76	3700
Phenol		ND		380	3700
Pyrene		1200	J	24	3700

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	70		39 - 146
2-Fluorobiphenyl	81		37 - 120
2-Fluorophenol	64		18 - 120
Nitrobenzene-d5	62		34 - 132
p-Terphenyl-d14	95		65 - 153
Phenol-d5	68		11 - 120

Client: CHA Inc
Job Number: 480-18049-1

Client Sample ID: **SB09 SS (1-2) 040212**

Lab Sample ID: 480-18049-22
Client Matrix: Solid
% Moisture: 15.2
Date Sampled: 04/02/2012 1415
Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270C
Prep Method: 3550B
Dilution: 20
Analysis Date: 04/10/2012 1344
Prep Date: 04/05/2012 0828
Analysis Batch: 480-58886
Prep Batch: 480-58238
Instrument ID: HP5973V
Lab File ID: V8815.D
Initial Weight/Volume: +30.24 g
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		330	J	250	4000
bis (2-chloroisopropyl) ether		ND		410	4000
2,4,5-Trichlorophenol		ND		860	4000
2,4,6-Trichlorophenol		ND		260	4000
2,4-Dichlorophenol		ND		210	4000
2,4-Dimethylphenol		ND		1100	4000
2,4-Dinitrophenol		ND		1400	7700
2,4-Dinitrotoluene		ND	*	610	4000
2,6-Dinitrotoluene		ND		970	4000
2-Chloronaphthalene		ND		260	4000
2-Chlorophenol		ND		200	4000
2-Methylnaphthalene		ND		48	4000
2-Methylphenol		ND		120	4000
2-Nitroaniline		ND		1300	7700
2-Nitrophenol		ND		180	4000
3,3'-Dichlorobenzidine		ND		3500	4000
3-Nitroaniline		ND		910	7700
4,6-Dinitro-2-methylphenol		ND		1400	7700
4-Bromophenyl phenyl ether		ND		1300	4000
4-Chloro-3-methylphenol		ND		160	4000
4-Chloroaniline		ND		1200	4000
4-Chlorophenyl phenyl ether		ND		84	4000
4-Methylphenol		ND		220	7700
4-Nitroaniline		ND		440	7700
4-Nitrophenol		ND		960	7700
Acenaphthene		ND		46	4000
Acenaphthylene		ND		32	4000
Acetophenone		ND		200	4000
Anthracene		290	J	100	4000
Atrazine		ND		180	4000
Benzaldehyde		ND	*	430	4000
Benzo(a)anthracene		680	J	68	4000
Benzo(a)pyrene		380	J	95	4000
Benzo(b)fluoranthene		410	J	77	4000
Benzo(g,h,i)perylene		ND		47	4000
Benzo(k)fluoranthene		520	J B	43	4000
Bis(2-chloroethoxy)methane		ND		210	4000
Bis(2-chloroethyl)ether		ND		340	4000
Bis(2-ethylhexyl) phthalate		ND		1300	4000
Butyl benzyl phthalate		ND		1100	4000
Caprolactam		ND		1700	4000
Carbazole		ND		46	4000
Chrysene		590	J B	39	4000
Di-n-butyl phthalate		ND		1400	4000
Di-n-octyl phthalate		ND		92	4000
Dibenz(a,h)anthracene		ND		46	4000

Analytical Data

Client: CHA Inc | Job Number: 480-18049-1

Client Sample ID: **SB09 SS (1-2) 040212**

Lab Sample ID:	480-18049-22			Date Sampled:	04/02/2012 1415
Client Matrix:	Solid	% Moisture:	15.2	Date Received:	04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58886	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58238	Lab File ID:	V8815.D
Dilution:	20			Initial Weight/Volume:	+30.24 g
Analysis Date:	04/10/2012 1344			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		41	4000
Diethyl phthalate		ND		120	4000
Dimethyl phthalate		ND		100	4000
Fluoranthene		1200	J	57	4000
Fluorene		ND		91	4000
Hexachlorobenzene		ND		200	4000
Hexachlorobutadiene		ND		200	4000
Hexachlorocyclopentadiene		ND		1200	4000
Hexachloroethane		ND		310	4000
Indeno(1,2,3-cd)pyrene		ND		110	4000
Isophorone		ND		200	4000
N-Nitrosodi-n-propylamine		ND		310	4000
N-Nitrosodiphenylamine		ND	*	220	4000
Naphthalene		ND		66	4000
Nitrobenzene		ND		180	4000
Pentachlorophenol		ND		1400	7700
Phenanthrene		1200	J	83	4000
Phenol		ND		420	4000
Pyrene		910	J	26	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	42		39 - 146
2-Fluorobiphenyl	78		37 - 120
2-Fluorophenol	58		18 - 120
Nitrobenzene-d5	53		34 - 132
p-Terphenyl-d14	94		65 - 153
Phenol-d5	60		11 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB09 SS (3-4) 040212**

Lab Sample ID:	480-18049-23			Date Sampled:	04/02/2012 1415
Client Matrix:	Solid	% Moisture:	12.4	Date Received:	04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58452	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58249	Lab File ID:	V8615.D
Dilution:	10			Initial Weight/Volume:	+30.31 g
Analysis Date:	04/06/2012 1608			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0837			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		120	1900
bis (2-chloroisopropyl) ether		ND		200	1900
2,4,5-Trichlorophenol		ND		420	1900
2,4,6-Trichlorophenol		ND		130	1900
2,4-Dichlorophenol		ND		100	1900
2,4-Dimethylphenol		ND		520	1900
2,4-Dinitrophenol		ND		670	3700
2,4-Dinitrotoluene		ND		300	1900
2,6-Dinitrotoluene		ND		470	1900
2-Chloronaphthalene		ND		130	1900
2-Chlorophenol		ND		97	1900
2-Methylnaphthalene		ND		23	1900
2-Methylphenol		ND		59	1900
2-Nitroaniline		ND		610	3700
2-Nitrophenol		ND		87	1900
3,3'-Dichlorobenzidine		ND		1700	1900
3-Nitroaniline		ND		440	3700
4,6-Dinitro-2-methylphenol		ND		660	3700
4-Bromophenyl phenyl ether		ND		610	1900
4-Chloro-3-methylphenol		ND		78	1900
4-Chloroaniline		ND		560	1900
4-Chlorophenyl phenyl ether		ND		41	1900
4-Methylphenol		ND		110	3700
4-Nitroaniline		ND		210	3700
4-Nitrophenol		ND		460	3700
Acenaphthene		ND		22	1900
Acenaphthylene		ND		16	1900
Acetophenone		ND		98	1900
Anthracene		ND		49	1900
Atrazine		ND		85	1900
Benzaldehyde		ND		210	1900
Benzo(a)anthracene		47	J	33	1900
Benzo(a)pyrene		ND		46	1900
Benzo(b)fluoranthene		ND		37	1900
Benzo(g,h,i)perylene		ND		23	1900
Benzo(k)fluoranthene		ND		21	1900
Bis(2-chloroethoxy)methane		ND		100	1900
Bis(2-chloroethyl)ether		ND		160	1900
Bis(2-ethylhexyl) phthalate		1100	J	610	1900
Butyl benzyl phthalate		ND		510	1900
Caprolactam		ND		830	1900
Carbazole		ND		22	1900
Chrysene		ND		19	1900
Di-n-butyl phthalate		ND		660	1900
Di-n-octyl phthalate		ND		45	1900
Dibenz(a,h)anthracene		ND		22	1900

Client Sample ID: **SB09 SS (3-4) 040212**

Lab Sample ID:	480-18049-23			Date Sampled: 04/02/2012 1415
Client Matrix:	Solid	% Moisture:	12.4	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58452	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58249	Lab File ID:	V8615.D
Dilution:	10			Initial Weight/Volume:	+30.31 g
Analysis Date:	04/06/2012 1608			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0837			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		20	1900
Diethyl phthalate		ND		58	1900
Dimethyl phthalate		ND		50	1900
Fluoranthene		ND		28	1900
Fluorene		ND		44	1900
Hexachlorobenzene		ND		95	1900
Hexachlorobutadiene		ND		98	1900
Hexachlorocyclopentadiene		ND		580	1900
Hexachloroethane		ND		150	1900
Indeno(1,2,3-cd)pyrene		ND		53	1900
Isophorone		ND		95	1900
N-Nitrosodi-n-propylamine		ND		150	1900
N-Nitrosodiphenylamine		ND		100	1900
Naphthalene		ND		32	1900
Nitrobenzene		ND		85	1900
Pentachlorophenol		ND		650	3700
Phenanthrene		ND		40	1900
Phenol		ND		200	1900
Pyrene		ND		12	1900

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	60		39 - 146
2-Fluorobiphenyl	80		37 - 120
2-Fluorophenol	64		18 - 120
Nitrobenzene-d5	60		34 - 132
p-Terphenyl-d14	101		65 - 153
Phenol-d5	67		11 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB15 SS (1-2) 040212**

Lab Sample ID:	480-18049-24			Date Sampled: 04/02/2012 1430
Client Matrix:	Solid	% Moisture:	13.5	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58452	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58249	Lab File ID:	V8616.D
Dilution:	10			Initial Weight/Volume:	+30.27 g
Analysis Date:	04/06/2012 1632			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0837			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		120	1900
bis (2-chloroisopropyl) ether		ND		200	1900
2,4,5-Trichlorophenol		ND		420	1900
2,4,6-Trichlorophenol		ND		130	1900
2,4-Dichlorophenol		ND		100	1900
2,4-Dimethylphenol		ND		520	1900
2,4-Dinitrophenol		ND		680	3800
2,4-Dinitrotoluene		ND		300	1900
2,6-Dinitrotoluene		ND		470	1900
2-Chloronaphthalene		ND		130	1900
2-Chlorophenol		ND		98	1900
2-Methylnaphthalene		ND		23	1900
2-Methylphenol		ND		59	1900
2-Nitroaniline		ND		620	3800
2-Nitrophenol		ND		88	1900
3,3'-Dichlorobenzidine		ND		1700	1900
3-Nitroaniline		ND		440	3800
4,6-Dinitro-2-methylphenol		ND		670	3800
4-Bromophenyl phenyl ether		ND		620	1900
4-Chloro-3-methylphenol		ND		80	1900
4-Chloroaniline		ND		570	1900
4-Chlorophenyl phenyl ether		ND		41	1900
4-Methylphenol		ND		110	3800
4-Nitroaniline		ND		220	3800
4-Nitrophenol		ND		470	3800
Acenaphthene		ND		23	1900
Acenaphthylene		ND		16	1900
Acetophenone		ND		99	1900
Anthracene		ND		50	1900
Atrazine		ND		86	1900
Benzaldehyde		ND		210	1900
Benzo(a)anthracene		62	J	33	1900
Benzo(a)pyrene		ND		47	1900
Benzo(b)fluoranthene		ND		38	1900
Benzo(g,h,i)perylene		ND		23	1900
Benzo(k)fluoranthene		ND		21	1900
Bis(2-chloroethoxy)methane		ND		110	1900
Bis(2-chloroethyl)ether		ND		170	1900
Bis(2-ethylhexyl) phthalate		ND		620	1900
Butyl benzyl phthalate		ND		520	1900
Caprolactam		ND		840	1900
Carbazole		ND		22	1900
Chrysene		ND		19	1900
Di-n-butyl phthalate		ND		670	1900
Di-n-octyl phthalate		ND		45	1900
Dibenz(a,h)anthracene		ND		23	1900

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB15 SS (1-2) 040212**

Lab Sample ID:	480-18049-24			Date Sampled: 04/02/2012 1430
Client Matrix:	Solid	% Moisture:	13.5	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58452	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58249	Lab File ID:	V8616.D
Dilution:	10			Initial Weight/Volume:	+30.27 g
Analysis Date:	04/06/2012 1632			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0837			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		20	1900
Diethyl phthalate		ND		58	1900
Dimethyl phthalate		ND		50	1900
Fluoranthene		ND		28	1900
Fluorene		ND		45	1900
Hexachlorobenzene		ND		96	1900
Hexachlorobutadiene		ND		99	1900
Hexachlorocyclopentadiene		ND		580	1900
Hexachloroethane		ND		150	1900
Indeno(1,2,3-cd)pyrene		ND		54	1900
Isophorone		ND		97	1900
N-Nitrosodi-n-propylamine		ND		150	1900
N-Nitrosodiphenylamine		ND		110	1900
Naphthalene		ND		32	1900
Nitrobenzene		ND		86	1900
Pentachlorophenol		ND		660	3800
Phenanthrene		ND		41	1900
Phenol		ND		200	1900
Pyrene		ND		13	1900

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	71		39 - 146
2-Fluorobiphenyl	81		37 - 120
2-Fluorophenol	64		18 - 120
Nitrobenzene-d5	60		34 - 132
p-Terphenyl-d14	100		65 - 153
Phenol-d5	62		11 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB15 SS (3-4) 040212**

Lab Sample ID: 480-18049-25

Client Matrix: Solid

% Moisture: 10.0

Date Sampled: 04/02/2012 1430

Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58452	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58249	Lab File ID:	V8617.D
Dilution:	10			Initial Weight/Volume:	+30.87 g
Analysis Date:	04/06/2012 1656			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0837			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		110	1800
bis (2-chloroisopropyl) ether		ND		190	1800
2,4,5-Trichlorophenol		ND		400	1800
2,4,6-Trichlorophenol		ND		120	1800
2,4-Dichlorophenol		ND		96	1800
2,4-Dimethylphenol		ND		490	1800
2,4-Dinitrophenol		ND		640	3600
2,4-Dinitrotoluene		ND		280	1800
2,6-Dinitrotoluene		ND		450	1800
2-Chloronaphthalene		ND		120	1800
2-Chlorophenol		ND		93	1800
2-Methylnaphthalene		ND		22	1800
2-Methylphenol		ND		56	1800
2-Nitroaniline		ND		580	3600
2-Nitrophenol		ND		83	1800
3,3'-Dichlorobenzidine		ND		1600	1800
3-Nitroaniline		ND		420	3600
4,6-Dinitro-2-methylphenol		ND		630	3600
4-Bromophenyl phenyl ether		ND		580	1800
4-Chloro-3-methylphenol		ND		75	1800
4-Chloroaniline		ND		530	1800
4-Chlorophenyl phenyl ether		ND		39	1800
4-Methylphenol		ND		100	3600
4-Nitroaniline		ND		200	3600
4-Nitrophenol		ND		440	3600
Acenaphthene		ND		21	1800
Acenaphthylene		ND		15	1800
Acetophenone		ND		94	1800
Anthracene		ND		47	1800
Atrazine		ND		81	1800
Benzaldehyde		ND		200	1800
Benzo(a)anthracene		210	J	31	1800
Benzo(a)pyrene		160	J	44	1800
Benzo(b)fluoranthene		220	J	35	1800
Benzo(g,h,i)perylene		ND		22	1800
Benzo(k)fluoranthene		140	J	20	1800
Bis(2-chloroethoxy)methane		ND		99	1800
Bis(2-chloroethyl)ether		ND		160	1800
Bis(2-ethylhexyl) phthalate		1000	J	590	1800
Butyl benzyl phthalate		ND		490	1800
Caprolactam		ND		790	1800
Carbazole		ND		21	1800
Chrysene		200	J	18	1800
Di-n-butyl phthalate		ND		630	1800
Di-n-octyl phthalate		ND		43	1800
Dibenz(a,h)anthracene		ND		21	1800

Client Sample ID:	**SB15 SS (3-4) 040212**		
Lab Sample ID:	480-18049-25		Date Sampled: 04/02/2012 1430
Client Matrix:	Solid	% Moisture: 10.0	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58452	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58249	Lab File ID:	V8617.D
Dilution:	10			Initial Weight/Volume:	+30.87 g
Analysis Date:	04/06/2012 1656			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0837			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		19	1800
Diethyl phthalate		ND		55	1800
Dimethyl phthalate		ND		48	1800
Fluoranthene		300	J	26	1800
Fluorene		ND		42	1800
Hexachlorobenzene		ND		91	1800
Hexachlorobutadiene		ND		93	1800
Hexachlorocyclopentadiene		ND		550	1800
Hexachloroethane		ND		140	1800
Indeno(1,2,3-cd)pyrene		ND		50	1800
Isophorone		ND		91	1800
N-Nitrosodi-n-propylamine		ND		140	1800
N-Nitrosodiphenylamine		ND		100	1800
Naphthalene		ND		30	1800
Nitrobenzene		ND		81	1800
Pentachlorophenol		ND		630	3600
Phenanthrene		210	J	38	1800
Phenol		ND		190	1800
Pyrene		300	J	12	1800

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	16	X	39 - 146
2-Fluorobiphenyl	83		37 - 120
2-Fluorophenol	42		18 - 120
Nitrobenzene-d5	66		34 - 132
p-Terphenyl-d14	98		65 - 153
Phenol-d5	63		11 - 120

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB06 SS (1-2) 040212**

Lab Sample ID: 480-18049-26

Client Matrix: Solid

% Moisture: 11.4

Date Sampled: 04/02/2012 1200

Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method: 8270C

Prep Method: 3550B

Dilution: 20

Analysis Date: 04/06/2012 1720

Prep Date: 04/05/2012 0837

Analysis Batch: 480-58452

Prep Batch: 480-58249

Instrument ID: HP5973V

Lab File ID: V8618.D

Initial Weight/Volume: +30.63 g

Final Weight/Volume: 1 mL

Injection Volume: 1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Biphenyl		ND		230	3800
bis (2-chloroisopropyl) ether		ND		390	3800
2,4,5-Trichlorophenol		ND		810	3800
2,4,6-Trichlorophenol		ND		250	3800
2,4-Dichlorophenol		ND		200	3800
2,4-Dimethylphenol		ND		1000	3800
2,4-Dinitrophenol		ND		1300	7300
2,4-Dinitrotoluene		ND		580	3800
2,6-Dinitrotoluene		ND		910	3800
2-Chloronaphthalene		ND		250	3800
2-Chlorophenol		ND		190	3800
2-Methylnaphthalene		ND		45	3800
2-Methylphenol		ND		110	3800
2-Nitroaniline		ND		1200	7300
2-Nitrophenol		ND		170	3800
3,3'-Dichlorobenzidine		ND		3300	3800
3-Nitroaniline		ND		860	7300
4,6-Dinitro-2-methylphenol		ND		1300	7300
4-Bromophenyl phenyl ether		ND		1200	3800
4-Chloro-3-methylphenol		ND		150	3800
4-Chloroaniline		ND		1100	3800
4-Chlorophenyl phenyl ether		ND		80	3800
4-Methylphenol		ND		210	7300
4-Nitroaniline		ND		420	7300
4-Nitrophenol		ND		910	7300
Acenaphthene		ND		44	3800
Acenaphthylene		ND		31	3800
Acetophenone		ND		190	3800
Anthracene		ND		96	3800
Atrazine		ND		170	3800
Benzaldehyde		ND		410	3800
Benzo(a)anthracene		140	J	64	3800
Benzo(a)pyrene		ND		90	3800
Benzo(b)fluoranthene		ND		72	3800
Benzo(g,h,i)perylene		ND		45	3800
Benzo(k)fluoranthene		ND		41	3800
Bis(2-chloroethoxy)methane		ND		200	3800
Bis(2-chloroethyl)ether		ND		320	3800
Bis(2-ethylhexyl) phthalate		ND		1200	3800
Butyl benzyl phthalate		ND		1000	3800
Caprolactam		ND		1600	3800
Carbazole		ND		43	3800
Chrysene		74	J	37	3800
Di-n-butyl phthalate		ND		1300	3800
Di-n-octyl phthalate		ND		87	3800
Dibenz(a,h)anthracene		ND		44	3800

Analytical Data

Client: CHA Inc

Job Number: 480-18049-1

Client Sample ID: **SB06 SS (1-2) 040212**

Lab Sample ID:	480-18049-26			Date Sampled: 04/02/2012 1200
Client Matrix:	Solid	% Moisture:	11.4	Date Received: 04/04/2012 0900

8270C Semivolatile Organic Compounds (GC/MS)

Analysis Method:	8270C	Analysis Batch:	480-58452	Instrument ID:	HP5973V
Prep Method:	3550B	Prep Batch:	480-58249	Lab File ID:	V8618.D
Dilution:	20			Initial Weight/Volume:	+30.63 g
Analysis Date:	04/06/2012 1720			Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0837			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Dibenzofuran		ND		39	3800
Diethyl phthalate		ND		110	3800
Dimethyl phthalate		ND		97	3800
Fluoranthene		ND		54	3800
Fluorene		ND		86	3800
Hexachlorobenzene		ND		190	3800
Hexachlorobutadiene		ND		190	3800
Hexachlorocyclopentadiene		ND		1100	3800
Hexachloroethane		ND		290	3800
Indeno(1,2,3-cd)pyrene		ND		100	3800
Isophorone		ND		190	3800
N-Nitrosodi-n-propylamine		ND		300	3800
N-Nitrosodiphenylamine		ND		200	3800
Naphthalene		ND		62	3800
Nitrobenzene		ND		170	3800
Pentachlorophenol		ND		1300	7300
Phenanthrene		ND		78	3800
Phenol		ND		390	3800
Pyrene		ND		24	3800

Surrogate	%Rec	Qualifier	Acceptance Limits
2,4,6-Tribromophenol	41		39 - 146
2-Fluorobiphenyl	77		37 - 120
2-Fluorophenol	59		18 - 120
Nitrobenzene-d5	54		34 - 132
p-Terphenyl-d14	86		65 - 153
Phenol-d5	61		11 - 120

Client Sample ID: **SB02 SS (0-3) 040212**

Lab Sample ID: 480-18049-3 Date Sampled: 04/02/2012 1004
Client Matrix: Solid Date Received: 04/04/2012 0900

6010B Metals (ICP)-TCLP

Analysis Method:	6010B	Analysis Batch:	480-58666	Instrument ID:	ICAP2
Prep Method:	3010A	Prep Batch:	480-58480	Lab File ID:	I2040612A-5.asc
Dilution:	1.0	Leach Batch:	480-58275	Initial Weight/Volume:	50 mL
Analysis Date:	04/06/2012 1912			Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1050				
Leach Date:	04/05/2012 1009				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Arsenic		ND		0.0056	0.010
Barium		0.33	B	0.00070	0.0020
Cadmium		0.0016		0.00050	0.0010
Chromium		0.0086	B	0.0010	0.0040
Lead		0.036		0.0030	0.0050
Selenium		ND		0.0087	0.015
Silver		ND		0.0017	0.0030

7470A Mercury (CVAA)-TCLP

Analysis Method:	7470A	Analysis Batch:	480-58543	Instrument ID:	LEEMAN2
Prep Method:	7470A	Prep Batch:	480-58479	Lab File ID:	H04062TC.PRN
Dilution:	1.0	Leach Batch:	480-58275	Initial Weight/Volume:	30 mL
Analysis Date:	04/06/2012 1339			Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1040				
Leach Date:	04/05/2012 1009				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Mercury		ND		0.00012	0.00020

Client Sample ID: **SB05 SS (0-3) 040212**

Lab Sample ID: 480-18049-7
Client Matrix: Solid

Date Sampled: 04/02/2012 1115
Date Received: 04/04/2012 0900

6010B Metals (ICP)-TCLP

Analysis Method:	6010B	Analysis Batch:	480-58666	Instrument ID:	ICAP2
Prep Method:	3010A	Prep Batch:	480-58480	Lab File ID:	I2040612A-5.asc
Dilution:	1.0	Leach Batch:	480-58275	Initial Weight/Volume:	50 mL
Analysis Date:	04/06/2012 1923			Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1050				
Leach Date:	04/05/2012 1009				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Arsenic		0.0082	J	0.0056	0.010
Barium		0.54	B	0.00070	0.0020
Cadmium		0.0019		0.00050	0.0010
Chromium		0.0041	B	0.0010	0.0040
Lead		0.020		0.0030	0.0050
Selenium		ND		0.0087	0.015
Silver		ND		0.0017	0.0030

7470A Mercury (CVAA)-TCLP

Analysis Method:	7470A	Analysis Batch:	480-58543	Instrument ID:	LEEMAN2
Prep Method:	7470A	Prep Batch:	480-58479	Lab File ID:	H04062TC.PRN
Dilution:	1.0	Leach Batch:	480-58275	Initial Weight/Volume:	30 mL
Analysis Date:	04/06/2012 1346			Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1040				
Leach Date:	04/05/2012 1009				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Mercury		ND		0.00012	0.00020

General Chemistry

Client Sample ID: **SB01 SS (2-3) 040212**

Lab Sample ID: 480-18049-1 Date Sampled: 04/02/2012 0915
Client Matrix: Solid Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	11		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121						DryWt Corrected: N
Percent Solids	89		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121						DryWt Corrected: N

General Chemistry

Client Sample ID: **SB02 SS (2-3) 040212**

Lab Sample ID: 480-18049-2
Client Matrix: Solid

Date Sampled: 04/02/2012 1004
Date Received: 04/04/2012 0900

Analyte		Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture		13		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids		87		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB02 SS (0-3) 040212**

Lab Sample ID: 480-18049-3 Date Sampled: 04/02/2012 1004
Client Matrix: Solid Date Received: 04/04/2012 0900

Analyte		Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Reactive		ND		mg/Kg	0.0030	10.0	1.0	9012
	Analysis Batch: 480-58611	Analysis Date: 04/07/2012 1053						DryWt Corrected: N
	Prep Batch: 480-58610	Prep Date: 04/06/2012 1500						
Sulfide, Reactive		ND		mg/Kg	0.57	10.0	1.0	9034
	Analysis Batch: 480-58614	Analysis Date: 04/06/2012 1900						DryWt Corrected: N
	Prep Batch: 480-58613	Prep Date: 04/06/2012 1500						

Analyte		Result	Qual	Units	RL	RL	Dil	Method
Flashpoint		>176.0		Degrees F	50.0	50.0	1.0	1010
	Analysis Batch: 480-58632	Analysis Date: 04/07/2012 1416						DryWt Corrected: N
pH		7.33		SU	0.100	0.100	1.0	9045C
	Analysis Batch: 480-58572	Analysis Date: 04/06/2012 1950						DryWt Corrected: N
Percent Moisture		8.8		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121						DryWt Corrected: N
Percent Solids		91		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121						DryWt Corrected: N

General Chemistry

Client Sample ID: **SB03 SS (1-2) 040212**

Lab Sample ID: 480-18049-4 Date Sampled: 04/02/2012 1030

Client Matrix: Solid Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	21		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	80		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB04 SS (2-3) 040212**

Lab Sample ID: 480-18049-5
Client Matrix: Solid

Date Sampled: 04/02/2012 1045
Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	13		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	87		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB05 SS (1-2 040212**

Lab Sample ID: 480-18049-6

Client Matrix: Solid

Date Sampled: 04/02/2012 1115

Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	16		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	84		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB05 SS (0-3) 040212**

Lab Sample ID:	480-18049-7	Date Sampled:	04/02/2012 1115
Client Matrix:	Solid	Date Received:	04/04/2012 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Cyanide, Reactive	ND		mg/Kg	0.0030	10.0	1.0	9012
Analysis Batch: 480-58611	Analysis Date: 04/07/2012 1053						DryWt Corrected: N
Prep Batch: 480-58610	Prep Date: 04/06/2012 1500						
Sulfide, Reactive	ND		mg/Kg	0.57	10.0	1.0	9034
Analysis Batch: 480-58614	Analysis Date: 04/06/2012 1900						DryWt Corrected: N
Prep Batch: 480-58613	Prep Date: 04/06/2012 1500						

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Flashpoint	>176.0		Degrees F	50.0	50.0	1.0	1010
Analysis Batch: 480-58632	Analysis Date: 04/07/2012 1459						DryWt Corrected: N
pH	10.5		SU	0.100	0.100	1.0	9045C
Analysis Batch: 480-58572	Analysis Date: 04/06/2012 1950						DryWt Corrected: N
Percent Moisture	19		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121						DryWt Corrected: N
Percent Solids	81		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121						DryWt Corrected: N

General Chemistry

Client Sample ID: **SB06 SS (3-4) 040212**

Lab Sample ID: 480-18049-8 Date Sampled: 04/02/2012 1200
Client Matrix: Solid Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	21		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	79		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB07 SS (1-2) 040212**

Lab Sample ID: 480-18049-9 Date Sampled: 04/02/2012 1215
Client Matrix: Solid Date Received: 04/04/2012 0900

Analyte		Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture		23		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121						DryWt Corrected: N
Percent Solids		77		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121						DryWt Corrected: N

General Chemistry

Client Sample ID: **SB07 SS (3-4) 040212**

Lab Sample ID:	480-18049-10	Date Sampled:	04/02/2012 1215
Client Matrix:	Solid	Date Received:	04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	23		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	77		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB10 SS (1-2) 040212**

Lab Sample ID: 480-18049-11
Client Matrix: Solid

Date Sampled: 04/02/2012 1230
Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	13		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	87		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB10 SS (3-4) 040212**

Lab Sample ID: 480-18049-12 Date Sampled: 04/02/2012 1230

Client Matrix: Solid Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	19		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	81		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB11 SS (2-3) 040212**

Lab Sample ID: 480-18049-13
Client Matrix: Solid

Date Sampled: 04/02/2012 1245
Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	11		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	89		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB14 SS (1-2)040212**

Lab Sample ID: 480-18049-14 Date Sampled: 04/02/2012 1300

Client Matrix: Solid Date Received: 04/04/2012 0900

Analyte		Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture		13		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids		87		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB14 SS (2-3) 040212**

Lab Sample ID: 480-18049-15
Client Matrix: Solid

Date Sampled: 04/02/2012 1300
Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	13		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	87		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB13 SS (1-2) 040212**

Lab Sample ID: 480-18049-16 Date Sampled: 04/02/2012 1315
Client Matrix: Solid Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	10		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	90		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB13 SS (2-3) 040212**

Lab Sample ID: 480-18049-17
Client Matrix: Solid

Date Sampled: 04/02/2012 1315
Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	14		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	86		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB08 SS (1-2) 040212**

Lab Sample ID: 480-18049-18 Date Sampled: 04/02/2012 1330
Client Matrix: Solid Date Received: 04/04/2012 0900

Analyte		Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture		26		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids		74		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB08 SS (2-3) 040212**

Lab Sample ID: 480-18049-19
Client Matrix: Solid

Date Sampled: 04/02/2012 1330
Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	17		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	83		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB12 SS (0-1) 040212**

Lab Sample ID: 480-18049-20 Date Sampled: 04/02/2012 1400
Client Matrix: Solid Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	12		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	88		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB12 SS (2-3)040212**

Lab Sample ID: 480-18049-21 Date Sampled: 04/02/2012 1400
Client Matrix: Solid Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	7.9		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121						DryWt Corrected: N
Percent Solids	92		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121						DryWt Corrected: N

General Chemistry

Client Sample ID: **SB09 SS (1-2) 040212**

Lab Sample ID:	480-18049-22	Date Sampled:	04/02/2012 1415
Client Matrix:	Solid	Date Received:	04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	15		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	85		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB09 SS (3-4) 040212**

Lab Sample ID: 480-18049-23
Client Matrix: Solid

Date Sampled: 04/02/2012 1415
Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	12		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	88		%	0.10	0.10	1.0	Moisture
	Analysis Batch: 480-58314	Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB15 SS (1-2) 040212**

Lab Sample ID: 480-18049-24
Client Matrix: Solid

Date Sampled: 04/02/2012 1430
Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	14		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	86		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB15 SS (3-4) 040212**

Lab Sample ID: 480-18049-25 Date Sampled: 04/02/2012 1430
Client Matrix: Solid Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	10		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	90		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

General Chemistry

Client Sample ID: **SB06 SS (1-2) 040212**

Lab Sample ID: 480-18049-26
Client Matrix: Solid

Date Sampled: 04/02/2012 1200
Date Received: 04/04/2012 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	11		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N
Percent Solids	89		%	0.10	0.10	1.0	Moisture
Analysis Batch: 480-58314		Analysis Date: 04/05/2012 1121					DryWt Corrected: N

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Solid

Lab Sample ID	Client Sample ID	DCA %Rec	TOL %Rec	BFB %Rec
480-18049-1	SB01 SS (2-3) 040212	118	110	105
480-18049-4	SB03 SS (1-2) 040212	109	104	96
480-18049-5	SB04 SS (2-3) 040212	108	100	98
480-18049-6	SB05 SS (1-2 040212	98	100	100
480-18049-6 DL	SB05 SS (1-2 040212 DL	100	104	102
480-18049-9	SB07 SS (1-2) 040212	99	109	109
480-18049-10	SB07 SS (3-4) 040212	104	112	114
480-18049-13	SB11 SS (2-3) 040212	99	105	105
480-18049-14	SB14 SS (1-2)040212	100	107	106
480-18049-15	SB14 SS (2-3) 040212	100	107	105
480-18049-16	SB13 SS (1-2) 040212	99	106	104
480-18049-17	SB13 SS (2-3) 040212	101	107	107
480-18049-18	SB08 SS (1-2) 040212	98	107	103
480-18049-19	SB08 SS (2-3) 040212	104	112	111
480-18049-20	SB12 SS (0-1) 040212	98	107	105
480-18049-21	SB12 SS (2-3)040212	101	106	107
480-18049-23	SB09 SS (3-4) 040212	101	107	106
480-18049-24	SB15 SS (1-2) 040212	102	107	106
480-18049-25	SB15 SS (3-4) 040212	99	106	105

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	64-126
TOL = Toluene-d8 (Surr)	71-125
BFB = 4-Bromofluorobenzene (Surr)	72-126

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Solid

Lab Sample ID	Client Sample ID	DCA %Rec	TOL %Rec	BFB %Rec
480-18049-26	SB06 SS (1-2) 040212	99	108	106
MB 480-58043/7		105	103	104
MB 480-58251/7		91	106	102
MB 480-58395/7		95	107	104
MB 480-58428/6		90	108	102
LCS 480-58043/6		108	101	104
LCS 480-58251/6		97	106	105
LCS 480-58395/6		92	107	105
LCS 480-58428/5		92	109	106

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	64-126
TOL = Toluene-d8 (Surr)	71-125
BFB = 4-Bromofluorobenzene (Surr)	72-126

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Solid

Lab Sample ID	Client Sample ID	DCA %Rec	TOL %Rec	BFB %Rec
480-18049-1 DL	SB01 SS (2-3) 040212 DL	114	53	53
480-18049-2	SB02 SS (2-3) 040212	119	109	120
480-18049-2 DL	SB02 SS (2-3) 040212 DL	112	116	119
480-18049-4 DL	SB03 SS (1-2) 040212 DL	0X	0X	0X
480-18049-5 DL	SB04 SS (2-3) 040212 DL	123	129	129
480-18049-8	SB06 SS (3-4) 040212	96	117	137
480-18049-8 DL	SB06 SS (3-4) 040212 DL	0X	0X	0X
480-18049-11	SB10 SS (1-2) 040212	126	131	133
480-18049-12	SB10 SS (3-4) 040212	122	126	127
480-18049-22	SB09 SS (1-2) 040212	117	97	99
MB 480-58304/2-A		113	136	129
LCS 480-58304/1-A		120	139	133

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	53-146
TOL = Toluene-d8 (Surr)	50-149
BFB = 4-Bromofluorobenzene (Surr)	49-148

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Solid TCLP

Lab Sample ID	Client Sample ID	DCA %Rec	TOL %Rec	BFB %Rec
480-18049-3	SB02 SS (0-3) 040212	99	107	108
480-18049-7	SB05 SS (0-3) 040212	102	108	109
MB 480-58568/5		101	108	108
LB 480-58276/1-A		97	108	106
LCS 480-58568/4		100	109	108

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	66-137
TOL = Toluene-d8 (Surr)	71-126
BFB = 4-Bromofluorobenzene (Surr)	73-120

Surrogate Recovery Report

8270C Semivolatile Organic Compounds (GC/MS)

Client Matrix: Solid

Lab Sample ID	Client Sample ID	2FP %Rec	PHL %Rec	NBZ %Rec	FBP %Rec	TBP %Rec	TPH %Rec
480-18049-1	SB01 SS (2-3) 040212	63	71	71	89	93	100
480-18049-2	SB02 SS (2-3) 040212	77	94	113	106	103	116
480-18049-4	SB03 SS (1-2) 040212	0X	0X	73	90	0X	118
480-18049-5	SB04 SS (2-3) 040212	52	69	105	105	0X	119
480-18049-6	SB05 SS (1-2 040212	0X	0X	0X	10X	0X	0X
480-18049-8	SB06 SS (3-4) 040212	78	78	78	97	87	101
480-18049-9	SB07 SS (1-2) 040212	69	75	78	91	110	109
480-18049-10	SB07 SS (3-4) 040212	80	87	88	97	125	118
480-18049-11	SB10 SS (1-2) 040212	66	63	61	77	66	101
480-18049-12	SB10 SS (3-4) 040212	80	84	96	97	123	121
480-18049-13	SB11 SS (2-3) 040212	95	96	97	104	136	125
480-18049-14	SB14 SS (1-2)040212	42	50	49	58	69	71
480-18049-15	SB14 SS (2-3) 040212	90	91	93	102	128	119
480-18049-16	SB13 SS (1-2) 040212	77	79	74	91	89	122
480-18049-17	SB13 SS (2-3) 040212	83	79	70	88	74	121
480-18049-18	SB08 SS (1-2) 040212	0X	0X	0X	64	0X	0X
480-18049-19	SB08 SS (2-3) 040212	63	70	66	82	88	102
480-18049-20	SB12 SS (0-1) 040212	69	70	67	82	73	98
480-18049-21	SB12 SS (2-3)040212	64	68	62	81	70	95

Surrogate	Acceptance Limits
2FP = 2-Fluorophenol	18-120
PHL = Phenol-d5	11-120
NBZ = Nitrobenzene-d5	34-132
FBP = 2-Fluorobiphenyl	37-120
TBP = 2,4,6-Tribromophenol	39-146
TPH = p-Terphenyl-d14	65-153

Surrogate Recovery Report

8270C Semivolatile Organic Compounds (GC/MS)

Client Matrix: Solid

Lab Sample ID	Client Sample ID	2FP %Rec	PHL %Rec	NBZ %Rec	FBP %Rec	TBP %Rec	TPH %Rec
480-18049-22	SB09 SS (1-2) 040212	58	60	53	78	42	94
480-18049-23	SB09 SS (3-4) 040212	64	67	60	80	60	101
480-18049-24	SB15 SS (1-2) 040212	64	62	60	81	71	100
480-18049-25	SB15 SS (3-4) 040212	42	63	66	83	16X	98
480-18049-26	SB06 SS (1-2) 040212	59	61	54	77	41	86
MB 480-58238/1-A		89	90	98	103	113	121
MB 480-58249/1-A		73	77	73	89	86	110
LCS 480-58238/2-A		90	93	98	101	124	117
LCS 480-58249/2-A		82	86	85	94	103	110
LCSD 480-58238/3-A		94	96	99	104	133	129

Surrogate	Acceptance Limits
2FP = 2-Fluorophenol	18-120
PHL = Phenol-d5	11-120
NBZ = Nitrobenzene-d5	34-132
FBP = 2-Fluorobiphenyl	37-120
TBP = 2,4,6-Tribromophenol	39-146
TPH = p-Terphenyl-d14	65-153

Surrogate Recovery Report

8270C Semivolatile Organic Compounds (GC/MS)

Client Matrix: Solid TCLP

Lab Sample ID	Client Sample ID	2FP %Rec	PHL %Rec	NBZ %Rec	FBP %Rec	TBP %Rec	TPH %Rec
480-18049-3	SB02 SS (0-3) 040212	43	28	71	87	106	119
480-18049-3 DL	SB02 SS (0-3) 040212 DL	44	27	81	91	82	112
480-18049-7	SB05 SS (0-3) 040212	44	28	76	94	111	112
MB 480-58531/1-A		41	27	65	81	93	112
LB 480-58275/13-D		39	27	75	89	98	120
LCS 480-58531/2-A		45	33	76	91	106	113
LCSD 480-58531/3-A		54	37	88	97	116	122

Surrogate	Acceptance Limits
2FP = 2-Fluorophenol	20-120
PHL = Phenol-d5	16-120
NBZ = Nitrobenzene-d5	46-120
FBP = 2-Fluorobiphenyl	48-120
TBP = 2,4,6-Tribromophenol	52-132
TPH = p-Terphenyl-d14	67-150

Quality Control Results

Client: CHA Inc

Job Number: 480-18049-1

Method Blank - Batch: 480-58043

Method: 8260B
Preparation: N/A

Lab Sample ID:	MB 480-58043/7	Analysis Batch:	480-58043	Instrument ID:	HP5973F
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	F7750.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	04/04/2012 1137	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1,1-Trichloroethane	ND		0.36	5.0
1,1,2,2-Tetrachloroethane	ND		0.81	5.0
1,1,2-Trichloroethane	ND		0.65	5.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.1	5.0
1,1-Dichloroethane	ND		0.61	5.0
1,1-Dichloroethene	ND		0.61	5.0
1,2,4-Trichlorobenzene	ND		0.30	5.0
1,2-Dibromo-3-Chloropropane	ND		2.5	5.0
1,2-Dibromoethane	ND		0.64	5.0
1,2-Dichlorobenzene	ND		0.39	5.0
1,2-Dichloroethane	ND		0.25	5.0
1,2-Dichloropropane	ND		2.5	5.0
1,3-Dichlorobenzene	ND		0.26	5.0
1,4-Dichlorobenzene	ND		0.70	5.0
2-Hexanone	ND		2.5	25
2-Butanone (MEK)	ND		1.8	25
4-Methyl-2-pentanone (MIBK)	ND		1.6	25
Acetone	ND		4.2	25
Benzene	ND		0.25	5.0
Bromodichloromethane	ND		0.67	5.0
Bromoform	ND		2.5	5.0
Bromomethane	ND		0.45	5.0
Carbon disulfide	ND		2.5	5.0
Carbon tetrachloride	ND		0.48	5.0
Chlorobenzene	ND		0.66	5.0
Dibromochloromethane	ND		0.64	5.0
Chloroethane	ND		1.1	5.0
Chloroform	ND		0.31	5.0
Chloromethane	ND		0.30	5.0
cis-1,2-Dichloroethene	ND		0.64	5.0
cis-1,3-Dichloropropene	ND		0.72	5.0
Cyclohexane	ND		0.70	5.0
Dichlorodifluoromethane	ND		0.41	5.0
Ethylbenzene	ND		0.35	5.0
Isopropylbenzene	ND		0.75	5.0
Methyl acetate	ND		0.93	5.0
Methyl tert-butyl ether	ND		0.49	5.0
Methylcyclohexane	ND		0.76	5.0
Methylene Chloride	ND		2.3	5.0
Styrene	ND		0.25	5.0
Tetrachloroethene	ND		0.67	5.0
Toluene	ND		0.38	5.0
trans-1,2-Dichloroethene	ND		0.52	5.0
trans-1,3-Dichloropropene	ND		2.2	5.0
Trichloroethene	ND		1.1	5.0

Method Blank - Batch: 480-58043

Method: 8260B
Preparation: N/A

Lab Sample ID:	MB 480-58043/7	Analysis Batch:	480-58043	Instrument ID:	HP5973F
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	F7750.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	04/04/2012 1137	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Trichlorofluoromethane	ND		0.47	5.0
Vinyl chloride	ND		0.61	5.0
Xylenes, Total	ND		0.84	10

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	105	64 - 126
Toluene-d8 (Surr)	103	71 - 125
4-Bromofluorobenzene (Surr)	104	72 - 126

Lab Control Sample - Batch: 480-58043

Method: 8260B
Preparation: N/A

Lab Sample ID:	LCS 480-58043/6	Analysis Batch:	480-58043	Instrument ID:	HP5973F
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	F7749.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	04/04/2012 1111	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethane	50.0	52.7	105	79 - 126	
1,1-Dichloroethene	50.0	45.6	91	65 - 153	
1,2-Dichlorobenzene	50.0	42.8	86	75 - 120	
1,2-Dichloroethane	50.0	53.2	106	77 - 122	
Benzene	50.0	54.8	110	79 - 127	
Chlorobenzene	50.0	47.7	95	76 - 124	
cis-1,2-Dichloroethene	50.0	53.9	108	81 - 117	
Ethylbenzene	50.0	46.0	92	80 - 120	
Methyl tert-butyl ether	50.0	50.9	102	63 - 125	
Tetrachloroethene	50.0	47.5	95	74 - 122	
Toluene	50.0	46.6	93	74 - 128	
trans-1,2-Dichloroethene	50.0	54.6	109	78 - 126	
Trichloroethene	50.0	53.6	107	77 - 129	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108	64 - 126
Toluene-d8 (Surr)	101	71 - 125
4-Bromofluorobenzene (Surr)	104	72 - 126

Quality Control Results

Client: CHA Inc

Job Number: 480-18049-1

Method Blank - Batch: 480-58251

Method: 8260B
Preparation: N/A

Lab Sample ID:	MB 480-58251/7	Analysis Batch:	480-58251	Instrument ID:	HP5973F
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	F7802.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	04/05/2012 1219	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1,1-Trichloroethane	ND		0.36	5.0
1,1,2,2-Tetrachloroethane	ND		0.81	5.0
1,1,2-Trichloroethane	ND		0.65	5.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.1	5.0
1,1-Dichloroethane	ND		0.61	5.0
1,1-Dichloroethene	ND		0.61	5.0
1,2,4-Trichlorobenzene	ND		0.30	5.0
1,2-Dibromo-3-Chloropropane	ND		2.5	5.0
1,2-Dibromoethane	ND		0.64	5.0
1,2-Dichlorobenzene	ND		0.39	5.0
1,2-Dichloroethane	ND		0.25	5.0
1,2-Dichloropropane	ND		2.5	5.0
1,3-Dichlorobenzene	ND		0.26	5.0
1,4-Dichlorobenzene	ND		0.70	5.0
2-Hexanone	ND		2.5	25
2-Butanone (MEK)	ND		1.8	25
4-Methyl-2-pentanone (MIBK)	ND		1.6	25
Acetone	ND		4.2	25
Benzene	ND		0.25	5.0
Bromodichloromethane	ND		0.67	5.0
Bromoform	ND		2.5	5.0
Bromomethane	ND		0.45	5.0
Carbon disulfide	ND		2.5	5.0
Carbon tetrachloride	ND		0.48	5.0
Chlorobenzene	ND		0.66	5.0
Dibromochloromethane	ND		0.64	5.0
Chloroethane	ND		1.1	5.0
Chloroform	ND		0.31	5.0
Chloromethane	ND		0.30	5.0
cis-1,2-Dichloroethene	ND		0.64	5.0
cis-1,3-Dichloropropene	ND		0.72	5.0
Cyclohexane	ND		0.70	5.0
Dichlorodifluoromethane	ND		0.41	5.0
Ethylbenzene	0.480	J	0.35	5.0
Isopropylbenzene	ND		0.75	5.0
Methyl acetate	ND		0.93	5.0
Methyl tert-butyl ether	ND		0.49	5.0
Methylcyclohexane	ND		0.76	5.0
Methylene Chloride	ND		2.3	5.0
Styrene	ND		0.25	5.0
Tetrachloroethene	ND		0.67	5.0
Toluene	ND		0.38	5.0
trans-1,2-Dichloroethene	ND		0.52	5.0
trans-1,3-Dichloropropene	ND		2.2	5.0
Trichloroethene	ND		1.1	5.0

Method Blank - Batch: 480-58251

Method: 8260B
Preparation: N/A

Lab Sample ID:	MB 480-58251/7	Analysis Batch:	480-58251	Instrument ID:	HP5973F
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	F7802.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	04/05/2012 1219	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Trichlorofluoromethane	ND		0.47	5.0
Vinyl chloride	ND		0.61	5.0
Xylenes, Total	1.74	J	0.84	10

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	91	64 - 126
Toluene-d8 (Surr)	106	71 - 125
4-Bromofluorobenzene (Surr)	102	72 - 126

Lab Control Sample - Batch: 480-58251

Method: 8260B
Preparation: N/A

Lab Sample ID:	LCS 480-58251/6	Analysis Batch:	480-58251	Instrument ID:	HP5973F
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	F7801.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	04/05/2012 1153	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethane	50.0	44.0	88	79 - 126	
1,1-Dichloroethene	50.0	44.4	89	65 - 153	
1,2-Dichlorobenzene	50.0	45.8	92	75 - 120	
1,2-Dichloroethane	50.0	42.3	85	77 - 122	
Benzene	50.0	44.6	89	79 - 127	
Chlorobenzene	50.0	45.4	91	76 - 124	
cis-1,2-Dichloroethene	50.0	45.6	91	81 - 117	
Ethylbenzene	50.0	45.4	91	80 - 120	
Methyl tert-butyl ether	50.0	43.9	88	63 - 125	
Tetrachloroethene	50.0	45.9	92	74 - 122	
Toluene	50.0	45.6	91	74 - 128	
trans-1,2-Dichloroethene	50.0	45.2	90	78 - 126	
Trichloroethene	50.0	43.9	88	77 - 129	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	97	64 - 126
Toluene-d8 (Surr)	106	71 - 125
4-Bromofluorobenzene (Surr)	105	72 - 126

Quality Control Results

Client: CHA Inc

Job Number: 480-18049-1

Method Blank - Batch: 480-58304

Method: 8260B
Preparation: 5035

Lab Sample ID:	MB 480-58304/2-A	Analysis Batch:	480-58389	Instrument ID:	HP5973G
Client Matrix:	Solid	Prep Batch:	480-58304	Lab File ID:	G10706.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5.25 g
Analysis Date:	04/06/2012 0529	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1,1-Trichloroethane	ND		26	95
1,1,2,2-Tetrachloroethane	ND		15	95
1,1,2-Trichloroethane	ND		20	95
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		48	95
1,1-Dichloroethane	ND		29	95
1,1-Dichloroethene	ND		33	95
1,2,4-Trichlorobenzene	ND		36	95
1,2-Dibromo-3-Chloropropane	ND		48	95
1,2-Dibromoethane	ND		3.6	95
1,2-Dichlorobenzene	ND		24	95
1,2-Dichloroethane	ND		39	95
1,2-Dichloropropane	ND		15	95
1,3-Dichlorobenzene	ND		25	95
1,4-Dichlorobenzene	ND		13	95
2-Hexanone	ND		200	480
2-Butanone (MEK)	ND		280	480
4-Methyl-2-pentanone (MIBK)	ND		30	480
Acetone	ND		390	480
Benzene	ND		4.6	95
Bromodichloromethane	ND		19	95
Bromoform	ND		48	95
Bromomethane	ND		21	95
Carbon disulfide	ND		43	95
Carbon tetrachloride	ND		24	95
Chlorobenzene	ND		13	95
Dibromochloromethane	ND		46	95
Chloroethane	ND		20	95
Chloroform	ND		65	95
Chloromethane	ND		23	95
cis-1,2-Dichloroethene	ND		26	95
cis-1,3-Dichloropropene	ND		23	95
Cyclohexane	ND		21	95
Dichlorodifluoromethane	ND		42	95
Ethylbenzene	ND		28	95
Isopropylbenzene	ND		14	95
Methyl acetate	ND		45	95
Methyl tert-butyl ether	ND		36	95
Methylcyclohexane	ND		45	95
Methylene Chloride	ND		19	95
Styrene	ND		23	95
Tetrachloroethene	ND		13	95
Toluene	ND		26	95
trans-1,2-Dichloroethene	ND		22	95
trans-1,3-Dichloropropene	ND		4.6	95
Trichloroethene	ND		26	95

Method Blank - Batch: 480-58304

Method: 8260B
Preparation: 5035

Lab Sample ID:	MB 480-58304/2-A	Analysis Batch:	480-58389	Instrument ID:	HP5973G
Client Matrix:	Solid	Prep Batch:	480-58304	Lab File ID:	G10706.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5.25 g
Analysis Date:	04/06/2012 0529	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Trichlorofluoromethane	ND		45	95
Vinyl chloride	ND		32	95
Xylenes, Total	ND		16	190

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113	53 - 146
Toluene-d8 (Surr)	136	50 - 149
4-Bromofluorobenzene (Surr)	129	49 - 148

Lab Control Sample - Batch: 480-58304

Method: 8260B
Preparation: 5035

Lab Sample ID:	LCS 480-58304/1-A	Analysis Batch:	480-58389	Instrument ID:	HP5973G
Client Matrix:	Solid	Prep Batch:	480-58304	Lab File ID:	G10705.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5.03 g
Analysis Date:	04/06/2012 0507	Units:	ug/Kg	Final Weight/Volume:	10 mL
Prep Date:	04/05/2012 1045				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethane	2490	3380	136		
1,1-Dichloroethene	2490	1650	66	54 - 144	
1,2-Dichlorobenzene	2490	3140	126		
1,2-Dichloroethane	2490	2700	109		
Benzene	2490	3190	128	75 - 131	
Chlorobenzene	2490	3150	127	80 - 127	
cis-1,2-Dichloroethene	2490	3480	140		
Ethylbenzene	2490	3340	134		
Methyl tert-butyl ether	2490	2900	117		
Tetrachloroethene	2490	3320	134		
Toluene	2490	3240	130	76 - 133	
trans-1,2-Dichloroethene	2490	3130	126		
Trichloroethene	2490	3090	124	77 - 130	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	120	53 - 146
Toluene-d8 (Surr)	139	50 - 149
4-Bromofluorobenzene (Surr)	133	49 - 148

Quality Control Results

Client: CHA Inc

Job Number: 480-18049-1

Method Blank - Batch: 480-58395

Method: 8260B
Preparation: N/A

Lab Sample ID:	MB 480-58395/7	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	F7826.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	04/05/2012 2221	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1,1-Trichloroethane	ND		0.36	5.0
1,1,2,2-Tetrachloroethane	ND		0.81	5.0
1,1,2-Trichloroethane	ND		0.65	5.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.1	5.0
1,1-Dichloroethane	ND		0.61	5.0
1,1-Dichloroethene	ND		0.61	5.0
1,2,4-Trichlorobenzene	ND		0.30	5.0
1,2-Dibromo-3-Chloropropane	ND		2.5	5.0
1,2-Dibromoethane	ND		0.64	5.0
1,2-Dichlorobenzene	ND		0.39	5.0
1,2-Dichloroethane	ND		0.25	5.0
1,2-Dichloropropane	ND		2.5	5.0
1,3-Dichlorobenzene	ND		0.26	5.0
1,4-Dichlorobenzene	ND		0.70	5.0
2-Hexanone	ND		2.5	25
2-Butanone (MEK)	ND		1.8	25
4-Methyl-2-pentanone (MIBK)	ND		1.6	25
Acetone	ND		4.2	25
Benzene	ND		0.25	5.0
Bromodichloromethane	ND		0.67	5.0
Bromoform	ND		2.5	5.0
Bromomethane	ND		0.45	5.0
Carbon disulfide	ND		2.5	5.0
Carbon tetrachloride	ND		0.48	5.0
Chlorobenzene	ND		0.66	5.0
Dibromochloromethane	ND		0.64	5.0
Chloroethane	ND		1.1	5.0
Chloroform	ND		0.31	5.0
Chloromethane	ND		0.30	5.0
cis-1,2-Dichloroethene	ND		0.64	5.0
cis-1,3-Dichloropropene	ND		0.72	5.0
Cyclohexane	ND		0.70	5.0
Dichlorodifluoromethane	ND		0.41	5.0
Ethylbenzene	ND		0.35	5.0
Isopropylbenzene	ND		0.75	5.0
Methyl acetate	ND		0.93	5.0
Methyl tert-butyl ether	ND		0.49	5.0
Methylcyclohexane	ND		0.76	5.0
Methylene Chloride	ND		2.3	5.0
Styrene	ND		0.25	5.0
Tetrachloroethene	ND		0.67	5.0
Toluene	ND		0.38	5.0
trans-1,2-Dichloroethene	ND		0.52	5.0
trans-1,3-Dichloropropene	ND		2.2	5.0
Trichloroethene	ND		1.1	5.0

Method Blank - Batch: 480-58395

Method: 8260B
Preparation: N/A

Lab Sample ID:	MB 480-58395/7	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	F7826.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	04/05/2012 2221	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Trichlorofluoromethane	ND		0.47	5.0
Vinyl chloride	ND		0.61	5.0
Xylenes, Total	0.907	J	0.84	10

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	95	64 - 126
Toluene-d8 (Surr)	107	71 - 125
4-Bromofluorobenzene (Surr)	104	72 - 126

Lab Control Sample - Batch: 480-58395

Method: 8260B
Preparation: N/A

Lab Sample ID:	LCS 480-58395/6	Analysis Batch:	480-58395	Instrument ID:	HP5973F
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	F7825.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	04/05/2012 2156	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethane	50.0	46.2	92	79 - 126	
1,1-Dichloroethene	50.0	44.1	88	65 - 153	
1,2-Dichlorobenzene	50.0	49.2	98	75 - 120	
1,2-Dichloroethane	50.0	43.3	87	77 - 122	
Benzene	50.0	47.9	96	79 - 127	
Chlorobenzene	50.0	50.4	101	76 - 124	
cis-1,2-Dichloroethene	50.0	47.2	94	81 - 117	
Ethylbenzene	50.0	50.5	101	80 - 120	
Methyl tert-butyl ether	50.0	42.4	85	63 - 125	
Tetrachloroethene	50.0	53.4	107	74 - 122	
Toluene	50.0	50.1	100	74 - 128	
trans-1,2-Dichloroethene	50.0	49.9	100	78 - 126	
Trichloroethene	50.0	47.4	95	77 - 129	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	92	64 - 126
Toluene-d8 (Surr)	107	71 - 125
4-Bromofluorobenzene (Surr)	105	72 - 126

Method Blank - Batch: 480-58428

Method: 8260B
Preparation: N/A

Lab Sample ID:	MB 480-58428/6	Analysis Batch:	480-58428	Instrument ID:	HP5973F
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	F7854.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	04/06/2012 1032	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1,1-Trichloroethane	ND		0.36	5.0
1,1,2,2-Tetrachloroethane	ND		0.81	5.0
1,1,2-Trichloroethane	ND		0.65	5.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.1	5.0
1,1-Dichloroethane	ND		0.61	5.0
1,1-Dichloroethene	ND		0.61	5.0
1,2,4-Trichlorobenzene	ND		0.30	5.0
1,2-Dibromo-3-Chloropropane	ND		2.5	5.0
1,2-Dibromoethane	ND		0.64	5.0
1,2-Dichlorobenzene	ND		0.39	5.0
1,2-Dichloroethane	ND		0.25	5.0
1,2-Dichloropropane	ND		2.5	5.0
1,3-Dichlorobenzene	ND		0.26	5.0
1,4-Dichlorobenzene	ND		0.70	5.0
2-Hexanone	ND		2.5	25
2-Butanone (MEK)	ND		1.8	25
4-Methyl-2-pentanone (MIBK)	ND		1.6	25
Acetone	ND		4.2	25
Benzene	ND		0.25	5.0
Bromodichloromethane	ND		0.67	5.0
Bromoform	ND		2.5	5.0
Bromomethane	ND		0.45	5.0
Carbon disulfide	ND		2.5	5.0
Carbon tetrachloride	ND		0.48	5.0
Chlorobenzene	ND		0.66	5.0
Dibromochloromethane	ND		0.64	5.0
Chloroethane	ND		1.1	5.0
Chloroform	ND		0.31	5.0
Chloromethane	ND		0.30	5.0
cis-1,2-Dichloroethene	ND		0.64	5.0
cis-1,3-Dichloropropene	ND		0.72	5.0
Cyclohexane	ND		0.70	5.0
Dichlorodifluoromethane	ND		0.41	5.0
Ethylbenzene	ND		0.35	5.0
Isopropylbenzene	ND		0.75	5.0
Methyl acetate	ND		0.93	5.0
Methyl tert-butyl ether	ND		0.49	5.0
Methylcyclohexane	ND		0.76	5.0
Methylene Chloride	ND		2.3	5.0
Styrene	ND		0.25	5.0
Tetrachloroethene	ND		0.67	5.0
Toluene	ND		0.38	5.0
trans-1,2-Dichloroethene	ND		0.52	5.0
trans-1,3-Dichloropropene	ND		2.2	5.0
Trichloroethene	ND		1.1	5.0

Quality Control Results

Client: CHA Inc

Job Number: 480-18049-1

Method Blank - Batch: 480-58428

Method: 8260B
Preparation: N/A

Lab Sample ID:	MB 480-58428/6	Analysis Batch:	480-58428	Instrument ID:	HP5973F
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	F7854.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	04/06/2012 1032	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Trichlorofluoromethane	ND		0.47	5.0
Vinyl chloride	ND		0.61	5.0
Xylenes, Total	ND		0.84	10

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	90	64 - 126
Toluene-d8 (Surr)	108	71 - 125
4-Bromofluorobenzene (Surr)	102	72 - 126

Lab Control Sample - Batch: 480-58428

Method: 8260B
Preparation: N/A

Lab Sample ID:	LCS 480-58428/5	Analysis Batch:	480-58428	Instrument ID:	HP5973F
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	F7853.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	04/06/2012 1005	Units:	ug/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethane	50.0	43.7	87	79 - 126	
1,1-Dichloroethene	50.0	40.4	81	65 - 153	
1,2-Dichlorobenzene	50.0	47.6	95	75 - 120	
1,2-Dichloroethane	50.0	41.7	83	77 - 122	
Benzene	50.0	45.3	91	79 - 127	
Chlorobenzene	50.0	48.2	96	76 - 124	
cis-1,2-Dichloroethene	50.0	45.0	90	81 - 117	
Ethylbenzene	50.0	48.0	96	80 - 120	
Methyl tert-butyl ether	50.0	39.8	80	63 - 125	
Tetrachloroethene	50.0	49.9	100	74 - 122	
Toluene	50.0	48.1	96	74 - 128	
trans-1,2-Dichloroethene	50.0	47.3	95	78 - 126	
Trichloroethene	50.0	44.4	89	77 - 129	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	92	64 - 126
Toluene-d8 (Surr)	109	71 - 125
4-Bromofluorobenzene (Surr)	106	72 - 126

Method Blank - Batch: 480-58568

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 480-58568/5	Analysis Batch:	480-58568	Instrument ID:	HP5973G
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	G10751.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	04/07/2012 0026	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	04/07/2012 0026				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,1-Dichloroethene	ND		0.00029	0.0010
1,2-Dichloroethane	ND		0.00021	0.0010
2-Butanone (MEK)	ND		0.0013	0.0050
Benzene	ND		0.00041	0.0010
Carbon tetrachloride	ND		0.00027	0.0010
Chlorobenzene	ND		0.00075	0.0010
Chloroform	ND		0.00034	0.0010
Tetrachloroethene	ND		0.00036	0.0010
Trichloroethene	ND		0.00046	0.0010
Vinyl chloride	ND		0.00090	0.0010

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101	66 - 137
Toluene-d8 (Surr)	108	71 - 126
4-Bromofluorobenzene (Surr)	108	73 - 120

TCLP SPLPE Leachate Blank - Batch: 480-58568

Method: 8260B
Preparation: 5030B
TCLP

Lab Sample ID:	LB 480-58276/1-A	Analysis Batch:	480-58568	Instrument ID:	HP5973G
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	G10757.D
Dilution:	10	Leach Batch:	480-58276	Initial Weight/Volume:	5 mL
Analysis Date:	04/07/2012 0259	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	04/07/2012 0259				
Leach Date:	04/05/2012 1014				

Analyte	Result	Qual	MDL	RL
1,1-Dichloroethene	ND		0.0029	0.010
1,2-Dichloroethane	ND		0.0021	0.010
2-Butanone (MEK)	ND		0.013	0.050
Benzene	ND		0.0041	0.010
Carbon tetrachloride	ND		0.0027	0.010
Chlorobenzene	ND		0.0075	0.010
Chloroform	ND		0.0034	0.010
Tetrachloroethene	ND		0.0036	0.010
Trichloroethene	ND		0.0046	0.010
Vinyl chloride	ND		0.0090	0.010

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	97	66 - 137
Toluene-d8 (Surr)	108	71 - 126
4-Bromofluorobenzene (Surr)	106	73 - 120

Quality Control Results

Client: CHA Inc

Job Number: 480-18049-1

Lab Control Sample - Batch: 480-58568

Method: 8260B
Preparation: 5030B

Lab Sample ID:	LCS 480-58568/4	Analysis Batch:	480-58568	Instrument ID:	HP5973G
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	G10750.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	04/07/2012 0003	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	04/07/2012 0003				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1-Dichloroethene	0.0250	0.0196	78	65 - 138	
1,2-Dichloroethane	0.0250	0.0230	92	75 - 127	
Benzene	0.0250	0.0252	101	71 - 124	
Chlorobenzene	0.0250	0.0251	100	72 - 120	
Tetrachloroethene	0.0250	0.0249	100	74 - 122	
Trichloroethene	0.0250	0.0246	98	74 - 123	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100	66 - 137
Toluene-d8 (Surr)	109	71 - 126
4-Bromofluorobenzene (Surr)	108	73 - 120

Quality Control Results

Client: CHA Inc

Job Number: 480-18049-1

Method Blank - Batch: 480-58238

Method: 8270C
Preparation: 3550B

Lab Sample ID:	MB 480-58238/1-A	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Client Matrix:	Solid	Prep Batch:	480-58238	Lab File ID:	V8771.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	+30.75 g
Analysis Date:	04/09/2012 1928	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Biphenyl	ND		10	170
bis (2-chloroisopropyl) ether	ND		17	170
2,4-Dichlorophenol	ND		8.6	170
2,4-Dimethylphenol	ND		44	170
2,4-Dinitrophenol	ND		58	320
2,4-Dinitrotoluene	ND		25	170
2,6-Dinitrotoluene	ND		40	170
2-Chloronaphthalene	ND		11	170
2-Chlorophenol	ND		8.4	170
2,4,5-Trichlorophenol	ND		36	170
2-Methylnaphthalene	ND		2.0	170
2,4,6-Trichlorophenol	ND		11	170
2-Methylphenol	ND		5.1	170
2-Nitroaniline	ND		53	320
2-Nitrophenol	ND		7.5	170
3,3'-Dichlorobenzidine	ND		140	170
3-Nitroaniline	ND		38	320
4,6-Dinitro-2-methylphenol	ND		57	320
4-Bromophenyl phenyl ether	ND		52	170
4-Chloro-3-methylphenol	ND		6.8	170
4-Chloroaniline	ND		48	170
4-Chlorophenyl phenyl ether	ND		3.5	170
4-Methylphenol	ND		9.2	320
4-Nitroaniline	ND		18	320
4-Nitrophenol	ND		40	320
Acenaphthene	ND		1.9	170
Acenaphthylene	ND		1.3	170
Acetophenone	ND		8.5	170
Anthracene	ND		4.2	170
Atrazine	ND		7.3	170
Benzaldehyde	ND		18	170
Benzo(a)anthracene	ND		2.8	170
Benzo(a)pyrene	ND		4.0	170
Benzo(b)fluoranthene	ND		3.2	170
Benzo(g,h,i)perylene	ND		2.0	170
Benzo(k)fluoranthene	4.53	J	1.8	170
Bis(2-chloroethoxy)methane	ND		9.0	170
Bis(2-chloroethyl)ether	ND		14	170
Bis(2-ethylhexyl) phthalate	ND		53	170
Butyl benzyl phthalate	ND		44	170
Caprolactam	ND		71	170
Carbazole	ND		1.9	170
Chrysene	6.18	J	1.6	170
Di-n-butyl phthalate	ND		57	170
Di-n-octyl phthalate	ND		3.9	170

Quality Control Results

Client: CHA Inc

Job Number: 480-18049-1

Method Blank - Batch: 480-58238

Method: 8270C
Preparation: 3550B

Lab Sample ID:	MB 480-58238/1-A	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Client Matrix:	Solid	Prep Batch:	480-58238	Lab File ID:	V8771.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	+30.75 g
Analysis Date:	04/09/2012 1928	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Dibenz(a,h)anthracene	ND		1.9	170
Dibenzofuran	ND		1.7	170
Diethyl phthalate	ND		5.0	170
Dimethyl phthalate	ND		4.3	170
Fluoranthene	ND		2.4	170
Fluorene	ND		3.8	170
Hexachlorobenzene	ND		8.2	170
Hexachlorobutadiene	ND		8.4	170
Hexachlorocyclopentadiene	ND		50	170
Hexachloroethane	ND		13	170
Indeno(1,2,3-cd)pyrene	ND		4.6	170
Isophorone	ND		8.2	170
N-Nitrosodi-n-propylamine	ND		13	170
N-Nitrosodiphenylamine	ND		9.0	170
Naphthalene	ND		2.7	170
Nitrobenzene	ND		7.3	170
Pentachlorophenol	ND		56	320
Phenanthrene	ND		3.5	170
Phenol	ND		17	170
Pyrene	ND		1.1	170

Surrogate	% Rec	Acceptance Limits
2,4,6-Tribromophenol	113	39 - 146
2-Fluorobiphenyl	103	37 - 120
2-Fluorophenol	89	18 - 120
Nitrobenzene-d5	98	34 - 132
p-Terphenyl-d14	121	65 - 153
Phenol-d5	90	11 - 120

Quality Control Results

Client: CHA Inc

Job Number: 480-18049-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 480-58238

Method: 8270C
Preparation: 3550B

LCS Lab Sample ID:	LCS 480-58238/2-A	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Client Matrix:	Solid	Prep Batch:	480-58238	Lab File ID:	V8772.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	+30.18 g
Analysis Date:	04/09/2012 1952	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 480-58238/3-A	Analysis Batch:	480-58695	Instrument ID:	HP5973V
Client Matrix:	Solid	Prep Batch:	480-58238	Lab File ID:	V8773.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	+30.74 g
Analysis Date:	04/09/2012 2016	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0828			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
2,4-Dinitrotoluene	125	130	55 - 125	2	20		*
2-Chlorophenol	94	100	38 - 120	5	25		
4-Chloro-3-methylphenol	112	115	49 - 125	1	27		
4-Nitrophenol	116	110	43 - 137	7	25		
Acenaphthene	112	111	53 - 120	3	35		
Bis(2-ethylhexyl) phthalate	116	127	61 - 133	7	15		
Fluorene	118	118	63 - 126	2	15		
Hexachloroethane	94	98	41 - 120	2	46		
N-Nitrosodi-n-propylamine	109	115	46 - 120	4	31		
Pentachlorophenol	119	120	33 - 136	1	35		
Phenol	99	100	36 - 120	0	35		
Pyrene	110	119	51 - 133	7	35		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
2,4,6-Tribromophenol	124	133	39 - 146
2-Fluorobiphenyl	101	104	37 - 120
2-Fluorophenol	90	94	18 - 120
Nitrobenzene-d5	98	99	34 - 132
p-Terphenyl-d14	117	129	65 - 153
Phenol-d5	93	96	11 - 120

Quality Control Results

Client: CHA Inc

Job Number: 480-18049-1

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 480-58238

Method: 8270C
Preparation: 3550B

LCS Lab Sample ID:	LCS 480-58238/2-A	Units: ug/Kg		LCSD Lab Sample ID:	LCSD 480-58238/3-A
Client Matrix:	Solid			Client Matrix:	Solid
Dilution:	1.0			Dilution:	1.0
Analysis Date:	04/09/2012 1952			Analysis Date:	04/09/2012 2016
Prep Date:	04/05/2012 0828			Prep Date:	04/05/2012 0828
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual	
2,4-Dinitrotoluene	3310	3250	4150	4220	*
2-Chlorophenol	3310	3250	3100	3250	
4-Chloro-3-methylphenol	3310	3250	3700	3730	
4-Nitrophenol	3310	3250	3830	3580	
Acenaphthene	3310	3250	3720	3620	
Bis(2-ethylhexyl) phthalate	3310	3250	3840	4140	
Fluorene	3310	3250	3920	3840	
Hexachloroethane	3310	3250	3120	3190	
N-Nitrosodi-n-propylamine	3310	3250	3610	3750	
Pentachlorophenol	3310	3250	3940	3890	
Phenol	3310	3250	3270	3260	
Pyrene	3310	3250	3630	3880	

Quality Control Results

Client: CHA Inc   Job Number: 480-18049-1

Method Blank - Batch: 480-58249

Method: 8270C
Preparation: 3550B

Lab Sample ID:	MB 480-58249/1-A	Analysis Batch:	480-58452	Instrument ID:	HP5973V
Client Matrix:	Solid	Prep Batch:	480-58249	Lab File ID:	V8606.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	+30.75 g
Analysis Date:	04/06/2012 1233	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0837			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Biphenyl	ND		10	170
bis (2-chloroisopropyl) ether	ND		17	170
2,4-Dichlorophenol	ND		8.6	170
2,4-Dimethylphenol	ND		44	170
2,4-Dinitrophenol	ND		58	320
2,4-Dinitrotoluene	ND		25	170
2,6-Dinitrotoluene	ND		40	170
2-Chloronaphthalene	ND		11	170
2-Chlorophenol	ND		8.4	170
2,4,5-Trichlorophenol	ND		36	170
2-Methylnaphthalene	ND		2.0	170
2,4,6-Trichlorophenol	ND		11	170
2-Methylphenol	ND		5.1	170
2-Nitroaniline	ND		53	320
2-Nitrophenol	ND		7.5	170
3,3'-Dichlorobenzidine	ND		140	170
3-Nitroaniline	ND		38	320
4,6-Dinitro-2-methylphenol	ND		57	320
4-Bromophenyl phenyl ether	ND		52	170
4-Chloro-3-methylphenol	ND		6.8	170
4-Chloroaniline	ND		48	170
4-Chlorophenyl phenyl ether	ND		3.5	170
4-Methylphenol	ND		9.2	320
4-Nitroaniline	ND		18	320
4-Nitrophenol	ND		40	320
Acenaphthene	ND		1.9	170
Acenaphthylene	ND		1.3	170
Acetophenone	ND		8.5	170
Anthracene	ND		4.2	170
Atrazine	ND		7.3	170
Benzaldehyde	ND		18	170
Benzo(a)anthracene	ND		2.8	170
Benzo(a)pyrene	ND		4.0	170
Benzo(b)fluoranthene	ND		3.2	170
Benzo(g,h,i)perylene	ND		2.0	170
Benzo(k)fluoranthene	ND		1.8	170
Bis(2-chloroethoxy)methane	ND		9.0	170
Bis(2-chloroethyl)ether	ND		14	170
Bis(2-ethylhexyl) phthalate	ND		53	170
Butyl benzyl phthalate	ND		44	170
Caprolactam	ND		71	170
Carbazole	ND		1.9	170
Chrysene	ND		1.6	170
Di-n-butyl phthalate	ND		57	170
Di-n-octyl phthalate	ND		3.9	170

Method Blank - Batch: 480-58249

Method: 8270C
Preparation: 3550B

Lab Sample ID:	MB 480-58249/1-A	Analysis Batch:	480-58452	Instrument ID:	HP5973V
Client Matrix:	Solid	Prep Batch:	480-58249	Lab File ID:	V8606.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	+30.75 g
Analysis Date:	04/06/2012 1233	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0837			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Dibenz(a,h)anthracene	ND		1.9	170
Dibenzofuran	ND		1.7	170
Diethyl phthalate	ND		5.0	170
Dimethyl phthalate	ND		4.3	170
Fluoranthene	ND		2.4	170
Fluorene	ND		3.8	170
Hexachlorobenzene	ND		8.2	170
Hexachlorobutadiene	ND		8.4	170
Hexachlorocyclopentadiene	ND		50	170
Hexachloroethane	ND		13	170
Indeno(1,2,3-cd)pyrene	ND		4.6	170
Isophorone	ND		8.2	170
N-Nitrosodi-n-propylamine	ND		13	170
N-Nitrosodiphenylamine	ND		9.0	170
Naphthalene	ND		2.7	170
Nitrobenzene	ND		7.3	170
Pentachlorophenol	ND		56	320
Phenanthrene	ND		3.5	170
Phenol	ND		17	170
Pyrene	ND		1.1	170

Surrogate	% Rec	Acceptance Limits
2,4,6-Tribromophenol	86	39 - 146
2-Fluorobiphenyl	89	37 - 120
2-Fluorophenol	73	18 - 120
Nitrobenzene-d5	73	34 - 132
p-Terphenyl-d14	110	65 - 153
Phenol-d5	77	11 - 120

Quality Control Results

Client: CHA Inc

Job Number: 480-18049-1

Lab Control Sample - Batch: 480-58249

Method: 8270C
Preparation: 3550B

Lab Sample ID:	LCS 480-58249/2-A	Analysis Batch:	480-58452	Instrument ID:	HP5973V
Client Matrix:	Solid	Prep Batch:	480-58249	Lab File ID:	V8607.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	+30.32 g
Analysis Date:	04/06/2012 1257	Units:	ug/Kg	Final Weight/Volume:	1 mL
Prep Date:	04/05/2012 0837			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
2,4-Dinitrotoluene	3300	3590	109	55 - 125	
2-Chlorophenol	3300	2830	86	38 - 120	
4-Chloro-3-methylphenol	3300	3390	103	49 - 125	
4-Nitrophenol	3300	2710	82	43 - 137	
Acenaphthene	3300	3300	100	53 - 120	
Bis(2-ethylhexyl) phthalate	3300	3560	108	61 - 133	
Fluorene	3300	3550	108	63 - 126	
Hexachloroethane	3300	2600	79	41 - 120	
N-Nitrosodi-n-propylamine	3300	3110	94	46 - 120	
Pentachlorophenol	3300	3080	93	33 - 136	
Phenol	3300	3010	91	36 - 120	
Pyrene	3300	3640	110	51 - 133	

Surrogate	% Rec	Acceptance Limits
2,4,6-Tribromophenol	103	39 - 146
2-Fluorobiphenyl	94	37 - 120
2-Fluorophenol	82	18 - 120
Nitrobenzene-d5	85	34 - 132
p-Terphenyl-d14	110	65 - 153
Phenol-d5	86	11 - 120

Method Blank - Batch: 480-58531

Method: 8270C
Preparation: 3510C

Lab Sample ID:	MB 480-58531/1-A	Analysis Batch:	480-58601	Instrument ID:	HP5973V
Client Matrix:	Water	Prep Batch:	480-58531	Lab File ID:	V8643.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	04/07/2012 1517	Units:	mg/L	Final Weight/Volume:	1 mL
Prep Date:	04/06/2012 1352			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
1,4-Dichlorobenzene	ND		0.00012	0.0025
3-Methylphenol	ND		0.00010	0.0025
2,4-Dinitrotoluene	ND		0.00011	0.0013
Pyridine	ND		0.00010	0.0063
2,4,5-Trichlorophenol	ND		0.00012	0.0013
2,4,6-Trichlorophenol	ND		0.00015	0.0013
2-Methylphenol	ND		0.00010	0.0013
4-Methylphenol	ND		0.000090	0.0025
Hexachlorobenzene	ND		0.00013	0.0013
Hexachlorobutadiene	ND		0.00017	0.0013
Hexachloroethane	ND		0.00015	0.0013
Nitrobenzene	ND		0.000073	0.0013
Pentachlorophenol	ND		0.00055	0.0025

Surrogate	% Rec	Acceptance Limits
2,4,6-Tribromophenol	93	52 - 132
2-Fluorobiphenyl	81	48 - 120
2-Fluorophenol	41	20 - 120
Nitrobenzene-d5	65	46 - 120
p-Terphenyl-d14	112	67 - 150
Phenol-d5	27	16 - 120

TCLP SPLPE Leachate Blank - Batch: 480-58531

Method: 8270C
Preparation: 3510C
TCLP

Lab Sample ID:	LB 480-58275/13-D	Analysis Batch:	480-58601	Instrument ID:	HP5973V
Client Matrix:	Solid	Prep Batch:	480-58531	Lab File ID:	V8646.D
Dilution:	1.0	Leach Batch:	480-58275	Initial Weight/Volume:	250 mL
Analysis Date:	04/07/2012 1629	Units:	mg/L	Final Weight/Volume:	1 mL
Prep Date:	04/06/2012 1352			Injection Volume:	1 uL
Leach Date:	04/05/2012 1009				

Analyte	Result	Qual	MDL	RL
1,4-Dichlorobenzene	ND		0.00046	0.010
3-Methylphenol	ND		0.00040	0.010
2,4-Dinitrotoluene	ND		0.00045	0.0050
Pyridine	ND		0.00041	0.025
2,4,5-Trichlorophenol	ND		0.00048	0.0050
2,4,6-Trichlorophenol	ND		0.00061	0.0050
2-Methylphenol	ND		0.00040	0.0050
4-Methylphenol	ND		0.00036	0.010
Hexachlorobenzene	ND		0.00051	0.0050
Hexachlorobutadiene	ND		0.00068	0.0050
Hexachloroethane	ND		0.00059	0.0050
Nitrobenzene	ND		0.00029	0.0050
Pentachlorophenol	ND		0.0022	0.010

Surrogate	% Rec	Acceptance Limits
2,4,6-Tribromophenol	98	52 - 132
2-Fluorobiphenyl	89	48 - 120
2-Fluorophenol	39	20 - 120
Nitrobenzene-d5	75	46 - 120
p-Terphenyl-d14	120	67 - 150
Phenol-d5	27	16 - 120

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 480-58531

Method: 8270C
Preparation: 3510C

LCS Lab Sample ID:	LCS 480-58531/2-A	Analysis Batch:	480-58601	Instrument ID:	HP5973V
Client Matrix:	Water	Prep Batch:	480-58531	Lab File ID:	V8644.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	04/07/2012 1541	Units:	mg/L	Final Weight/Volume:	1 mL
Prep Date:	04/06/2012 1352			Injection Volume:	1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 480-58531/3-A	Analysis Batch:	480-58601	Instrument ID:	HP5973V
Client Matrix:	Water	Prep Batch:	480-58531	Lab File ID:	V8645.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1000 mL
Analysis Date:	04/07/2012 1605	Units:	mg/L	Final Weight/Volume:	1 mL
Prep Date:	04/06/2012 1352			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
1,4-Dichlorobenzene	65	74	32 - 120	13	36		
2,4-Dinitrotoluene	112	112	59 - 125	0	20		
Hexachloroethane	57	70	25 - 120	19	46		
Pentachlorophenol	98	110	39 - 136	11	37		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
2,4,6-Tribromophenol	106	116	52 - 132
2-Fluorobiphenyl	91	97	48 - 120
2-Fluorophenol	45	54	20 - 120
Nitrobenzene-d5	76	88	46 - 120
p-Terphenyl-d14	113	122	67 - 150
Phenol-d5	33	37	16 - 120

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 480-58531

Method: 8270C
Preparation: 3510C

LCS Lab Sample ID:	LCS 480-58531/2-A	Units:	mg/L	LCSD Lab Sample ID:	LCSD 480-58531/3-A
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	04/07/2012 1541			Analysis Date:	04/07/2012 1605
Prep Date:	04/06/2012 1352			Prep Date:	04/06/2012 1352
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
1,4-Dichlorobenzene	0.100	0.100	0.0645	0.0736
2,4-Dinitrotoluene	0.100	0.100	0.112	0.112
Hexachloroethane	0.100	0.100	0.0573	0.0696
Pentachlorophenol	0.100	0.100	0.0983	0.110

TCLP SPLPE Leachate Blank - Batch: 480-58480

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	LB 480-58275/13-C	Analysis Batch:	480-58666	Instrument ID:	ICAP2
Client Matrix:	Solid	Prep Batch:	480-58480	Lab File ID:	I2040612A-5.asc
Dilution:	1.0	Leach Batch:	480-58275	Initial Weight/Volume:	50 mL
Analysis Date:	04/06/2012 1901	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1050				
Leach Date:	04/05/2012 1009				

Analyte	Result	Qual	MDL	RL
Arsenic	ND		0.0056	0.010
Barium	0.0277		0.00070	0.0020
Cadmium	ND		0.00050	0.0010
Chromium	0.00228	J	0.0010	0.0040
Lead	ND		0.0030	0.0050
Selenium	ND		0.0087	0.015
Silver	ND		0.0017	0.0030

Method Blank - Batch: 480-58480

Method: 6010B
Preparation: 3010A

Lab Sample ID:	MB 480-58480/2-A	Analysis Batch:	480-58666	Instrument ID:	ICAP2
Client Matrix:	Water	Prep Batch:	480-58480	Lab File ID:	I2040612A-5.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/06/2012 1903	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1050				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Arsenic	ND		0.0056	0.010
Barium	ND		0.00070	0.0020
Cadmium	ND		0.00050	0.0010
Chromium	ND		0.0010	0.0040
Lead	ND		0.0030	0.0050
Selenium	ND		0.0087	0.015
Silver	ND		0.0017	0.0030

Lab Control Sample - Batch: 480-58480

Method: 6010B
Preparation: 3010A

Lab Sample ID:	LCS 480-58480/3-A	Analysis Batch:	480-58666	Instrument ID:	ICAP2
Client Matrix:	Water	Prep Batch:	480-58480	Lab File ID:	I2040612A-5.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50 mL
Analysis Date:	04/06/2012 1906	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1050				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	1.00	1.10	110	80 - 120	
Barium	1.00	1.05	105	80 - 120	
Cadmium	1.00	1.04	104	80 - 120	
Chromium	1.00	1.03	103	80 - 120	
Lead	1.00	1.03	103	80 - 120	
Selenium	1.00	1.08	108	80 - 120	
Silver	1.00	1.06	106	80 - 120	

Post Digestion Spike - Batch: 480-58480

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	480-18049-3	Analysis Batch:	480-58666	Instrument ID:	ICAP2
Client Matrix:	Solid	Prep Batch:	480-58480	Lab File ID:	I2040612A-5.asc
Dilution:	1.0	Leach Batch:	480-58275	Initial Weight/Volume:	50 mL
Analysis Date:	04/06/2012 1916	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1050				
Leach Date:	04/05/2012 1009				

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	ND	1.00	1.11	111	75 - 125	
Barium	0.33	1.00	1.40	107	75 - 125	
Cadmium	0.0016	1.00	1.08	107	75 - 125	
Chromium	0.0086	1.00	1.05	104	75 - 125	
Lead	0.036	1.00	1.11	108	75 - 125	
Selenium	ND	1.00	1.11	111	75 - 125	
Silver	ND	1.00	1.09	109	75 - 125	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 480-58480

Method: 6010B
Preparation: 3010A
TCLP

MS Lab Sample ID:	480-18049-3	Analysis Batch:	480-58666	Instrument ID:	ICAP2
Client Matrix:	Solid	Prep Batch:	480-58480	Lab File ID:	I2040612A-5.asc
Dilution:	1.0	Leach Batch:	480-58275	Initial Weight/Volume:	50 mL
Analysis Date:	04/06/2012 1919			Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1050				
Leach Date:	04/05/2012 1009				

MSD Lab Sample ID:	480-18049-3	Analysis Batch:	480-58666	Instrument ID:	ICAP2
Client Matrix:	Solid	Prep Batch:	480-58480	Lab File ID:	I2040612A-5.asc
Dilution:	1.0	Leach Batch:	480-58275	Initial Weight/Volume:	50 mL
Analysis Date:	04/06/2012 1921			Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1050				
Leach Date:	04/05/2012 1009				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Arsenic	109	108	75 - 125	1	20		
Barium	102	100	75 - 125	1	20		
Cadmium	104	103	75 - 125	1	20		
Chromium	101	100	75 - 125	1	20		
Lead	103	102	75 - 125	1	20		
Selenium	107	106	75 - 125	1	20		
Silver	107	106	75 - 125	1	20		

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 480-58480

Method: 6010B
Preparation: 3010A
TCLP

MS Lab Sample ID:	480-18049-3	Units:	mg/L	MSD Lab Sample ID:	480-18049-3
Client Matrix:	Solid			Client Matrix:	Solid
Dilution:	1.0			Dilution:	1.0
Analysis Date:	04/06/2012 1919			Analysis Date:	04/06/2012 1921
Prep Date:	04/06/2012 1050			Prep Date:	04/06/2012 1050
Leach Date:	04/05/2012 1009			Leach Date:	04/05/2012 1009

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Arsenic	ND	1.00	1.00	1.09	1.08
Barium	0.33	1.00	1.00	1.35	1.33
Cadmium	0.0016	1.00	1.00	1.04	1.03
Chromium	0.0086	1.00	1.00	1.02	1.01
Lead	0.036	1.00	1.00	1.07	1.06
Selenium	ND	1.00	1.00	1.07	1.06
Silver	ND	1.00	1.00	1.07	1.06

Quality Control Results

Client: CHA Inc

Job Number: 480-18049-1

Serial Dilution - Batch: 480-58480

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID:	480-18049-3	Analysis Batch:	480-58666	Instrument ID:	ICAP2
Client Matrix:	Solid	Prep Batch:	480-58480	Lab File ID:	I2040612A-5.asc
Dilution:	5.0	Leach Batch:	480-58275	Initial Weight/Volume:	50 mL
Analysis Date:	04/06/2012 1914	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1050				
Leach Date:	04/05/2012 1009				

Analyte	Sample Result/Qual	Result	%Diff	Limit	Qual
Arsenic	ND	ND	NC	10	
Barium	0.33	0.343	5.0	10	
Cadmium	0.0016	ND	NC	10	
Chromium	0.0086	0.0107	NC	10	J
Lead	0.036	0.0303	NC	10	
Selenium	ND	ND	NC	10	
Silver	ND	ND	NC	10	

TCLP SPLPE Leachate Blank - Batch: 480-58479

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID:	LB 480-58275/13-B	Analysis Batch:	480-58543	Instrument ID:	LEEMAN2
Client Matrix:	Solid	Prep Batch:	480-58479	Lab File ID:	H04062TC.PRN
Dilution:	1.0	Leach Batch:	480-58275	Initial Weight/Volume:	30 mL
Analysis Date:	04/06/2012 1333	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1040				
Leach Date:	04/05/2012 1009				

Analyte	Result	Qual	MDL	RL
Mercury	ND		0.00012	0.00020

Method Blank - Batch: 480-58479

Method: 7470A
Preparation: 7470A

Lab Sample ID:	MB 480-58479/2-A	Analysis Batch:	480-58543	Instrument ID:	LEEMAN2
Client Matrix:	Water	Prep Batch:	480-58479	Lab File ID:	H04062TC.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 mL
Analysis Date:	04/06/2012 1335	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1040				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	ND		0.00012	0.00020

Lab Control Sample - Batch: 480-58479

Method: 7470A
Preparation: 7470A

Lab Sample ID:	LCS 480-58479/3-A	Analysis Batch:	480-58543	Instrument ID:	LEEMAN2
Client Matrix:	Water	Prep Batch:	480-58479	Lab File ID:	H04062TC.PRN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30 mL
Analysis Date:	04/06/2012 1337	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1040				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.00668	0.00598	90	80 - 120	

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 480-58479

Method: 7470A
Preparation: 7470A
TCLP

MS Lab Sample ID:	480-18049-3	Analysis Batch:	480-58543	Instrument ID:	LEEMAN2
Client Matrix:	Solid	Prep Batch:	480-58479	Lab File ID:	H04062TC.PRN
Dilution:	1.0	Leach Batch:	480-58275	Initial Weight/Volume:	30 mL
Analysis Date:	04/06/2012 1343			Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1040				
Leach Date:	04/05/2012 1009				

MSD Lab Sample ID:	480-18049-3	Analysis Batch:	480-58543	Instrument ID:	LEEMAN2
Client Matrix:	Solid	Prep Batch:	480-58479	Lab File ID:	H04062TC.PRN
Dilution:	1.0	Leach Batch:	480-58275	Initial Weight/Volume:	30 mL
Analysis Date:	04/06/2012 1344			Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1040				
Leach Date:	04/05/2012 1009				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Mercury	99	98	75 - 125	1	20		

Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 480-58479

Method: 7470A
Preparation: 7470A
TCLP

MS Lab Sample ID:	480-18049-3	Units:	mg/L	MSD Lab Sample ID:	480-18049-3
Client Matrix:	Solid			Client Matrix:	Solid
Dilution:	1.0			Dilution:	1.0
Analysis Date:	04/06/2012 1343			Analysis Date:	04/06/2012 1344
Prep Date:	04/06/2012 1040			Prep Date:	04/06/2012 1040
Leach Date:	04/05/2012 1009			Leach Date:	04/05/2012 1009

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Mercury	ND	0.00668	0.00668	0.00660	0.00655

Serial Dilution - Batch: 480-58479

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID:	480-18049-3	Analysis Batch:	480-58543	Instrument ID:	LEEMAN2
Client Matrix:	Solid	Prep Batch:	480-58479	Lab File ID:	H04062TC.PRN
Dilution:	5.0	Leach Batch:	480-58275	Initial Weight/Volume:	30 mL
Analysis Date:	04/06/2012 1341	Units:	mg/L	Final Weight/Volume:	50 mL
Prep Date:	04/06/2012 1040				
Leach Date:	04/05/2012 1009				

Analyte	Sample Result/Qual	Result	%Diff	Limit	Qual
Mercury	ND	ND	NC	10	

Lab Control Sample - Batch: 480-58632

Method: 1010
Preparation: N/A

Lab Sample ID:	LCS 480-58632/1	Analysis Batch:	480-58632	Instrument ID:	No Equipment
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	04/07/2012 1041	Units:	Degrees F	Final Weight/Volume:	25 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Flashpoint	81.0	80.00	99	97.5 - 102.5	

Quality Control Results

Client: CHA Inc

Job Number: 480-18049-1

Method Blank - Batch: 480-58610

Method: 9012
Preparation: 7.3.3

Lab Sample ID:	MB 480-58610/1-A	Analysis Batch:	480-58611	Instrument ID:	No Equipment
Client Matrix:	Solid	Prep Batch:	480-58610	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	04/07/2012 1053	Units:	mg/Kg	Final Weight/Volume:	5 mL
Prep Date:	04/06/2012 1500				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Cyanide, Reactive	ND		0.0030	10.0

Lab Control Sample - Batch: 480-58610

Method: 9012
Preparation: 7.3.3

Lab Sample ID:	LCS 480-58610/2-A	Analysis Batch:	480-58611	Instrument ID:	No Equipment
Client Matrix:	Solid	Prep Batch:	480-58610	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 g
Analysis Date:	04/07/2012 1053	Units:	mg/Kg	Final Weight/Volume:	5 mL
Prep Date:	04/06/2012 1500				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Cyanide, Reactive	1000	305.0	31	10 - 100	

Method Blank - Batch: 480-58613

Method: 9034
Preparation: 7.3.4

Lab Sample ID:	MB 480-58613/1-A	Analysis Batch:	480-58614	Instrument ID:	No Equipment
Client Matrix:	Solid	Prep Batch:	480-58613	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 g
Analysis Date:	04/06/2012 1900	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	04/06/2012 1500				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Sulfide, Reactive	ND		0.57	10.0

Lab Control Sample - Batch: 480-58613

Method: 9034
Preparation: 7.3.4

Lab Sample ID:	LCS 480-58613/2-A	Analysis Batch:	480-58614	Instrument ID:	No Equipment
Client Matrix:	Solid	Prep Batch:	480-58613	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 g
Analysis Date:	04/06/2012 1900	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	04/06/2012 1500				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfide, Reactive	1000	701.3	70	10 - 100	

Duplicate - Batch: 480-58613

Method: 9034
Preparation: 7.3.4

Lab Sample ID:	480-18049-3	Analysis Batch:	480-58614	Instrument ID:	No Equipment
Client Matrix:	Solid	Prep Batch:	480-58613	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 g
Analysis Date:	04/06/2012 1900	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	04/06/2012 1500				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfide, Reactive	ND	ND	NC	20	

Lab Control Sample - Batch: 480-58572

Method: 9045C
Preparation: N/A

Lab Sample ID:	LCS 480-58572/1	Analysis Batch:	480-58572	Instrument ID:	No Equipment
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	25 mL
Analysis Date:	04/06/2012 1950	Units:	SU	Final Weight/Volume:	25 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
pH	7.00	6.960	99	99 - 101	

DATA REPORTING QUALIFIERS

Client: CHA Inc

Job Number: 480-18049-1

Lab Section	Qualifier	Description
GC/MS VOA		
	B	Compound was found in the blank and sample.
	E	Result exceeded calibration range.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	X	Surrogate is outside control limits
GC/MS Semi VOA		
	B	Compound was found in the blank and sample.
	*	LCS or LCSD exceeds the control limits
	E	Result exceeded calibration range.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	*	RPD of the LCS and LCSD exceeds the control limits
	X	Surrogate is outside control limits
Metals		
	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.

Quality Control Results

Client: CHA Inc

Job Number: 480-18049-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:480-58043					
LCS 480-58043/6	Lab Control Sample	T	Solid	8260B	
MB 480-58043/7	Method Blank	T	Solid	8260B	
480-18049-1	SB01 SS (2-3) 040212	T	Solid	8260B	480-58091
480-18049-4	SB03 SS (1-2) 040212	T	Solid	8260B	480-58091
480-18049-5	SB04 SS (2-3) 040212	T	Solid	8260B	480-58091
Prep Batch: 480-58091					
480-18049-1	SB01 SS (2-3) 040212	T	Solid	5035	
480-18049-4	SB03 SS (1-2) 040212	T	Solid	5035	
480-18049-5	SB04 SS (2-3) 040212	T	Solid	5035	
480-18049-13	SB11 SS (2-3) 040212	T	Solid	5035	
480-18049-14	SB14 SS (1-2)040212	T	Solid	5035	
480-18049-15	SB14 SS (2-3) 040212	T	Solid	5035	
480-18049-16	SB13 SS (1-2) 040212	T	Solid	5035	
480-18049-17	SB13 SS (2-3) 040212	T	Solid	5035	
480-18049-18	SB08 SS (1-2) 040212	T	Solid	5035	
480-18049-19	SB08 SS (2-3) 040212	T	Solid	5035	
480-18049-20	SB12 SS (0-1) 040212	T	Solid	5035	
480-18049-21	SB12 SS (2-3)040212	T	Solid	5035	
480-18049-23	SB09 SS (3-4) 040212	T	Solid	5035	
480-18049-24	SB15 SS (1-2) 040212	T	Solid	5035	
480-18049-25	SB15 SS (3-4) 040212	T	Solid	5035	
480-18049-26	SB06 SS (1-2) 040212	T	Solid	5035	
Analysis Batch:480-58251					
LCS 480-58251/6	Lab Control Sample	T	Solid	8260B	
MB 480-58251/7	Method Blank	T	Solid	8260B	
480-18049-6	SB05 SS (1-2 040212	T	Solid	8260B	480-58266
480-18049-9	SB07 SS (1-2) 040212	T	Solid	8260B	480-58266
480-18049-10	SB07 SS (3-4) 040212	T	Solid	8260B	480-58266
Prep Batch: 480-58266					
480-18049-6	SB05 SS (1-2 040212	T	Solid	5035	
480-18049-6DL	SB05 SS (1-2 040212	T	Solid	5035	
480-18049-9	SB07 SS (1-2) 040212	T	Solid	5035	
480-18049-10	SB07 SS (3-4) 040212	T	Solid	5035	
Prep Batch: 480-58276					
LB 480-58276/1-A	TCLP SPLPE Leachate Blank	P	Solid	1311	
480-18049-3	SB02 SS (0-3) 040212	P	Solid	1311	
480-18049-7	SB05 SS (0-3) 040212	P	Solid	1311	

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Prep Batch: 480-58304					
LCS 480-58304/1-A	Lab Control Sample	T	Solid	5035	
MB 480-58304/2-A	Method Blank	T	Solid	5035	
480-18049-1DL	SB01 SS (2-3) 040212	T	Solid	5035	
480-18049-2	SB02 SS (2-3) 040212	T	Solid	5035	
480-18049-2DL	SB02 SS (2-3) 040212	T	Solid	5035	
480-18049-4DL	SB03 SS (1-2) 040212	T	Solid	5035	
480-18049-5DL	SB04 SS (2-3) 040212	T	Solid	5035	
480-18049-8	SB06 SS (3-4) 040212	T	Solid	5035	
480-18049-8DL	SB06 SS (3-4) 040212	T	Solid	5035	
480-18049-11	SB10 SS (1-2) 040212	T	Solid	5035	
480-18049-12	SB10 SS (3-4) 040212	T	Solid	5035	
480-18049-22	SB09 SS (1-2) 040212	T	Solid	5035	
Analysis Batch:480-58389					
LCS 480-58304/1-A	Lab Control Sample	T	Solid	8260B	480-58304
MB 480-58304/2-A	Method Blank	T	Solid	8260B	480-58304
480-18049-2	SB02 SS (2-3) 040212	T	Solid	8260B	480-58304
480-18049-8	SB06 SS (3-4) 040212	T	Solid	8260B	480-58304
480-18049-22	SB09 SS (1-2) 040212	T	Solid	8260B	480-58304
Analysis Batch:480-58395					
LCS 480-58395/6	Lab Control Sample	T	Solid	8260B	
MB 480-58395/7	Method Blank	T	Solid	8260B	
480-18049-6DL	SB05 SS (1-2 040212	T	Solid	8260B	480-58266
480-18049-13	SB11 SS (2-3) 040212	T	Solid	8260B	480-58091
480-18049-14	SB14 SS (1-2)040212	T	Solid	8260B	480-58091
480-18049-15	SB14 SS (2-3) 040212	T	Solid	8260B	480-58091
480-18049-16	SB13 SS (1-2) 040212	T	Solid	8260B	480-58091
480-18049-17	SB13 SS (2-3) 040212	T	Solid	8260B	480-58091
480-18049-18	SB08 SS (1-2) 040212	T	Solid	8260B	480-58091
480-18049-19	SB08 SS (2-3) 040212	T	Solid	8260B	480-58091
480-18049-20	SB12 SS (0-1) 040212	T	Solid	8260B	480-58091
480-18049-21	SB12 SS (2-3)040212	T	Solid	8260B	480-58091
480-18049-23	SB09 SS (3-4) 040212	T	Solid	8260B	480-58091
Analysis Batch:480-58428					
LCS 480-58428/5	Lab Control Sample	T	Solid	8260B	
MB 480-58428/6	Method Blank	T	Solid	8260B	
480-18049-24	SB15 SS (1-2) 040212	T	Solid	8260B	480-58091
480-18049-25	SB15 SS (3-4) 040212	T	Solid	8260B	480-58091
480-18049-26	SB06 SS (1-2) 040212	T	Solid	8260B	480-58091

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:480-58481					
480-18049-1DL	SB01 SS (2-3) 040212	T	Solid	8260B	480-58304
480-18049-2DL	SB02 SS (2-3) 040212	T	Solid	8260B	480-58304
480-18049-5DL	SB04 SS (2-3) 040212	T	Solid	8260B	480-58304
480-18049-11	SB10 SS (1-2) 040212	T	Solid	8260B	480-58304
480-18049-12	SB10 SS (3-4) 040212	T	Solid	8260B	480-58304
Analysis Batch:480-58568					
LB 480-58276/1-A	TCLP SPLPE Leachate Blank	P	Solid	8260B	
LCS 480-58568/4	Lab Control Sample	T	Water	8260B	
MB 480-58568/5	Method Blank	T	Water	8260B	
480-18049-3	SB02 SS (0-3) 040212	P	Solid	8260B	
480-18049-4DL	SB03 SS (1-2) 040212	T	Solid	8260B	480-58304
480-18049-7	SB05 SS (0-3) 040212	P	Solid	8260B	
480-18049-8DL	SB06 SS (3-4) 040212	T	Solid	8260B	480-58304

Report Basis

P = TCLP

T = Total

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 480-58238					
LCS 480-58238/2-A	Lab Control Sample	T	Solid	3550B	
LCSD 480-58238/3-A	Lab Control Sample Duplicate	T	Solid	3550B	
MB 480-58238/1-A	Method Blank	T	Solid	3550B	
480-18049-1	SB01 SS (2-3) 040212	T	Solid	3550B	
480-18049-2	SB02 SS (2-3) 040212	T	Solid	3550B	
480-18049-4	SB03 SS (1-2) 040212	T	Solid	3550B	
480-18049-5	SB04 SS (2-3) 040212	T	Solid	3550B	
480-18049-6	SB05 SS (1-2 040212	T	Solid	3550B	
480-18049-8	SB06 SS (3-4) 040212	T	Solid	3550B	
480-18049-9	SB07 SS (1-2) 040212	T	Solid	3550B	
480-18049-10	SB07 SS (3-4) 040212	T	Solid	3550B	
480-18049-11	SB10 SS (1-2) 040212	T	Solid	3550B	
480-18049-12	SB10 SS (3-4) 040212	T	Solid	3550B	
480-18049-13	SB11 SS (2-3) 040212	T	Solid	3550B	
480-18049-14	SB14 SS (1-2)040212	T	Solid	3550B	
480-18049-15	SB14 SS (2-3) 040212	T	Solid	3550B	
480-18049-16	SB13 SS (1-2) 040212	T	Solid	3550B	
480-18049-17	SB13 SS (2-3) 040212	T	Solid	3550B	
480-18049-18	SB08 SS (1-2) 040212	T	Solid	3550B	
480-18049-19	SB08 SS (2-3) 040212	T	Solid	3550B	
480-18049-20	SB12 SS (0-1) 040212	T	Solid	3550B	
480-18049-21	SB12 SS (2-3)040212	T	Solid	3550B	
480-18049-22	SB09 SS (1-2) 040212	T	Solid	3550B	
Prep Batch: 480-58249					
LCS 480-58249/2-A	Lab Control Sample	T	Solid	3550B	
MB 480-58249/1-A	Method Blank	T	Solid	3550B	
480-18049-23	SB09 SS (3-4) 040212	T	Solid	3550B	
480-18049-24	SB15 SS (1-2) 040212	T	Solid	3550B	
480-18049-25	SB15 SS (3-4) 040212	T	Solid	3550B	
480-18049-26	SB06 SS (1-2) 040212	T	Solid	3550B	
Prep Batch: 480-58275					
LB 480-58275/13-D	TCLP SPLPE Leachate Blank	P	Solid	1311	
480-18049-3	SB02 SS (0-3) 040212	P	Solid	1311	
480-18049-3DL	SB02 SS (0-3) 040212	P	Solid	1311	
480-18049-7	SB05 SS (0-3) 040212	P	Solid	1311	
Analysis Batch:480-58452					
LCS 480-58249/2-A	Lab Control Sample	T	Solid	8270C	480-58249
MB 480-58249/1-A	Method Blank	T	Solid	8270C	480-58249
480-18049-23	SB09 SS (3-4) 040212	T	Solid	8270C	480-58249
480-18049-24	SB15 SS (1-2) 040212	T	Solid	8270C	480-58249
480-18049-25	SB15 SS (3-4) 040212	T	Solid	8270C	480-58249
480-18049-26	SB06 SS (1-2) 040212	T	Solid	8270C	480-58249

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 480-58531					
LCS 480-58531/2-A	Lab Control Sample	T	Water	3510C	
LCSD 480-58531/3-A	Lab Control Sample Duplicate	T	Water	3510C	
MB 480-58531/1-A	Method Blank	T	Water	3510C	
LB 480-58275/13-D	TCLP SPLPE Leachate Blank	P	Solid	3510C	480-58275
480-18049-3	SB02 SS (0-3) 040212	P	Solid	3510C	480-58275
480-18049-3DL	SB02 SS (0-3) 040212	P	Solid	3510C	480-58275
480-18049-7	SB05 SS (0-3) 040212	P	Solid	3510C	480-58275
Analysis Batch:480-58601					
LB 480-58275/13-D	TCLP SPLPE Leachate Blank	P	Solid	8270C	480-58531
LCS 480-58531/2-A	Lab Control Sample	T	Water	8270C	480-58531
LCSD 480-58531/3-A	Lab Control Sample Duplicate	T	Water	8270C	480-58531
MB 480-58531/1-A	Method Blank	T	Water	8270C	480-58531
480-18049-3	SB02 SS (0-3) 040212	P	Solid	8270C	480-58531
480-18049-7	SB05 SS (0-3) 040212	P	Solid	8270C	480-58531
Analysis Batch:480-58695					
LCS 480-58238/2-A	Lab Control Sample	T	Solid	8270C	480-58238
LCSD 480-58238/3-A	Lab Control Sample Duplicate	T	Solid	8270C	480-58238
MB 480-58238/1-A	Method Blank	T	Solid	8270C	480-58238
480-18049-1	SB01 SS (2-3) 040212	T	Solid	8270C	480-58238
480-18049-2	SB02 SS (2-3) 040212	T	Solid	8270C	480-58238
480-18049-3DL	SB02 SS (0-3) 040212	P	Solid	8270C	480-58531
480-18049-4	SB03 SS (1-2) 040212	T	Solid	8270C	480-58238
480-18049-5	SB04 SS (2-3) 040212	T	Solid	8270C	480-58238
480-18049-6	SB05 SS (1-2 040212	T	Solid	8270C	480-58238
480-18049-9	SB07 SS (1-2) 040212	T	Solid	8270C	480-58238
480-18049-10	SB07 SS (3-4) 040212	T	Solid	8270C	480-58238
480-18049-11	SB10 SS (1-2) 040212	T	Solid	8270C	480-58238
480-18049-12	SB10 SS (3-4) 040212	T	Solid	8270C	480-58238
480-18049-13	SB11 SS (2-3) 040212	T	Solid	8270C	480-58238
480-18049-15	SB14 SS (2-3) 040212	T	Solid	8270C	480-58238
Analysis Batch:480-58886					
480-18049-8	SB06 SS (3-4) 040212	T	Solid	8270C	480-58238
480-18049-14	SB14 SS (1-2)040212	T	Solid	8270C	480-58238
480-18049-16	SB13 SS (1-2) 040212	T	Solid	8270C	480-58238
480-18049-17	SB13 SS (2-3) 040212	T	Solid	8270C	480-58238
480-18049-18	SB08 SS (1-2) 040212	T	Solid	8270C	480-58238
480-18049-19	SB08 SS (2-3) 040212	T	Solid	8270C	480-58238
480-18049-20	SB12 SS (0-1) 040212	T	Solid	8270C	480-58238
480-18049-21	SB12 SS (2-3)040212	T	Solid	8270C	480-58238
480-18049-22	SB09 SS (1-2) 040212	T	Solid	8270C	480-58238

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch

Report Basis

P = TCLP

T = Total

Client: CHA Inc

Job Number: 480-18049-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 480-58275					
LB 480-58275/13-B	TCLP SPLPE Leachate Blank	P	Solid	1311	
LB 480-58275/13-C	TCLP SPLPE Leachate Blank	P	Solid	1311	
480-18049-3	SB02 SS (0-3) 040212	P	Solid	1311	
480-18049-3MS	Matrix Spike	P	Solid	1311	
480-18049-3MSD	Matrix Spike Duplicate	P	Solid	1311	
480-18049-7	SB05 SS (0-3) 040212	P	Solid	1311	
Prep Batch: 480-58479					
LCS 480-58479/3-A	Lab Control Sample	T	Water	7470A	
MB 480-58479/2-A	Method Blank	T	Water	7470A	
LB 480-58275/13-B	TCLP SPLPE Leachate Blank	P	Solid	7470A	480-58275
480-18049-3	SB02 SS (0-3) 040212	P	Solid	7470A	480-58275
480-18049-3MS	Matrix Spike	P	Solid	7470A	480-58275
480-18049-3MSD	Matrix Spike Duplicate	P	Solid	7470A	480-58275
480-18049-7	SB05 SS (0-3) 040212	P	Solid	7470A	480-58275
Prep Batch: 480-58480					
LCS 480-58480/3-A	Lab Control Sample	T	Water	3010A	
MB 480-58480/2-A	Method Blank	T	Water	3010A	
LB 480-58275/13-C	TCLP SPLPE Leachate Blank	P	Solid	3010A	480-58275
480-18049-3	SB02 SS (0-3) 040212	P	Solid	3010A	480-58275
480-18049-3MS	Matrix Spike	P	Solid	3010A	480-58275
480-18049-3MSD	Matrix Spike Duplicate	P	Solid	3010A	480-58275
480-18049-7	SB05 SS (0-3) 040212	P	Solid	3010A	480-58275
Analysis Batch:480-58543					
LB 480-58275/13-B	TCLP SPLPE Leachate Blank	P	Solid	7470A	480-58479
LCS 480-58479/3-A	Lab Control Sample	T	Water	7470A	480-58479
MB 480-58479/2-A	Method Blank	T	Water	7470A	480-58479
480-18049-3	SB02 SS (0-3) 040212	P	Solid	7470A	480-58479
480-18049-3MS	Matrix Spike	P	Solid	7470A	480-58479
480-18049-3MSD	Matrix Spike Duplicate	P	Solid	7470A	480-58479
480-18049-7	SB05 SS (0-3) 040212	P	Solid	7470A	480-58479
Analysis Batch:480-58666					
LB 480-58275/13-C	TCLP SPLPE Leachate Blank	P	Solid	6010B	480-58480
LCS 480-58480/3-A	Lab Control Sample	T	Water	6010B	480-58480
MB 480-58480/2-A	Method Blank	T	Water	6010B	480-58480
480-18049-3	SB02 SS (0-3) 040212	P	Solid	6010B	480-58480
480-18049-3MS	Matrix Spike	P	Solid	6010B	480-58480
480-18049-3MSD	Matrix Spike Duplicate	P	Solid	6010B	480-58480
480-18049-7	SB05 SS (0-3) 040212	P	Solid	6010B	480-58480

Client: CHA Inc

Job Number: 480-18049-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch

Report Basis

P = TCLP

T = Total

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:480-58314					
480-18049-1	SB01 SS (2-3) 040212	T	Solid	Moisture	
480-18049-2	SB02 SS (2-3) 040212	T	Solid	Moisture	
480-18049-3	SB02 SS (0-3) 040212	T	Solid	Moisture	
480-18049-4	SB03 SS (1-2) 040212	T	Solid	Moisture	
480-18049-5	SB04 SS (2-3) 040212	T	Solid	Moisture	
480-18049-6	SB05 SS (1-2 040212	T	Solid	Moisture	
480-18049-7	SB05 SS (0-3) 040212	T	Solid	Moisture	
480-18049-8	SB06 SS (3-4) 040212	T	Solid	Moisture	
480-18049-9	SB07 SS (1-2) 040212	T	Solid	Moisture	
480-18049-10	SB07 SS (3-4) 040212	T	Solid	Moisture	
480-18049-11	SB10 SS (1-2) 040212	T	Solid	Moisture	
480-18049-12	SB10 SS (3-4) 040212	T	Solid	Moisture	
480-18049-13	SB11 SS (2-3) 040212	T	Solid	Moisture	
480-18049-14	SB14 SS (1-2)040212	T	Solid	Moisture	
480-18049-15	SB14 SS (2-3) 040212	T	Solid	Moisture	
480-18049-16	SB13 SS (1-2) 040212	T	Solid	Moisture	
480-18049-17	SB13 SS (2-3) 040212	T	Solid	Moisture	
480-18049-18	SB08 SS (1-2) 040212	T	Solid	Moisture	
480-18049-19	SB08 SS (2-3) 040212	T	Solid	Moisture	
480-18049-20	SB12 SS (0-1) 040212	T	Solid	Moisture	
480-18049-21	SB12 SS (2-3)040212	T	Solid	Moisture	
480-18049-22	SB09 SS (1-2) 040212	T	Solid	Moisture	
480-18049-23	SB09 SS (3-4) 040212	T	Solid	Moisture	
480-18049-24	SB15 SS (1-2) 040212	T	Solid	Moisture	
480-18049-25	SB15 SS (3-4) 040212	T	Solid	Moisture	
480-18049-26	SB06 SS (1-2) 040212	T	Solid	Moisture	
Analysis Batch:480-58572					
LCS 480-58572/1	Lab Control Sample	T	Solid	9045C	
480-18049-3	SB02 SS (0-3) 040212	T	Solid	9045C	
480-18049-7	SB05 SS (0-3) 040212	T	Solid	9045C	
Prep Batch: 480-58610					
LCS 480-58610/2-A	Lab Control Sample	T	Solid	7.3.3	
MB 480-58610/1-A	Method Blank	T	Solid	7.3.3	
480-18049-3	SB02 SS (0-3) 040212	T	Solid	7.3.3	
480-18049-7	SB05 SS (0-3) 040212	T	Solid	7.3.3	
Analysis Batch:480-58611					
LCS 480-58610/2-A	Lab Control Sample	T	Solid	9012	480-58610
MB 480-58610/1-A	Method Blank	T	Solid	9012	480-58610
480-18049-3	SB02 SS (0-3) 040212	T	Solid	9012	480-58610
480-18049-7	SB05 SS (0-3) 040212	T	Solid	9012	480-58610

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Prep Batch: 480-58613					
LCS 480-58613/2-A	Lab Control Sample	T	Solid	7.3.4	
MB 480-58613/1-A	Method Blank	T	Solid	7.3.4	
480-18049-3	SB02 SS (0-3) 040212	T	Solid	7.3.4	
480-18049-3DU	Duplicate	T	Solid	7.3.4	
480-18049-7	SB05 SS (0-3) 040212	T	Solid	7.3.4	
Analysis Batch:480-58614					
LCS 480-58613/2-A	Lab Control Sample	T	Solid	9034	480-58613
MB 480-58613/1-A	Method Blank	T	Solid	9034	480-58613
480-18049-3	SB02 SS (0-3) 040212	T	Solid	9034	480-58613
480-18049-3DU	Duplicate	T	Solid	9034	480-58613
480-18049-7	SB05 SS (0-3) 040212	T	Solid	9034	480-58613
Analysis Batch:480-58632					
LCS 480-58632/1	Lab Control Sample	T	Solid	1010	
480-18049-3	SB02 SS (0-3) 040212	T	Solid	1010	
480-18049-7	SB05 SS (0-3) 040212	T	Solid	1010	

Report Basis

T = Total

Laboratory Chronicle

Lab ID: **480-18049-1** **Client ID:** **SB01 SS (2-3) 040212**

Sample Date/Time: 04/02/2012 09:15 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-1-A		480-58043	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-1-A		480-58043	480-58091	04/04/2012 14:38	1	TAL BUF	CDC
P:5035	480-18049-C-1-B	DL	480-58481	480-58304	04/05/2012 10:45	5	TAL BUF	DC
A:8260B	480-18049-C-1-B	DL	480-58481	480-58304	04/06/2012 13:23	5	TAL BUF	RL
P:3550B	480-18049-A-1-A		480-58695	480-58238	04/05/2012 08:28	20	TAL BUF	CM
A:8270C	480-18049-A-1-A		480-58695	480-58238	04/09/2012 20:40	20	TAL BUF	HTL
A:Moisture	480-18049-A-1		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-2** **Client ID:** **SB02 SS (2-3) 040212**

Sample Date/Time: 04/02/2012 10:04 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-2-B		480-58389	480-58304	04/05/2012 10:45	1	TAL BUF	DC
A:8260B	480-18049-C-2-B		480-58389	480-58304	04/06/2012 06:15	1	TAL BUF	DC
P:5035	480-18049-C-2-B	DL	480-58481	480-58304	04/05/2012 10:45	10	TAL BUF	DC
A:8260B	480-18049-C-2-B	DL	480-58481	480-58304	04/06/2012 13:46	10	TAL BUF	RL
P:3550B	480-18049-A-2-A		480-58695	480-58238	04/05/2012 08:28	10	TAL BUF	CM
A:8270C	480-18049-A-2-A		480-58695	480-58238	04/09/2012 21:04	10	TAL BUF	HTL
A:Moisture	480-18049-A-2		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-3** **Client ID:** **SB02 SS (0-3) 040212**

Sample Date/Time: 04/02/2012 10:04 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	480-18049-C-3-B		480-58568		04/07/2012 03:22	10	TAL BUF	DC
A:8260B	480-18049-C-3-B		480-58568		04/07/2012 03:22	10	TAL BUF	DC
P:3510C	480-18049-C-3-I		480-58601	480-58531	04/06/2012 13:52	1	TAL BUF	DE
A:8270C	480-18049-C-3-I		480-58601	480-58531	04/07/2012 16:53	1	TAL BUF	HTL
P:3510C	480-18049-C-3-I	DL	480-58695	480-58531	04/06/2012 13:52	5	TAL BUF	DE
A:8270C	480-18049-C-3-I	DL	480-58695	480-58531	04/09/2012 18:16	5	TAL BUF	HTL
P:3010A	480-18049-C-3-F		480-58666	480-58480	04/06/2012 10:50	1	TAL BUF	SS
A:6010B	480-18049-C-3-F		480-58666	480-58480	04/06/2012 19:12	1	TAL BUF	LH
P:7470A	480-18049-C-3-C		480-58543	480-58479	04/06/2012 10:40	1	TAL BUF	JRK
A:7470A	480-18049-C-3-C		480-58543	480-58479	04/06/2012 13:39	1	TAL BUF	JRK
A:1010	480-18049-C-3		480-58632		04/07/2012 14:16	1	TAL BUF	KS
P:7.3.3	480-18049-B-3-A		480-58611	480-58610	04/06/2012 15:00	1	TAL BUF	JR
A:9012	480-18049-B-3-A		480-58611	480-58610	04/07/2012 10:53	1	TAL BUF	JR
P:7.3.4	480-18049-B-3-B		480-58614	480-58613	04/06/2012 15:00	1	TAL BUF	JR
A:9034	480-18049-B-3-B		480-58614	480-58613	04/06/2012 19:00	1	TAL BUF	JR
A:9045C	480-18049-D-3		480-58572		04/06/2012 19:50	1	TAL BUF	EGN
A:Moisture	480-18049-A-3		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Laboratory Chronicle

Lab ID: **480-18049-3 MS** **Client ID:** **SB02 SS (0-3) 040212**

Sample Date/Time: 04/02/2012 10:04 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3010A	480-18049-C-3-G MS		480-58666	480-58480	04/06/2012 10:50	1	TAL BUF	SS
A:6010B	480-18049-C-3-G MS		480-58666	480-58480	04/06/2012 19:19	1	TAL BUF	LH
P:7470A	480-18049-C-3-D MS		480-58543	480-58479	04/06/2012 10:40	1	TAL BUF	JRK
A:7470A	480-18049-C-3-D MS		480-58543	480-58479	04/06/2012 13:43	1	TAL BUF	JRK

Lab ID: **480-18049-3 MSD** **Client ID:** **SB02 SS (0-3) 040212**

Sample Date/Time: 04/02/2012 10:04 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3010A	480-18049-C-3-H MSD		480-58666	480-58480	04/06/2012 10:50	1	TAL BUF	SS
A:6010B	480-18049-C-3-H MSD		480-58666	480-58480	04/06/2012 19:21	1	TAL BUF	LH
P:7470A	480-18049-C-3-E MSD		480-58543	480-58479	04/06/2012 10:40	1	TAL BUF	JRK
A:7470A	480-18049-C-3-E MSD		480-58543	480-58479	04/06/2012 13:44	1	TAL BUF	JRK

Lab ID: **480-18049-3 DU** **Client ID:** **SB02 SS (0-3) 040212**

Sample Date/Time: 04/02/2012 10:04 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:7.3.4	480-18049-B-3-B DU		480-58614	480-58613	04/06/2012 15:00	1	TAL BUF	JR
A:9034	480-18049-B-3-B DU		480-58614	480-58613	04/06/2012 19:00	1	TAL BUF	JR

Lab ID: **480-18049-3 SD** **Client ID:** **SB02 SS (0-3) 040212**

Sample Date/Time: 04/02/2012 10:04 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3010A	480-18049-C-3-F SD ^5		480-58666	480-58480	04/06/2012 10:50	5	TAL BUF	SS
A:6010B	480-18049-C-3-F SD ^5		480-58666	480-58480	04/06/2012 19:14	5	TAL BUF	LH
P:3010A	480-18049-C-3-F PDS		480-58666	480-58480	04/06/2012 10:50	1	TAL BUF	SS
A:6010B	480-18049-C-3-F PDS		480-58666	480-58480	04/06/2012 19:16	1	TAL BUF	LH
P:7470A	480-18049-C-3-C SD ^5		480-58543	480-58479	04/06/2012 10:40	5	TAL BUF	JRK
A:7470A	480-18049-C-3-C SD ^5		480-58543	480-58479	04/06/2012 13:41	5	TAL BUF	JRK

Client: CHA Inc

Job Number: 480-18049-1

Laboratory Chronicle

Lab ID: **480-18049-4** **Client ID:** **SB03 SS (1-2) 040212**

Sample Date/Time: 04/02/2012 10:30 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-4-A		480-58043	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-4-A		480-58043	480-58091	04/04/2012 15:29	1	TAL BUF	CDC
P:5035	480-18049-C-4-B	DL	480-58568	480-58304	04/05/2012 10:45	200	TAL BUF	DC
A:8260B	480-18049-C-4-B	DL	480-58568	480-58304	04/07/2012 07:54	200	TAL BUF	DC
P:3550B	480-18049-A-4-A		480-58695	480-58238	04/05/2012 08:28	20	TAL BUF	CM
A:8270C	480-18049-A-4-A		480-58695	480-58238	04/09/2012 21:28	20	TAL BUF	HTL
A:Moisture	480-18049-A-4		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-5** **Client ID:** **SB04 SS (2-3) 040212**

Sample Date/Time: 04/02/2012 10:45 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-5-A		480-58043	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-5-A		480-58043	480-58091	04/04/2012 15:54	1	TAL BUF	CDC
P:5035	480-18049-C-5-B	DL	480-58481	480-58304	04/05/2012 10:45	8	TAL BUF	DC
A:8260B	480-18049-C-5-B	DL	480-58481	480-58304	04/06/2012 14:32	8	TAL BUF	RL
P:3550B	480-18049-A-5-A		480-58695	480-58238	04/05/2012 08:28	20	TAL BUF	CM
A:8270C	480-18049-A-5-A		480-58695	480-58238	04/09/2012 21:52	20	TAL BUF	HTL
A:Moisture	480-18049-A-5		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-6** **Client ID:** **SB05 SS (1-2 040212**

Sample Date/Time: 04/02/2012 11:15 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-6-B		480-58251	480-58266	04/05/2012 09:23	1	TAL BUF	JMB
A:8260B	480-18049-C-6-B		480-58251	480-58266	04/05/2012 16:17	1	TAL BUF	CDC
P:5035	480-18049-C-6-C	DL	480-58395	480-58266	04/05/2012 22:14	1	TAL BUF	JMB
A:8260B	480-18049-C-6-C	DL	480-58395	480-58266	04/05/2012 23:04	1	TAL BUF	JMB
P:3550B	480-18049-A-6-A		480-58695	480-58238	04/05/2012 08:28	20	TAL BUF	CM
A:8270C	480-18049-A-6-A		480-58695	480-58238	04/09/2012 22:16	20	TAL BUF	HTL
A:Moisture	480-18049-A-6		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

A = Analytical Method P = Prep Method

Laboratory Chronicle

Lab ID: **480-18049-7** **Client ID:** **SB05 SS (0-3) 040212**

Sample Date/Time: 04/02/2012 11:15 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	480-18049-C-7-B		480-58568		04/07/2012 03:45	10	TAL BUF	DC
A:8260B	480-18049-C-7-B		480-58568		04/07/2012 03:45	10	TAL BUF	DC
P:3510C	480-18049-C-7-E		480-58601	480-58531	04/06/2012 13:52	1	TAL BUF	DE
A:8270C	480-18049-C-7-E		480-58601	480-58531	04/07/2012 17:17	1	TAL BUF	HTL
P:3010A	480-18049-C-7-D		480-58666	480-58480	04/06/2012 10:50	1	TAL BUF	SS
A:6010B	480-18049-C-7-D		480-58666	480-58480	04/06/2012 19:23	1	TAL BUF	LH
P:7470A	480-18049-C-7-C		480-58543	480-58479	04/06/2012 10:40	1	TAL BUF	JRK
A:7470A	480-18049-C-7-C		480-58543	480-58479	04/06/2012 13:46	1	TAL BUF	JRK
A:1010	480-18049-C-7		480-58632		04/07/2012 14:59	1	TAL BUF	KS
P:7.3.3	480-18049-B-7-A		480-58611	480-58610	04/06/2012 15:00	1	TAL BUF	JR
A:9012	480-18049-B-7-A		480-58611	480-58610	04/07/2012 10:53	1	TAL BUF	JR
P:7.3.4	480-18049-B-7-B		480-58614	480-58613	04/06/2012 15:00	1	TAL BUF	JR
A:9034	480-18049-B-7-B		480-58614	480-58613	04/06/2012 19:00	1	TAL BUF	JR
A:9045C	480-18049-D-7		480-58572		04/06/2012 19:50	1	TAL BUF	EGN
A:Moisture	480-18049-A-7		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-8** **Client ID:** **SB06 SS (3-4) 040212**

Sample Date/Time: 04/02/2012 12:00 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-8-B		480-58389	480-58304	04/05/2012 10:45	50	TAL BUF	DC
A:8260B	480-18049-C-8-B		480-58389	480-58304	04/06/2012 07:23	50	TAL BUF	DC
P:5035	480-18049-C-8-B	DL	480-58568	480-58304	04/05/2012 10:45	2000	TAL BUF	DC
A:8260B	480-18049-C-8-B	DL	480-58568	480-58304	04/07/2012 08:17	2000	TAL BUF	DC
P:3550B	480-18049-A-8-A		480-58886	480-58238	04/05/2012 08:28	10	TAL BUF	CM
A:8270C	480-18049-A-8-A		480-58886	480-58238	04/10/2012 10:56	10	TAL BUF	HTL
A:Moisture	480-18049-A-8		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-9** **Client ID:** **SB07 SS (1-2) 040212**

Sample Date/Time: 04/02/2012 12:15 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-9-B		480-58251	480-58266	04/05/2012 09:23	1	TAL BUF	JMB
A:8260B	480-18049-C-9-B		480-58251	480-58266	04/05/2012 16:43	1	TAL BUF	CDC
P:3550B	480-18049-A-9-A		480-58695	480-58238	04/05/2012 08:28	1	TAL BUF	CM
A:8270C	480-18049-A-9-A		480-58695	480-58238	04/09/2012 23:04	1	TAL BUF	HTL
A:Moisture	480-18049-A-9		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Client: CHA Inc Job Number: 480-18049-1

Laboratory Chronicle

Lab ID: 480-18049-10 **Client ID: SB07 SS (3-4) 040212**

Sample Date/Time: 04/02/2012 12:15 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-10-B		480-58251	480-58266	04/05/2012 09:23	1	TAL BUF	JMB
A:8260B	480-18049-C-10-B		480-58251	480-58266	04/05/2012 17:08	1	TAL BUF	CDC
P:3550B	480-18049-A-10-A		480-58695	480-58238	04/05/2012 08:28	1	TAL BUF	CM
A:8270C	480-18049-A-10-A		480-58695	480-58238	04/09/2012 23:28	1	TAL BUF	HTL
A:Moisture	480-18049-A-10		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: 480-18049-11 **Client ID: SB10 SS (1-2) 040212**

Sample Date/Time: 04/02/2012 12:30 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-11-B		480-58481	480-58304	04/05/2012 10:45	1	TAL BUF	DC
A:8260B	480-18049-C-11-B		480-58481	480-58304	04/06/2012 15:18	1	TAL BUF	RL
P:3550B	480-18049-A-11-A		480-58695	480-58238	04/05/2012 08:28	20	TAL BUF	CM
A:8270C	480-18049-A-11-A		480-58695	480-58238	04/09/2012 23:53	20	TAL BUF	HTL
A:Moisture	480-18049-A-11		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: 480-18049-12 **Client ID: SB10 SS (3-4) 040212**

Sample Date/Time: 04/02/2012 12:30 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-12-B		480-58481	480-58304	04/05/2012 10:45	1	TAL BUF	DC
A:8260B	480-18049-C-12-B		480-58481	480-58304	04/06/2012 15:41	1	TAL BUF	RL
P:3550B	480-18049-A-12-A		480-58695	480-58238	04/05/2012 08:28	1	TAL BUF	CM
A:8270C	480-18049-A-12-A		480-58695	480-58238	04/10/2012 00:17	1	TAL BUF	HTL
A:Moisture	480-18049-A-12		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: 480-18049-13 **Client ID: SB11 SS (2-3) 040212**

Sample Date/Time: 04/02/2012 12:45 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-13-A		480-58395	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-13-A		480-58395	480-58091	04/05/2012 23:30	1	TAL BUF	JMB
P:3550B	480-18049-A-13-A		480-58695	480-58238	04/05/2012 08:28	1	TAL BUF	CM
A:8270C	480-18049-A-13-A		480-58695	480-58238	04/10/2012 00:41	1	TAL BUF	HTL
A:Moisture	480-18049-A-13		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Laboratory Chronicle

Lab ID: **480-18049-14** **Client ID:** **SB14 SS (1-2)040212**

Sample Date/Time: 04/02/2012 13:00 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-14-A		480-58395	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-14-A		480-58395	480-58091	04/05/2012 23:55	1	TAL BUF	JMB
P:3550B	480-18049-A-14-A		480-58886	480-58238	04/05/2012 08:28	1	TAL BUF	CM
A:8270C	480-18049-A-14-A		480-58886	480-58238	04/10/2012 14:08	1	TAL BUF	HTL
A:Moisture	480-18049-A-14		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-15** **Client ID:** **SB14 SS (2-3) 040212**

Sample Date/Time: 04/02/2012 13:00 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-15-A		480-58395	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-15-A		480-58395	480-58091	04/06/2012 00:21	1	TAL BUF	JMB
P:3550B	480-18049-A-15-A		480-58695	480-58238	04/05/2012 08:28	1	TAL BUF	CM
A:8270C	480-18049-A-15-A		480-58695	480-58238	04/10/2012 01:29	1	TAL BUF	HTL
A:Moisture	480-18049-A-15		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-16** **Client ID:** **SB13 SS (1-2) 040212**

Sample Date/Time: 04/02/2012 13:15 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-16-A		480-58395	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-16-A		480-58395	480-58091	04/06/2012 00:46	1	TAL BUF	JMB
P:3550B	480-18049-A-16-A		480-58886	480-58238	04/05/2012 08:28	10	TAL BUF	CM
A:8270C	480-18049-A-16-A		480-58886	480-58238	04/10/2012 11:20	10	TAL BUF	HTL
A:Moisture	480-18049-A-16		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-17** **Client ID:** **SB13 SS (2-3) 040212**

Sample Date/Time: 04/02/2012 13:15 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-17-A		480-58395	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-17-A		480-58395	480-58091	04/06/2012 01:12	1	TAL BUF	JMB
P:3550B	480-18049-A-17-A		480-58886	480-58238	04/05/2012 08:28	10	TAL BUF	CM
A:8270C	480-18049-A-17-A		480-58886	480-58238	04/10/2012 11:44	10	TAL BUF	HTL
A:Moisture	480-18049-A-17		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Client: CHA Inc

Job Number: 480-18049-1

Laboratory Chronicle

Lab ID: **480-18049-18** **Client ID:** **SB08 SS (1-2) 040212**

Sample Date/Time: 04/02/2012 13:30 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-18-A		480-58395	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-18-A		480-58395	480-58091	04/06/2012 01:37	1	TAL BUF	JMB
P:3550B	480-18049-A-18-A		480-58886	480-58238	04/05/2012 08:28	20	TAL BUF	CM
A:8270C	480-18049-A-18-A		480-58886	480-58238	04/10/2012 12:08	20	TAL BUF	HTL
A:Moisture	480-18049-A-18		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-19** **Client ID:** **SB08 SS (2-3) 040212**

Sample Date/Time: 04/02/2012 13:30 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-19-A		480-58395	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-19-A		480-58395	480-58091	04/06/2012 02:03	1	TAL BUF	JMB
P:3550B	480-18049-A-19-A		480-58886	480-58238	04/05/2012 08:28	5	TAL BUF	CM
A:8270C	480-18049-A-19-A		480-58886	480-58238	04/10/2012 12:31	5	TAL BUF	HTL
A:Moisture	480-18049-A-19		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-20** **Client ID:** **SB12 SS (0-1) 040212**

Sample Date/Time: 04/02/2012 14:00 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-20-A		480-58395	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-20-A		480-58395	480-58091	04/06/2012 02:28	1	TAL BUF	JMB
P:3550B	480-18049-A-20-A		480-58886	480-58238	04/05/2012 08:28	5	TAL BUF	CM
A:8270C	480-18049-A-20-A		480-58886	480-58238	04/10/2012 12:56	5	TAL BUF	HTL
A:Moisture	480-18049-A-20		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-21** **Client ID:** **SB12 SS (2-3)040212**

Sample Date/Time: 04/02/2012 14:00 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-21-A		480-58395	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-21-A		480-58395	480-58091	04/06/2012 02:54	1	TAL BUF	JMB
P:3550B	480-18049-A-21-A		480-58886	480-58238	04/05/2012 08:28	20	TAL BUF	CM
A:8270C	480-18049-A-21-A		480-58886	480-58238	04/10/2012 13:20	20	TAL BUF	HTL
A:Moisture	480-18049-A-21		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

A = Analytical Method P = Prep Method

Laboratory Chronicle

Lab ID: **480-18049-22** **Client ID:** **SB09 SS (1-2) 040212**

Sample Date/Time: 04/02/2012 14:15 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-22-B		480-58389	480-58304	04/05/2012 10:45	1	TAL BUF	DC
A:8260B	480-18049-C-22-B		480-58389	480-58304	04/06/2012 08:30	1	TAL BUF	DC
P:3550B	480-18049-A-22-A		480-58886	480-58238	04/05/2012 08:28	20	TAL BUF	CM
A:8270C	480-18049-A-22-A		480-58886	480-58238	04/10/2012 13:44	20	TAL BUF	HTL
A:Moisture	480-18049-A-22		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-23** **Client ID:** **SB09 SS (3-4) 040212**

Sample Date/Time: 04/02/2012 14:15 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-23-A		480-58395	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-23-A		480-58395	480-58091	04/06/2012 03:20	1	TAL BUF	JMB
P:3550B	480-18049-A-23-A		480-58452	480-58249	04/05/2012 08:37	10	TAL BUF	CM
A:8270C	480-18049-A-23-A		480-58452	480-58249	04/06/2012 16:08	10	TAL BUF	HTL
A:Moisture	480-18049-A-23		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-24** **Client ID:** **SB15 SS (1-2) 040212**

Sample Date/Time: 04/02/2012 14:30 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-24-A		480-58428	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-24-A		480-58428	480-58091	04/06/2012 11:14	1	TAL BUF	CDC
P:3550B	480-18049-A-24-A		480-58452	480-58249	04/05/2012 08:37	10	TAL BUF	CM
A:8270C	480-18049-A-24-A		480-58452	480-58249	04/06/2012 16:32	10	TAL BUF	HTL
A:Moisture	480-18049-A-24		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **480-18049-25** **Client ID:** **SB15 SS (3-4) 040212**

Sample Date/Time: 04/02/2012 14:30 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-25-A		480-58428	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-25-A		480-58428	480-58091	04/06/2012 11:39	1	TAL BUF	CDC
P:3550B	480-18049-A-25-A		480-58452	480-58249	04/05/2012 08:37	10	TAL BUF	CM
A:8270C	480-18049-A-25-A		480-58452	480-58249	04/06/2012 16:56	10	TAL BUF	HTL
A:Moisture	480-18049-A-25		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Client: CHA Inc

Job Number: 480-18049-1

Laboratory Chronicle

Lab ID: **480-18049-26** **Client ID:** **SB06 SS (1-2) 040212**

Sample Date/Time: 04/02/2012 12:00 Received Date/Time: 04/04/2012 09:00

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5035	480-18049-C-26-A		480-58428	480-58091	04/04/2012 14:04	1	TAL BUF	JMB
A:8260B	480-18049-C-26-A		480-58428	480-58091	04/06/2012 12:05	1	TAL BUF	CDC
P:3550B	480-18049-A-26-A		480-58452	480-58249	04/05/2012 08:37	20	TAL BUF	CM
A:8270C	480-18049-A-26-A		480-58452	480-58249	04/06/2012 17:20	20	TAL BUF	HTL
A:Moisture	480-18049-A-26		480-58314		04/05/2012 11:21	1	TAL BUF	ZLR

Lab ID: **MB** **Client ID:** **N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:8260B	MB 480-58043/7		480-58043		04/04/2012 11:37	1	TAL BUF	CDC
A:8260B	MB 480-58251/7		480-58251		04/05/2012 12:19	1	TAL BUF	CDC
A:8260B	MB 480-58395/7		480-58395		04/05/2012 22:21	1	TAL BUF	JMB
P:5035	MB 480-58304/2-A		480-58389	480-58304	04/05/2012 10:45	1	TAL BUF	DC
A:8260B	MB 480-58304/2-A		480-58389	480-58304	04/06/2012 05:29	1	TAL BUF	DC
A:8260B	MB 480-58428/6		480-58428		04/06/2012 10:32	1	TAL BUF	CDC
P:5030B	MB 480-58568/5		480-58568		04/07/2012 00:26	1	TAL BUF	DC
A:8260B	MB 480-58568/5		480-58568		04/07/2012 00:26	1	TAL BUF	DC
P:3550B	MB 480-58249/1-A		480-58452	480-58249	04/05/2012 08:37	1	TAL BUF	CM
A:8270C	MB 480-58249/1-A		480-58452	480-58249	04/06/2012 12:33	1	TAL BUF	HTL
P:3510C	MB 480-58531/1-A		480-58601	480-58531	04/06/2012 13:52	1	TAL BUF	DE
A:8270C	MB 480-58531/1-A		480-58601	480-58531	04/07/2012 15:17	1	TAL BUF	HTL
P:3550B	MB 480-58238/1-A		480-58695	480-58238	04/05/2012 08:28	1	TAL BUF	CM
A:8270C	MB 480-58238/1-A		480-58695	480-58238	04/09/2012 19:28	1	TAL BUF	HTL
P:3010A	MB 480-58480/2-A		480-58666	480-58480	04/06/2012 10:50	1	TAL BUF	SS
A:6010B	MB 480-58480/2-A		480-58666	480-58480	04/06/2012 19:03	1	TAL BUF	LH
P:7470A	MB 480-58479/2-A		480-58543	480-58479	04/06/2012 10:40	1	TAL BUF	JRK
A:7470A	MB 480-58479/2-A		480-58543	480-58479	04/06/2012 13:35	1	TAL BUF	JRK
P:7.3.3	MB 480-58610/1-A		480-58611	480-58610	04/06/2012 15:00	1	TAL BUF	JR
A:9012	MB 480-58610/1-A		480-58611	480-58610	04/07/2012 10:53	1	TAL BUF	JR
P:7.3.4	MB 480-58613/1-A		480-58614	480-58613	04/06/2012 15:00	1	TAL BUF	JR
A:9034	MB 480-58613/1-A		480-58614	480-58613	04/06/2012 19:00	1	TAL BUF	JR

Laboratory Chronicle

Lab ID: **LB** **Client ID:** **N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	**Bottle ID**	**Run**	**Analysis Batch**	**Prep Batch**	**Date Prepared / Analyzed**	**Dil**	**Lab**	**Analyst**
P:5030B	LB 480-58276/1-A		480-58568		04/07/2012 02:59	10	TAL BUF	DC
A:8260B	LB 480-58276/1-A		480-58568		04/07/2012 02:59	10	TAL BUF	DC
P:3510C	LB 480-58275/13-D		480-58601	480-58531	04/06/2012 13:52	1	TAL BUF	DE
A:8270C	LB 480-58275/13-D		480-58601	480-58531	04/07/2012 16:29	1	TAL BUF	HTL
P:3010A	LB 480-58275/13-C		480-58666	480-58480	04/06/2012 10:50	1	TAL BUF	SS
A:6010B	LB 480-58275/13-C		480-58666	480-58480	04/06/2012 19:01	1	TAL BUF	LH
P:7470A	LB 480-58275/13-B		480-58543	480-58479	04/06/2012 10:40	1	TAL BUF	JRK
A:7470A	LB 480-58275/13-B		480-58543	480-58479	04/06/2012 13:33	1	TAL BUF	JRK

Lab ID: **LCS** **Client ID:** **N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	**Bottle ID**	**Run**	**Analysis Batch**	**Prep Batch**	**Date Prepared / Analyzed**	**Dil**	**Lab**	**Analyst**
A:8260B	LCS 480-58043/6		480-58043		04/04/2012 11:11	1	TAL BUF	CDC
A:8260B	LCS 480-58251/6		480-58251		04/05/2012 11:53	1	TAL BUF	CDC
A:8260B	LCS 480-58395/6		480-58395		04/05/2012 21:56	1	TAL BUF	JMB
P:5035	LCS 480-58304/1-A		480-58389	480-58304	04/05/2012 10:45	1	TAL BUF	DC
A:8260B	LCS 480-58304/1-A		480-58389	480-58304	04/06/2012 05:07	1	TAL BUF	DC
A:8260B	LCS 480-58428/5		480-58428		04/06/2012 10:05	1	TAL BUF	CDC
P:5030B	LCS 480-58568/4		480-58568		04/07/2012 00:03	1	TAL BUF	DC
A:8260B	LCS 480-58568/4		480-58568		04/07/2012 00:03	1	TAL BUF	DC
P:3550B	LCS 480-58249/2-A		480-58452	480-58249	04/05/2012 08:37	1	TAL BUF	CM
A:8270C	LCS 480-58249/2-A		480-58452	480-58249	04/06/2012 12:57	1	TAL BUF	HTL
P:3510C	LCS 480-58531/2-A		480-58601	480-58531	04/06/2012 13:52	1	TAL BUF	DE
A:8270C	LCS 480-58531/2-A		480-58601	480-58531	04/07/2012 15:41	1	TAL BUF	HTL
P:3550B	LCS 480-58238/2-A		480-58695	480-58238	04/05/2012 08:28	1	TAL BUF	CM
A:8270C	LCS 480-58238/2-A		480-58695	480-58238	04/09/2012 19:52	1	TAL BUF	HTL
P:3010A	LCS 480-58480/3-A		480-58666	480-58480	04/06/2012 10:50	1	TAL BUF	SS
A:6010B	LCS 480-58480/3-A		480-58666	480-58480	04/06/2012 19:06	1	TAL BUF	LH
P:7470A	LCS 480-58479/3-A		480-58543	480-58479	04/06/2012 10:40	1	TAL BUF	JRK
A:7470A	LCS 480-58479/3-A		480-58543	480-58479	04/06/2012 13:37	1	TAL BUF	JRK
A:1010	LCS 480-58632/1		480-58632		04/07/2012 10:41	1	TAL BUF	KS
P:7.3.3	LCS 480-58610/2-A		480-58611	480-58610	04/06/2012 15:00	1	TAL BUF	JR
A:9012	LCS 480-58610/2-A		480-58611	480-58610	04/07/2012 10:53	1	TAL BUF	JR
P:7.3.4	LCS 480-58613/2-A		480-58614	480-58613	04/06/2012 15:00	1	TAL BUF	JR
A:9034	LCS 480-58613/2-A		480-58614	480-58613	04/06/2012 19:00	1	TAL BUF	JR
A:9045C	LCS 480-58572/1		480-58572		04/06/2012 19:50	1	TAL BUF	EGN

Client: CHA Inc

Job Number: 480-18049-1

Laboratory Chronicle

Lab ID: **LCSD**

Client ID: **N/A**

Sample Date/Time: N/A

Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:3510C	LCSD 480-58531/3-A		480-58601	480-58531	04/06/2012 13:52	1	TAL BUF	DE
A:8270C	LCSD 480-58531/3-A		480-58601	480-58531	04/07/2012 16:05	1	TAL BUF	HTL
P:3550B	LCSD 480-58238/3-A		480-58695	480-58238	04/05/2012 08:28	1	TAL BUF	CM
A:8270C	LCSD 480-58238/3-A		480-58695	480-58238	04/09/2012 20:16	1	TAL BUF	HTL

Lab References:

TAL BUF = TestAmerica Buffalo

A = Analytical Method P = Prep Method

Certification Summary

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Buffalo	Arkansas DEQ	State Program	6	88-0686
TestAmerica Buffalo	California	NELAC	9	1169CA
TestAmerica Buffalo	Connecticut	State Program	1	PH-0568
TestAmerica Buffalo	Florida	NELAC	4	E87672
TestAmerica Buffalo	Georgia	State Program	4	956
TestAmerica Buffalo	Georgia	State Program	4	N/A
TestAmerica Buffalo	Illinois	NELAC	5	100325 / 200003
TestAmerica Buffalo	Iowa	State Program	7	374
TestAmerica Buffalo	Kansas	NELAC	7	E-10187
TestAmerica Buffalo	Kentucky	State Program	4	90029
TestAmerica Buffalo	Louisiana	NELAC	6	02031
TestAmerica Buffalo	Maine	State Program	1	NY0044
TestAmerica Buffalo	Maryland	State Program	3	294
TestAmerica Buffalo	Massachusetts	State Program	1	M-NY044
TestAmerica Buffalo	Michigan	State Program	5	9937
TestAmerica Buffalo	Minnesota	NELAC	5	036-999-337
TestAmerica Buffalo	New Hampshire	NELAC	1	2337
TestAmerica Buffalo	New Hampshire	NELAC	1	68-00281
TestAmerica Buffalo	New Jersey	NELAC	2	NY455
TestAmerica Buffalo	New York	NELAC	2	10026
TestAmerica Buffalo	North Dakota	State Program	8	R-176
TestAmerica Buffalo	Oklahoma	State Program	6	9421
TestAmerica Buffalo	Oregon	NELAC	10	NY200003
TestAmerica Buffalo	Pennsylvania	NELAC	3	68-00281
TestAmerica Buffalo	Tennessee	State Program	4	TN02970
TestAmerica Buffalo	Texas	NELAC	6	T104704412-08-TX
TestAmerica Buffalo	USDA	Federal		P330-08-00242
TestAmerica Buffalo	Virginia	NELAC	3	460185
TestAmerica Buffalo	Virginia	State Program	3	278
TestAmerica Buffalo	Washington	State Program	10	C1677
TestAmerica Buffalo	West Virginia DEP	State Program	3	252
TestAmerica Buffalo	Wisconsin	State Program	5	998310390

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

APPENDIX D

In-Situ Treatment Calculation Package

Hydraulic Conductivity Calculations
Congress Street Remediation
CHA 15091

By: W. Pierce
Date: 8/2/12

October/November 2007 Hydraulic Conductivity Data

Well ID	**Screen Interval (ft)**	**Ground Elevation (ft)**	Total Depth (ft)	**Hydraulic Conductivity (cm/sec)**	**Hydraulic Conductivity (ft/sec)**	
OW15A	10	320.35	20	2.23E-05	7.32E-07	
OW16A	10	305.43	18	2.54E-04	8.33E-06	
OW17B	10	305.19	33	4.31E-04	1.41E-05	Screen depth below 20 ft
OW18A	10	304.18	30	9.05E-05	2.97E-06	Fill to 24 ft bgs
OW19A	10	302.76	27	2.21E-04	7.25E-06	Fill to 28 ft bgs
OW20	10	305.74	18	2.58E-04	8.46E-06	
OW21A	10	303.53	18	1.58E-04	5.18E-06	
OW21B	10	303.67	33	1.46E-04	4.79E-06	Screen depth below 20 ft
OW22	10	302.62	18.5	1.26E-04	4.13E-06	

Gray Wells are not used in Hydraulic Conductivity Calculations, explination to the right of the Hydraulic Conductivity column

	Hydraulic Conductivity (ft/sec)	Hydraulic Conductivity (ft/min)
Average	5.37E-06	**3.22E-04**
High - OW17B	1.41E-05	8.48E-04
Low - OW15A	7.32E-07	4.39E-05
Standard Deviation	3.22E-06	1.93E-04

April 2012 Hydraulic Conductivity Data

Well ID	**Screen Interval (ft)**	**Riser Radius (ft)**	**Screen + Sand Pack Radius (ft)**	**Total Depth (ft)**	**Time to 37% recovery (sec)**	**Hydraulic Conductivity (ft/sec)**	
EW3	15	0.25	0.51	20.00	1185	5.94E-06	
PZ1	15	0.25	0.51	20.00	8385	8.40E-07	
PZ2	15	0.25	0.51	20.00	42000	1.68E-07	
OW22	10	0.25	N/A	18.50	N/A	N/A	Drawdown less then 5 inches
EW4	15	0.25	0.51	20.00	1455	4.84E-06	
PZ3	15	0.25	0.51	20.00	9045	7.79E-07	
PZ4	15	0.25	0.51	20.00	1095	6.43E-06	Incomplete data
OW17B	10	0.25	N/A	33.00	N/A	N/A	Drawdown less then 6 inches

Gray Wells are not used in Hydraulic Conductivity Calculations, explination to the right of the Hydraulic Conductivity column

	Hydraulic Conductivity (ft/sec)	**Hydraulic Conductivity of EW3 & EW4 (ft/min)**
Average	2.51E-06	**3.24E-04**
High - EW3	5.94E-06	
Low - PZ3	7.79E-07	
Standard Deviation	2.68E-06	7.79861E-07

Equations used:

$K = r^2 * Ln (L/R)/2*L*T_o$

H = Water column height at static level
Ho = Water column height at t = 0 (lowest level)
h = water column height at t > 0
T_o (Basic Time Lag Function) is time in seconds at (H-h)/(H-Ho) = .37

r = casing radius
L = screen length
R = Borehole radius

Data for T_o can be found at M:\15091\CS\Phase 2 Design\Pumping Well Spacing.xlsx, sheets EW3 and EW4 test results

Data is also represented at M:\15091\CS\Phase 2 Design\5007 Phase II\Report\Appendices\App B Pre-Design Investigation Report 8_14_12.pdf

Pumping Well Configuration
Congress Street Remidiation
CHA 15091

By: W. Pierce
Date: 8/2/12

	Known Parameters	
EW3	Ground Surface Elevation (ft asl)	302
	Static WL (ft)	290.12
	Aquifer Base (ft)	270.00
	Water Column height (ft)	20.12
	Pumping WL (ft)	283.43
	Drawdown (ft) (went dry)	6.69
	WT Height over aq base (pumping) (ft)	13.43
	Pumping Rate (cft / min)	0.06684
EW4	Ground Surface Elevation (ft asl)	304
	Static WL (ft)	288.44
	Aquifer Base (ft)	270.00
	Water Column height (ft)	18.44
	Pumping WL (ft)	282.86
	Drawdown (ft) (went dry)	5.58
	WT Height over aq base (pumping) (ft)	12.86
	Pumping Rate (cft / min)	0.06684
	Distance EW3 to EW4 (ft)	120
	w (recharge rate (ft/min)	1.87E-06
	K (ft/min) - 2007 calculations	3.22E-04
	K (ft/min) - 2012 calcs	3.24E-04
	Pumping Rate (cu ft/min)	0.13368
	2007 Transmissivity (sq ft/min)	6.21E-03
	2012 Transmissivity (sq ft/min)	6.24E-03
	Specific Yield	0.2

Average of EW3, EW4 Calculations	
Ground Surface Elevation (ft asl)	303.00
Static WL (ft)	289.28
Aquifer Base (ft)	270.00
Pumping WL (ft)	283.15
Drawdown (ft)	6.14
WT Height over aq base (pumping) (ft)	13.15
Static WL height over Aq Base(ft)	19.28

Midpoint Water Level Values for Groundwater Height over aq base (ft)	
2007 WL (ft)	16.02
Drawdown (ft)	2.99
adjusted according to Neuman	
2012 WL (ft)	16.01
Drawdown (ft)	3.00

Well Funtion	
2007 w(u)=	1.746
2012 w(u)=	1.759
2007 u value	0.091
2012 u value	0.087
u values estimated from Theis Curve	

Estimated Water Level Drawdown (2007 K value)	
Distance (ft)	20
Drawdown (ft)	6.14
Midpoint GW Level Over Aquifer Base (ft)	13.2354
Midpoint Drawdown (ft)	5.93
Time to stabilization (days)	24.59

Estimated Water Level Drawdown (2012 K value)	
Distance (ft)	20
Drawdown (ft)	6.14
Midpoint GW Level Over Aquifer Base (ft)	13.2351
Midpoint Drawdown (ft)	5.93
Time to stabilization (days)	25.60

.06684 cft/min = .5 gal/min
.13368 cft/min = 1 gal/min

Assumptions:

1. Recharge rate is correct, based on Moret, 2007, Annual Variations In Ground-Water Temperature As a Tracer of River-Aquifer Interactions: .3 m/yr of recharge.
2. Aquifer base is 270 ft asl. Figure used because of local characteristics of the subsurface (clay present in multiple well logs around 270 ft asl).
3. Pizeometer reading is taken from the bottom of the well (20 ft) rather then slightly above.
4. Aquifer characteristics (recharge, Transmissivity, etc) are uniform throughout test area.
5. Soil/subsurface is homogenous.
6. A 6.14 ft drawdown is assumed in each pumping well because the test pumping wells each went dry during pumping.

Radius of Influence
Congress Street Remediation
CHA 15091

Calculated by: K. Owens
Date: 8/27/12

Notes

1. Induced vacuums and spacing are based on Pre-Design Investigation completed by CHA in 2012
2. Equation is from the following paper: Johnson, P.C. et. al, *A Practical Approach to the Design, Operation, and Monitoring of In Situ Soil-Venting Systems.* Ground Water Monitoring Review, 1990.
3. Calculations shown below were used as a calculator and can only show one case at a time.
4. Monitoring wells spaced 10 feet from the extraction well are the best representative of proposed conditions.
5. Visual of the chart is included as an attachment to this document.

Equation 22

$$P(r) = P_w \left\{ 1 + \left[1 - \left(\frac{P_{atm}}{P_w} \right)^2 \right] \frac{\ln\left({}^{r}/_{R_w} \right)}{\ln\left({}^{R_w}/_{R_1} \right)} \right\}^{\frac{1}{2}}$$

Key

🟨	Input Value
*	Value det. From Investigation

Constant Inputs				**Notes**
Absolute Atmospheric Pressure	Patm	2116	psf	
Radius of Observation*	r	10	ft	
Radius of Well*	Rw	0.17	ft	4" diameter well

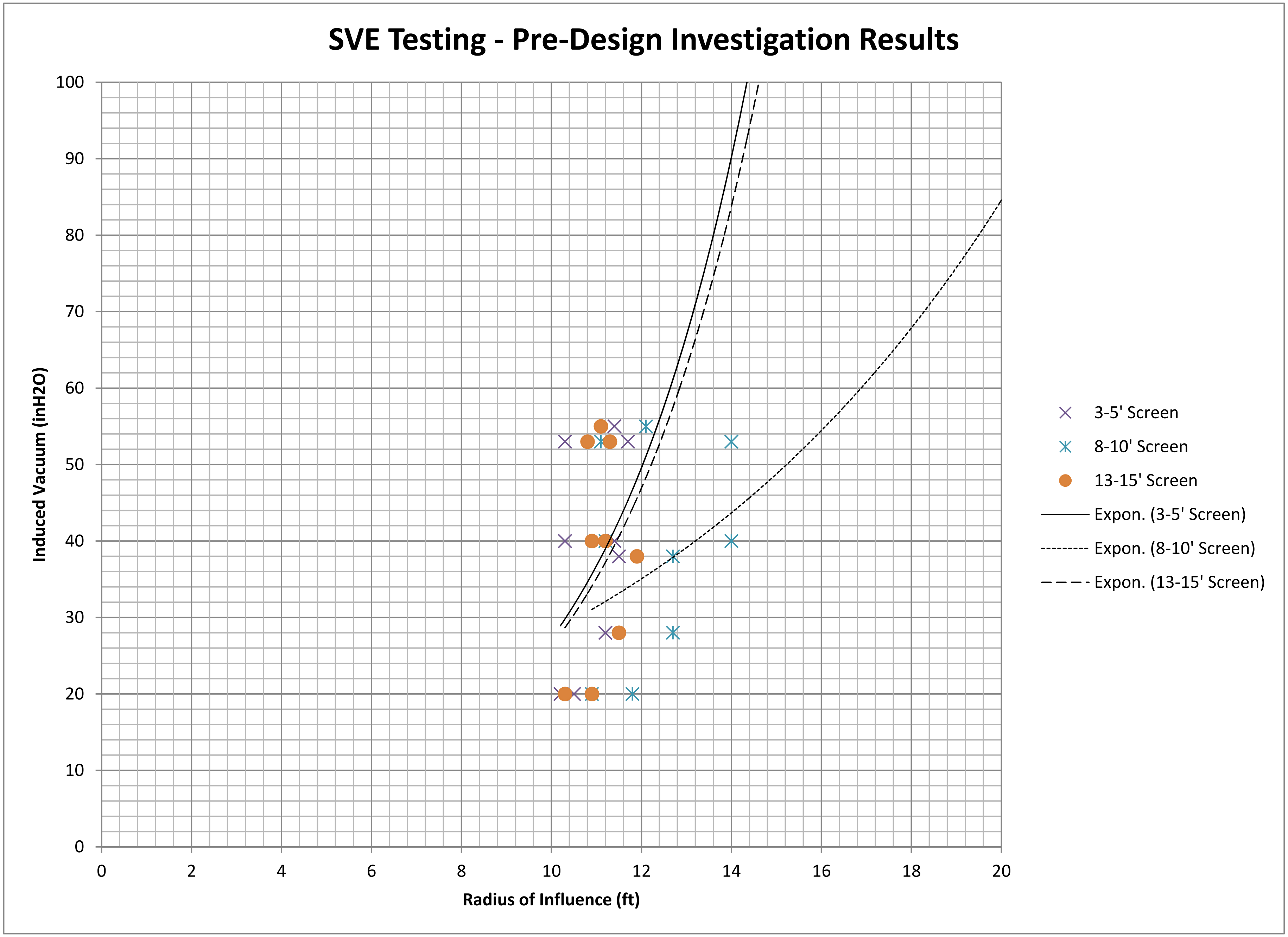
Field Observation Summary

Well	Induced Vac - Pw (inH2O)	Observed Vacuum - P(r) (inH2O)		
		3-5'	8-10'	13-15'
VW-2	20	0.5	1.5	0.3
	40	1.2	2.9	1.00
	53	1.8	3.8	1.40
VW-4	20	0.1	0.4	0.4
	40	0.25	1.0	0.75
	53	0.4	1.25	0.9
VW-6	28	0.75	1.5	0.9
	38	1.2	2.0	1.5
	55	1.6	2.25	1.3

Radius of Influence Summary

Well	Induced Vac - Pw (inH2O)	ROI - R1 (ft)		
		3-5'	8-10'	13-15'
VW-2	20	10.5	11.8	10.3
	40	11.4	14.0	11.20
	53	11.7	14.0	11.30
VW-4	20	10.2	10.9	10.9
	40	10.3	11.2	10.9
	53	10.3	11.1	10.8
VW-6	28	11.2	12.7	11.5
	38	11.5	12.7	11.9
	55	11.4	12.1	11.1

Results From Attached Chart		
3-5' Screen ROI at 80inH2O	13.6	ft
8-10' Screen ROI at 80 inH2O	13.9	ft
13-15' Screen ROI at 80 inH2O	19.6	ft
Average for Design	*15.7*	*ft*



SVE Testing - Pre-Design Investigation Results
Induced Vacuum (inH2O)
100
90
80
70
60
50
40
30
20
10
0
0
2
4
6
8
10
12
14
16
18
20
Radius of Influence (ft)
3-5' Screen
8-10' Screen
13-15' Screen
Expon. (3-5' Screen)
Expon. (8-10' Screen)
Expon. (13-15' Screen)

Pore Volume Determination
Congress Street Remediation
CHA 15091

By: K. Owens
Date: 8/1/12

References

1. Holtz & Kovacs, An Introduction to Geotechnical Engineering. Prentice-Hall, 1981. p12-15

Bulk Volume				**Notes**	**Key**	
Treatment Area	A	30700	sf	Est. from Drawing G-01	🟨	Input Value
Depth of Treatment	b	15	ft	Depth to top of dewatered groundwater table	*	Det. From Field Tests
Total Treatment Vol.	Vt	460500	cf			

Soil Parameters				Reference 1 used for parameter relationships
Total Soil Density	pt	110	pcf	Determined from boring logs
Water Density	pw	62.4	pcf	Constant value
Porosity - bulk	n	0.35		Determined from boring logs
Water Content	w	35%		Determined from laboratory testing
Saturation	S	57%		S=w*pw/(n*pt)
Volume of Voids	Vv	161175	cf	Vv=n*Vt
Volume of Water	Vw	91430.2	cf	Vw=S*Vv
Porosity - air	na	0.15145		na=(Vv-Vw)/Vt
Volume of Air	*Va*	*69745*	*cf*	Va=na*Vt, Equivalent to 1 pore volume

Maximum Well System Flow
Congress Street Remediation
CHA 15091

By: K. Owens
Date: 8/1/12

References

1. USACE, *EM 1110-1-4001* . June 1992.

Goal

1. Determine the maximum air flow for one well at induced vacuum of 80inH2O and maintaining minimum vacuum of 0.1 inH2O at 15feet.

Assumptions

1. Nodal point for system design is 15 feet based on groundwater extraction well spacing.
2. Minimum required vacuum at nodal point (NP) is 0.1 inH2O.
3. Pressure induced in the extraction well is approximately equal to the pressure observed at the radius of the well

Equation 2-20b

$$Q_w = \frac{(P^2 - P_i{}^2)\pi b k_a}{P^* \mu \ln\left(\frac{r}{r_i}\right)}$$

Key

🟨	Input Value
*	Det. From Field Investigation

Parameters				**Notes**
Pressure at Radius of Well	P	80	inH2O vac.	Induced well pressure
		1699	psf	
Minimum Req. Pressure	Pi	0.1	inH2O vac.	Assumption 2
		2114.84	psf	
Absolute Pressure at Well	P*	1699	psf	Assumption 3
Vadose Zone Thickness	b	15	ft	Depth to top of groundwater table
Air Viscosity	µ	3.82E-07	lb-s/ft	Based on temperature of 70°F
Intrinsic Permeability	ka	4.0E-12	ft^2	See below for calculation
Radius of Well	r	0.17	ft	4-inch diameter casing
Radius of Nodal Point	ri	15	ft	Assumption 1

Intrinsic Permeability

$$k_{int} = k_a = \frac{k_w \mu_w}{\rho_w g}$$

Hydraulic Conductivity	kw	3.24E-04	ft/min	Determined from groundwater pumping tests
Water Viscosity	µw	1.49E-03	lb-s/ft	
Density of Water	pw	62.4	lb/cf	
Acceleration due to Gravity	g	32.2	ft/s^2	
Intrinsic Permeability	*k_{int}*	*4.0E-12*	*ft^2*	kint=kw*uw/(pw*g)

Flow Rate

Flow Rate per Well	Qw	6.17	cfm	
Flow Rate for System	*Qt*	*500*	*cfm*	81 SVE wells
One Pore Volume Exchange	Qpv	48	cfm	Determined in "Pore Volume Determination" by CHA
Total Max Pore Vol.		*10.4*		

APPENDIX E

Soil and Stormwater Management Plan

Soil and Stormwater Management Plan – Phase 2 Remedial Activities

SI Group Congress Street Facility
Operable Unit No. 2

State Superfund Project
Site No. 447007

CHA Project Number: 15091

Prepared for:
SI Group, Inc.
1000 Main Street, Route 5S
Rotterdam Junction, New York

Prepared by:

CHA

III Winners Circle
Albany, New York 12205
(518) 453-4500
(518) 453-4773 - Fax

August 2012

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LIST OF FIGURES

1.0 INTRODUCTION

This Soil and Stormwater Management Plan has been prepared for the Congress Street facility, which is a former chemical manufacturing facility located in Schenectady, New York at Congress Street and Tenth Avenue. A site location map has been included as Figure 1. The Soil and Stormwater Management Plan will provide a basis for defining the procedures and requirements to be followed during the implementation of the Phase 2 remedial activities at the Congress Street Site. Due the nature and distribution of contamination, the Site has been divided into two areas for remediation. These two areas have been identified as the Fill Area and the Process Area, as shown in Figure 2.

1.1 SITE DESCRIPTION

The Congress Street facility (Site) encompasses an area approximately 7 acres in size with approximately 5.1 acres having been developed. The surrounding areas to the south and west of the Site consist of light industrial areas. Commercial facilities are located east and northwest while the areas to the north and northeast are mainly residential.

The Site is located on a steep slope that was developed over the years. Production ceased in 1997 and, in 2004, SI Group removed all the process equipment, storage tanks, piping and buildings remaining on the Site except for a small building used to house a groundwater treatment system. Some of the buildings were constructed such that the lower portion of the buildings acted as retaining structures for the upper slope area. The relief across the Site is approximately 45 feet, with several relatively flat surfaces where buildings once existing. The buildings structures that were located above ground were removed, with only the building foundations and concrete floor slabs left in place.

Based upon the remedial investigations completed on the Site, two areas were identified as requiring remediation. These areas as shown on Figure 2 are identified as the Fill Area and the Process Area. The Fill Area is an historical fill area located in the southeast corner of the Site that encompasses approximately 0.5 acres. The area is bordered on the north by the embankment leading up to 10th Avenue, to the west and south by the security fence, and to the east by the middle of the former Building No. 9. The area was used for the disposal of construction rubble and other material and debris generated on-site.

Borings completed in the Fill Area show a mix of ash, glass, bricks, burlap fabric and organic materials. The organic materials observed were a black tar-like material, a yellow crystalline material and a white powder. The black tar-like material (cresols) and the yellow crystalline material are representative of the insulating resins produced at the facility and the white powder is representative of the raw materials used. The upper portion of the borings consisted of construction debris, which is representative of the houses that were disposed in the area prior to closure. Ash was also seen in a number of the boring at all depths.

The Process Area consists of the area of the Site that was historically used for chemical processing, storage and handling. This area is located east of the Fill Area on the lower level of the Site, just north of the rail line. The contamination that has been identified in this area is the result of releases that have occurred over the years. A layer of black tar-like material (cresols) has also been identified as being present under the concrete slabs.

The results of the remedial investigations that were completed in the each area are contained in the final submission of the “Updated Remedial Investigation Report” dated January 2009 and should be used as a reference when intrusive activities are conducted at the Congress Street site.

1.2 PURPOSE OF THE SOIL AND STORMWATER MANAGEMENT PLAN

The remedial activities proposed in Phase 2 will include minimally intrusive activities such as the installation of groundwater extraction wells, conductive soil heating wells and soil vapor extraction (SVE) wells in the Process Area, which currently consists of an approximate 3-inch thick asphalt cap. Currently, all work associated with the Phase 2 remedial activities will be conducted on the asphalt cap. The purpose this Soil and Stormwater Management Plan is to specify the procedures to be taken during:

- Installation of the groundwater extraction, conductive soil heating and SVE wells;
- Sampling and assessment of the waste materials generated (e.g., soil, water);
- Management of the waste materials;
- Disposition of waste materials; and
- Management of the site stormwater.

2.0 DEFINITIONS

The following definitions are being used in the Soil and Stormwater Management Plan:

- Clean soil – soils that are not visually contaminated and organic vapor analyzer (OVA) readings are within 25 parts per million by volume (ppmv) of background levels.
- Contaminated soils – soils that are visually contaminated and/or have OVA readings greater than 25 ppmv above background levels.
- Potentially contaminated stormwater - any stormwater that comes in direct contact with the contaminated soils on site.

3.0 STORMWATER MANAGEMENT

The purpose of this section is to establish the appropriate protocol for site management of stormwater during the remedial activities that will be completed at the Congress Street Site.

3.1 EXISTING STORMWATER SYSTEMS

The Congress Street Site has two outfalls (001 and 002) that are permitted under the current SPDES Permit (NY 0260525). The SPDES Permit allows SI Group to discharge treated groundwater from the groundwater treatment system and storm water that is collected on-site. Outfall 001 is the discharge point located on the side of the hill that is connected to the storm sewer system, which collects the storm water along the plant road in the northwest corner of the Site as shown in Figure 3. The discharge from the groundwater treatment system is also discharged through Outfall 001.

Outfall 002 is a corrugated pipe located along the western side of the facility as shown in Figure 3. Outfall 002 discharges the storm water that accumulates in the sediment pond located adjacent to the groundwater treatment building. The outfall pipe from the sediment pond has been temporary plugged to prevent any discharged at this time. Stormwater runoff from the remaining areas of the facility either percolates into the ground or sheet flows into the surrounding area.

The SPDES Permit only allows SI Group to discharge stormwater runoff from these two outfalls and does not allow the discharge of any contaminated stormwater. In addition, the Permit has effluent limits that include the amount of suspended and dissolved solids contained in the stormwater.

It is anticipated that contaminated storm water will not be generated during Phase 2 remedial activities due to the asphalt cap over the Process Area and the type of drilling methods (i.e., sonic) expected to be implemented. Through the use of sonic drilling methods, contaminated soil will be generated in a sleeve and directly transferred to a waste disposal container (e.g., 55-gallon drum or roll-off container). Therefore, contaminated soil should not come into contact with the asphalt cap and stormwater runoff within the Process Area.

Stormwater runoff from the asphalt cap will be allowed to sheet flow off the asphalt and percolate into the site soils as is currently occurring. If stormwater runoff does come in contact with contaminated soil that would potentially flow off-site, it will be contained and collected in temporary on-site holding tanks. The potential contaminated stormwater will be either treated on-site via the groundwater treatment facility or sent off-site for treatment based on approval from NYSDEC and SI Group.

The SPDES Permit does not allow the discharge of any wastewater that may be generated as part of the Phase 2 remedial activities. Unless approval is obtained from NYSDEC by SI Group, wastewater that is generated as a result of remedial activities cannot be sent to the groundwater treatment system for treatment. All wastewater must be collected and sent to either the on-site treatment system following NYSDEC approval or sent off-site for treatment.

3.2 WEATHER

Weather conditions should continuously be monitored. Extreme weather conditions such as high wind conditions, high temperatures, and intense rainfalls should be specifically monitored. These conditions may limit site activities and as a last resort remedial activities may need to be suspended until weather conditions improve.

The following techniques should be considered to control the potential release of materials during extreme weather conditions:

- Monitor vehicle traffic leaving site to minimize material being track off-site;
- Monitor site conditions and stormwater runoff;
- Hauling materials in properly tarped or watertight containers; and
- Limiting site access and transport of material from the site.

4.0 INTRUSIVE ACTIVITIES

Phase 2 remedial activities will include the installation of groundwater extraction, conductive soil heating and SVE wells and associated equipment and apparatus within the Treatment Area of the Process Area. During well installation activities, grossly contaminated soils may be encountered in the Process Area that will require containerization and off-site disposal. In addition, wastewater generated during remedial activities may also require off-site transportation and disposal. The following procedures shall be followed in the characterization, management and disposal of the soils, water and other materials that may be generated as part of the remedial activities.

4.1 SAMPLING

During well installation activities, soils generated shall be screened for any field evidence of contamination (visual and olfactory). In addition, the soil shall be screened using an OVA or equivalent meter. The measurement shall be taken by passing the instrument directly over the surface of the soil, immediately following generation. Any soil that is determined to be potentially contaminated based on field observation should be placed in a 55-gallon drum or roll-off container. If no contamination is detected in the soil, the soil should be segregated as clean soil and temporarily stored in a container. The asphalt cap should not be used for the storage of any soil. Any soil that comes in contact with the asphalt pad should be cleaned up within a reasonable time period and placed in a container for future disposition.

Field notes shall be maintained including date, time and location of the measurements and visual observations.

4.2 SOIL GENERATION

The soils generated in support of other remedial activities shall be managed based on the visual screening and OVA readings collected during generation. Based on this screening, the generated soils shall be characterized as either clean soil or contaminated soil as defined in Section 2.0. The management and use of the excavated soils will be based on the classification of the soils as they are excavated.

4.3 ON-SITE RE-USE OF SOILS

Soils that are classified as clean soil can be placed within the Fill or Process Area, or back within an excavation following NYSDEC and SI Group approval.

4.4 SOIL MANAGEMENT

Any soil generated that is identified as being contaminated soil shall be segregated and managed using the following procedures:

- Contaminated soils shall be managed separately.
- Contaminated soils shall either be temporarily placed in covered roll off containers or 55-gallon drums. Approval must be obtained from SI Group on the area to be used for the temporary staging of contaminated soil.
- The roll off or other type of container shall be covered when soil is not being added to or removed from the container.
- Containers of soil must be properly labeled with a unique identification number and the date(s) of accumulation.
- If soils from several locations are placed in the same container without segregation, the final disposition of the entire container contents shall be based upon the worst case classification.

4.5 ASPHALT MANAGEMENT

Asphalt and the associated sub-base material that is removed as part of the Phase 2 remedial activities should be handled as clean construction debris unless it is mixed with contaminated soils. Any asphalt or sub-base material that is mixed with contaminated soils shall be handled separately and disposed off-site at a permitted facility that is approved by SI Group.

Any contaminated asphalt shall be segregated and managed using the following procedures:

- Contaminated asphalt shall be placed in covered roll off containers, or other containers. Approval must be obtained from SI Group on the area to be used for the temporary staging of contaminated asphalt.
- The roll off or other type of container shall be covered when asphalt is not being added to or removed from the container.
- Containers of asphalt must be properly labeled with a unique identification number and the date(s) of accumulation.
- If asphalt from several locations is placed in the same container without segregation, the final disposition of the entire container contents shall be based upon the worst case classification.
- Contaminated asphalt shall be disposed off-site at a permitted facility approved by SI Group. Testing of the contaminated asphalt shall be based on the requirements of the approved disposal facility.

4.6 WASTE MANAGEMENT

Waste materials removed as part of the remedial activities shall be segregated and managed using the following procedures:

- Roll off containers, 55-gallon drums or other types of containers shall be used.
- The container(s) shall be securely covered when waste materials are not being added to container.
- The containers shall be properly labeled with a unique identification number and the date(s) of accumulation. A record shall be maintained describing the type of waste material that is placed in each container.
- The waste material shall be disposed off-site at a permitted facility based on the characterization of the waste. Testing of the waste material shall be based on the requirements of the permitted disposal facility.

4.7 TRANSPORTATION OF CONTAMINATED MATERIAL

Contaminated soils and waste materials must comply with the following procedures. Following proper characterization, approval from SI Group, and approval from the permitted disposal facility, the contaminated soils and/or waste materials will be loaded into the appropriate transport containers and covered to prevent airborne migration of the contaminants when leaving the Site and during transportation. All waste will be transported in accordance with the New York State Department of Transportation (NYSDOT) requirements. All necessary waste documentation (e.g. waste manifests or bills of lading) will be supplied by the waste facility and submitted to SI Group for approval and record keeping purposes.

The remedial Contractor must comply with all federal, state, and local regulations regarding transportation and disposal of contaminated soils and waste materials. These include, but are not limited to, the following:

1. Trucks used for transportation of material for disposal off-site shall be permitted pursuant to 6 NYCRR Part 364.

2. Vehicle operator must possess a valid commercial driver’s license with hazardous materials endorsement (if applicable).

3. Registration of the vehicle as a hazardous waste carrier (if applicable).

4. Utilization of shipping papers and/or hazardous waste manifests (6 NYCRR Part 372).

5. Proper marking and placarding of vehicles.

6. Placement of emergency response procedures and emergency telephone numbers in vehicle, and operator familiarity with emergency response procedures.

7. Compliance with load height and weight regulations.

4.8 OFF-SITE DISPOSAL

The use of any off-site disposal facility must be permitted to receive the waste material and must be approved by SI Group prior to being used. Documentation must be provided to SI Group of all waste shipments.

5.0 MODIFICATION OF PLAN

Any proposed change or deviations to the procedures specified in the Soil and Storm Water Management Plan must be initially approved by SI Group or their designated representative, and the on-site NYSDEC representative. Approval by SI Group and the on-site NYSDEC representative is required before any proposed change or deviation to the procedures is implemented. All changes or deviations to the procedures should be documented.

FIGURES

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Main: (518) 453-4500 · www.chacompanies.com

SITE LOCATION

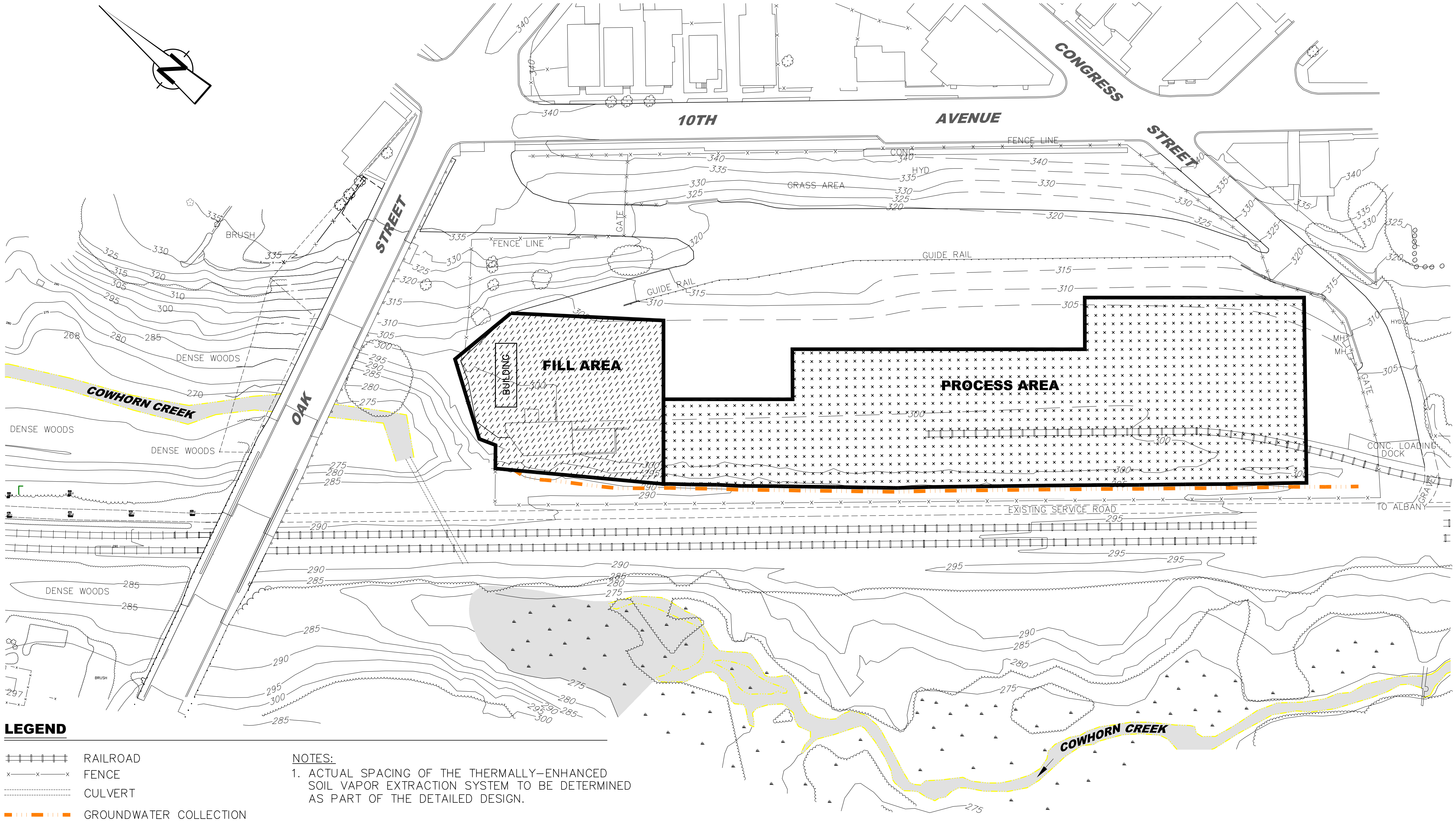
CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

PROJECT NO.
15091

DATE: 01/10/2011

FIGURE 1

File: M:\15091\CS\PHASE I DESIGN\CADD\ACAD\FIGURES\FIGURE 1.DWG Saved: 1/10/2011 11:37:33 AM Plotted: 1/10/2011 11:39:06 AM User: Newell, Sarah



LEGEND

╪╪╪╪╪╪ RAILROAD

—×—×— FENCE

┄┄┄┄┄ CULVERT

▬ ╎╎╎ ▬ GROUNDWATER COLLECTION TRENCH

—300— CONTOUR WITH ELEVATION

▨ FILL AREA

⊠ PROCESS AREA

NOTES:

1. ACTUAL SPACING OF THE THERMALLY–ENHANCED SOIL VAPOR EXTRACTION SYSTEM TO BE DETERMINED AS PART OF THE DETAILED DESIGN.

0 80 160
Scale in feet

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SITE PLAN
SOIL AND STORMWATER MANAGEMENT PLAN
CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

PROJECT NO.
15091.4007.31000

DATE: 1/11

FIGURE 2

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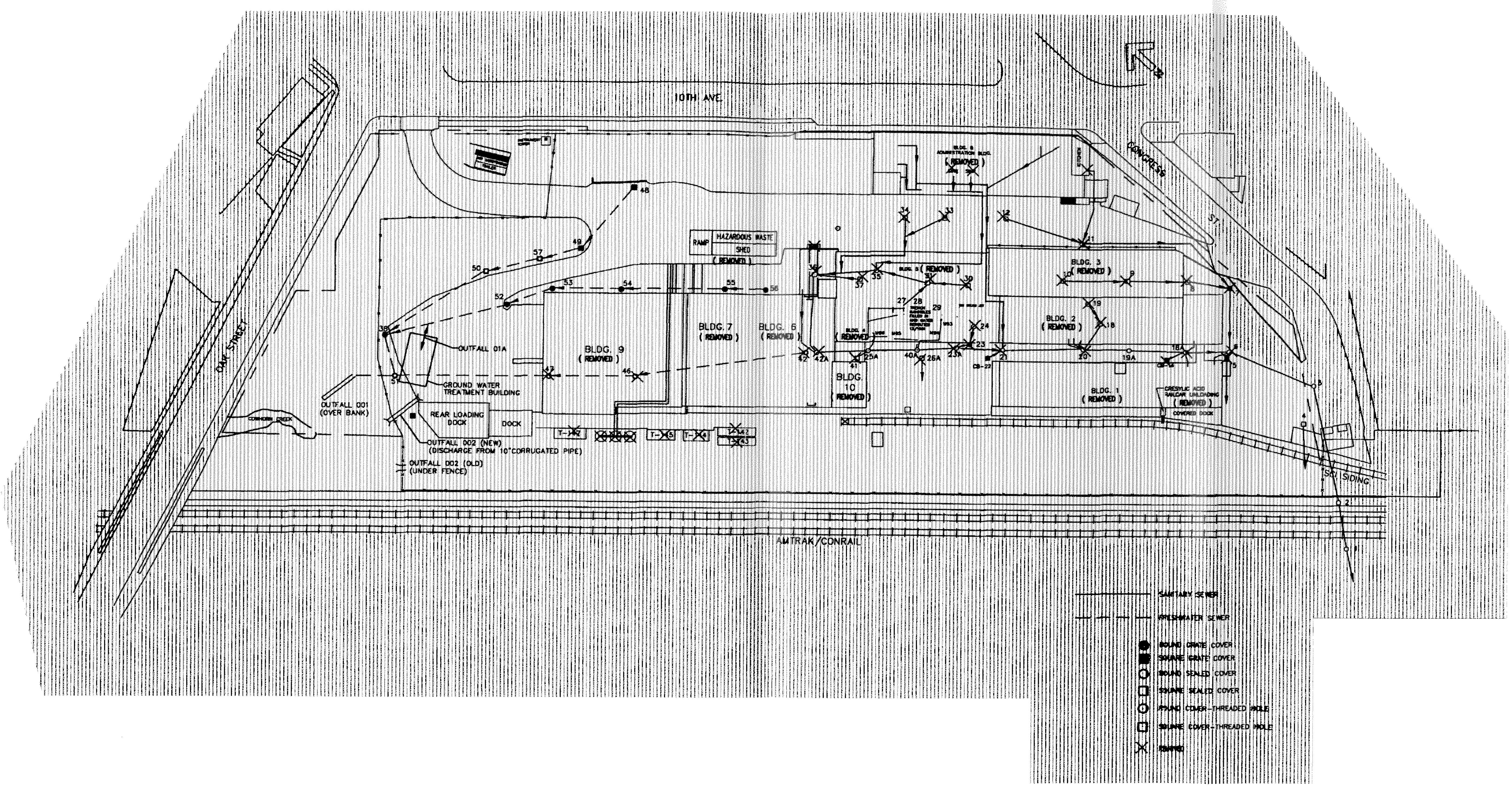

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SPEDES OUTFALL LOCATION PLAN
SOIL AND STORMWATER MANAGEMENT PLAN

CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

PROJECT NO.	15091.4007.31000
DATE:	1/11
FIGURE 3	

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APPENDIX F

Health & Safety Plan

Health and Safety Plan

Phase 2 Remedial Activities
Operable Unit No. 2

SI Group Congress Street Facility
Site No. 447007

CHA Project Number: 15091

Prepared for:
SI Group, Inc.
1000 Main Street, Route 5S
Rotterdam Junction, New York

Prepared by:

CHA

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(518) 453-4500
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September 2012

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LIST OF FIGURES

1.0 INTRODUCTION

This Health & Safety Plan (HASP) has been created for the protection of on-site personnel during the Phase 2 installation activities to be conducted at the Congress Street Facility (Site) of SI Group, Inc. located in the City of Schenectady, New York (Figure 1). This project's various assignments require on-site personnel to perform tasks where personal safety could be compromised due to chemical, physical, and/or biological hazards.

The requirements and guidelines in this HASP are based on a review of available information and an evaluation of potential hazards. This HASP will be discussed with site personnel and will be available at the Site for review while work is underway. All personnel will report to the Site Safety Officer (SSO) at the Site in matters of health and safety. The SSO is responsible for ensuring compliance with this Plan and stopping work when necessary, as well as implementing this Plan into daily site activities.

Non-intrusive activities such as installation of the piping, instrumentation and equipment are those that do not have the potential to jeopardize the health and safety of site workers, the public, or the environment with respect to site contaminants. Intrusive activities such as well installation are those that have the potential to cause health and safety concerns to site workers, the public, or the environment with respect to site contaminants. These activities and any non-intrusive activities conducted in an Exclusion Zone require training per 29 CFR 1910.120 which govern work on hazardous waste sites.

2.0 PURPOSE OF THE HEALTH AND SAFETY PLAN

The purpose of this HASP is to provide specific guidelines and establish procedures for the protection of on-site personnel during the activities conducted at the Site. This Plan is based upon previous studies and information available to date.

It is noted that the policies and procedures set forth by this Plan constitute a minimum level of protection for on-site workers. The Remedial Contractor performing the work will be required to prepare and implement a separate site-specific HASP that addresses the specific on-site activities to be conducted by the Remedial Contractor. All employees and subcontractors of the Remedial Contractor will be required to abide by **both** Remedial Contractor's site-specific HASP and the minimum requirements set forth in this HASP.

Additional personnel covered by this HASP include:

- CHA employees
- SI Group employees
- Remedial Contractor personnel
- Any subcontractors performing work at the Site related to the Remedial Activities
- New York State Department of Environmental Conservation (NYSDEC) personnel
- Other Site visitors directly involved with Phase 2 Remedial Activities

This HASP has been developed in accordance with the requirements set forth in 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response; Final Rule.

3.0 EMERGENCY CONTACTS

Police Department:	911 or 518-382-5200
Ambulance:	911 or 518-374-4401
Fire Department	911 or 518-382-5141
Poison Control Center	(800) 252-5655
Dig Safe or One Call Center	1-800-DIG-SAFE
SI Group, Inc.	
General	518-347-4333
Emergency Contact	518- 347-4345
(Available 24 Hours/Day)	

Hospital Directions:

- Start out going SOUTHEAST on 10TH AVE toward CONGRESS ST. (<0.1 miles)
- Turn SLIGHT LEFT onto 9TH AVE. (0.2 miles)
- Turn LEFT onto CRANE ST. (0.7 miles)
- CRANE ST becomes BROADWAY. (0.6 miles)
- Turn LEFT onto STATE ST / NY-5. (<0.1 miles)
- Turn RIGHT onto ERIE BLVD. (0.6 miles)
- Turn RIGHT onto NOTT ST. (0.8 miles)
- Turn left at Lowell Road into Ellis Hospital Entrance
- Follow Signs to Emergency Dept.

(See attached Hospital Location Map)

Hospital Name:	Ellis Hospital
Address	1101 Nott Street Schenectady, New York 12308

NYSDEC Oil and Chemical Spill Reporting: 1-800-457-7362 (24 hours a day)

4.0 GENERAL SITE INFORMATION

Project Number:	15091
Client:	SI Group, Inc.
Client Contact (give name and phone):	Mr. Chuck Gardner (518-347-4256) or Mr. Kevin Kogut (518- 347-4308)
Site/Property ID:	Congress Street Facility
Address:	Congress Street, Schenectady, Schenectady County, New York
Work Tasks:	- Installation of the in-situ site treatment system including groundwater extraction, soil vapor extraction (SVE) and conductive soil heating wells - Install all piping, equipment, apparatus, etc. associated with the in-situ site treatment systems
Duration:	Anticipated four (4) months.
Will subcontractors be used?	Yes, a subcontractor for the installation of the systems associated with groundwater extraction, SVE and soil heating. Additional subcontractors may be required by the Remedial Contractor.

5.0 KEY PERSONNEL

The implementation of this HASP will be the coordinated effort of the CHA project team consisting of hydrogeologists, geologists, chemists, and engineers experienced with hazardous waste site characterization and remediation. The team will consist of a Project Manager, Site Safety Officer, as well as Task Leaders and additional staff as necessary. The following paragraphs identify the key CHA project personnel and briefly describe the health and safety designations and general responsibilities that will be used at this site.

PROJECT MANAGER	The Project Manager (PM) is responsible for communicating any applicable information to the Health and Safety Manager so that when the HASP is written, all potential hazards have been evaluated. The PM is responsible for ensuring that the requirements stated in this HASP are complied with during all site activities. The PM is responsible for ensuring an adequate budget to cover the costs of air monitoring, personal protective equipment, and other health and safety supplies needed to perform work safely at the site. The PM is also responsible for ensuring that the Site Safety Officer is informed of any unexpected incidents that occur on the site.
SITE SAFETY OFFICER	The SSO is responsible for ensuring the procedures outlined in the HASP are followed by all on-site personnel at all times on a site. The SSO will also be responsible for conducting site safety meetings before the commencement of work to review the HASP with on-site personnel. In addition to these duties the SSO, or designee, is responsible for the following: - Determining or changing the levels of personal protection based on site observations; - Conducting required air monitoring on this site; - Stopping work, if required, to protect worker safety or where noncompliance with health and safety requirements is found; - Informing personnel (other than team members) who want access to work areas of the potential hazards of the site; - Updating health and safety equipment requirements or procedures based on new information gathered during the investigation; and, - Monitoring compliance with the health and safety requirements and informing the Project Manager of any deficiencies. Any changes in site conditions that may require a modification to the HASP will be coordinated between the SSO and/or PM.

6.0 SITE CHARACTERIZATION

6.1 SITE DESCRIPTION AND HISTORY

The SI Group owned and operated a chemical manufacturing facility located in Schenectady, New York at Congress Street and Tenth Avenue that has been referred to as the Congress Street Facility. The facility encompasses an area approximately 7 acres in size with approximately 5.1 acres having been developed. The area south and west of the site consists of light industrial areas; commercial facilities are located east and northwest; and residential areas to the north and northeast. The site is located on a steep slope that has been developed over the years. Figure 2 shows the site as it was in the late 1990's with a number of buildings located on the site. Some of the buildings were constructed such that the lower portion of the buildings acted as retaining structures for the upper slope area. The Cowhorn Creek is located at the bottom of the slope. Between the Cowhorn Creek and the Site is an active rail line owned by CSX Transportation. The rail line serves as one of the main rail lines between Albany and western New York.

The facility was in operation from the early 1900's until 1997 when manufacturing operations ceased. The facility was registered with New York State Department of Environmental Conservation (NYSDEC) as an inactive hazardous waste site (Site Number 4-47-007). Site environmental investigations have been ongoing since 1994.

As a result of the previous investigations, it is concluded that the contamination remaining on-site is present primarily within the soils located under and west of the former manufacturing buildings. Although the RI has generated significant data from the site, due to the presence of the manufacturing buildings which limited access during the previous investigations the limits of the contamination have not yet been fully defined.

Since 1997, site conditions have changed significantly (i.e., the facility has been closed and the on-site buildings demolished) resulting in the on-site soils becoming accessible, thereby allowing investigation of the entire Site and evaluation of potential remedial alternatives. In addition, potential remedial technologies have been tested at the Rotterdam Junction facility of SI Group that could potentially be used at the Congress Street site.

As a result of these actions, a Remedial Investigation (RI) and Supplemental Feasibility Study were conducted for the Congress Street site. The investigation included a delineation of on-site conditions and an evaluation of potential remedial technologies for the site. Based on the results of the investigation and the evaluation, a remedial alternative to address on-site contamination was recommended in the Updated Supplemental Feasibility Study (FS) dated March 2010. The remedial alternatives analysis that was presented in the Updated Supplemental FS was utilized by NYSDEC to prepare a Proposed Remedial Action Plan (PRAP) for OU2. The PRAP was issued for public review and comment on September 15, 2010. As a result of the RI and FS actions, as well as comments received on the PRAP, NYSDEC issued a Record of Decision (ROD) on December 21, 2010 that identified the selected remedy for OU2.

Due to distinct soil and engineering concerns, as well as the nature and distribution of contamination, the Site is divided into two areas for remediation purposes. These areas include the Fill Area and the Process Area. In general, the selected remedy for the Fill Area includes the installation of a permeable cap combined with natural attenuation, whereas the selected remedy for the Process Area includes product removal via excavation combined with thermally-enhanced soil vapor extraction. Due to the current conditions at the Site and the fact that the selected remedial alternative has the multiple components, the remediation of the Congress Street site was divided into two separate phases. The two-phase approach allowed for initial site preparation activities to be completed along with a limited pre-design investigation prior to the design of the more complex portions of the remediation program, including the thermally-enhanced soil vapor extractor wells (SVE) system.

The first phase of the two-phase approach was completed in 2011 and the early portion of 2012. Phase 1 included preparation of the Process Area, installation of a permeable cover over the Fill Area, and completion of a pre-design investigation within the Process Area. Preparation of the Process Area included removal of existing concrete structures, foundations and rail sidings, decommissioning of existing utilities, removal of grossly contaminated soil located directly below the concrete slabs and asphalt pavement, and installation of an asphalt cap directly over the Process Area. The Fill Area was prepared in a similar manner as the Process Area with the removal of existing structures. A permeable cover was installed over the Fill Area consisting of either gravel or soil cover. Upon completion of site preparation work, a pre-design investigation was conducted. The investigation included installation of groundwater extraction wells, SVE and piezometers to determine the parameters required for the final system design of the in-situ treatment system.

6.2 PROJECT OVERVIEW

As noted previously, the remediation of the Congress Street site is to be completed in two phases. The first phase was completed during 2011 and the early portion of 2012. The second phase includes the design and installation of the in-situ site treatment system. The following are the activities to be conducted within the Process Area during Phase 2 Remedial Activities:

- Installation of in-situ site treatment wells, including:
  - Groundwater extraction wells
  - Soil vapor extraction (SVE) wells
  - Conductive soil heating wells
- Installation of treatment system piping
- Installation of mechanical and electrical equipment to operate the in-situ site treatment system

7.0 HEALTH AND SAFETY PROGRAM COMPONENTS

7.1 OBJECTIVES

As discussed previously, activities to be conducted as part of Phase 2 Remedial Activities include the installation of groundwater extraction wells, SVE wells, conductive soil heating wells, an SVE treatment system and all associated piping, equipment and apparatus. This project’s various assignments require personnel to perform tasks where personal safety could be compromised due to specific chemical, physical, and/or biological hazards associated with the site. As such, this Plan has been created for the protection of on-site personnel during the planned field activities.

It should be noted that this HASP is not intended to cover all aspects of Health and Safety associated with the project. The general work practices, including drilling, well installation, installation of piping, trucking, etc., will be governed by the Contractor’s site-specific HASP.

All personnel working at the Congress Street Facility will be required to abide by the policies and procedures set forth by this Plan.

7.2 SAFETY MEETINGS

The Site Safety Officer (SSO) shall conduct an initial safety meeting prior to entering the site or engaging in remedial/investigative activities. To ensure that the HASP is being followed during the remedial activities, safety meetings shall be held before each work day or any time there is a change in site conditions.

7.3 SAFETY TRAINING

The SSO will confirm that personnel assigned to the field component of the project have received adequate training. CHA staff and Remedial Contractor personnel involved with this project shall have a minimum of a 40-hour initial Hazardous Waste Operations and Emergency Response training and a current annual 8-hour refresher course. All training will have been conducted and certified in accordance with OSHA regulations as outlined in 29 CFR 1910.120.

All personnel working on the site will also be required to participate in SI Group’s Safety Training Program.

7.4 MEDICAL SURVEILLANCE

CHA staff and Remedial Contractor personnel will have had a medical surveillance physical consistent with OSHA regulations in 29 CFR 1910.120 and performed by a qualified occupational health physician. This program tracks the physical condition of employees in compliance with OSHA regulations. Medical examinations and consultations are generally completed prior to assignment, annually, upon termination, and in the event of injury and/or illness resulting from exposure at a work site.

7.5 AUTHORIZATION

All on-site personnel involved in Phase 2 Remedial Activities shall acknowledge and comply with the policies and procedures established in this HASP and SI Group's safety requirements.

If any site worker performs work in an unsafe manner and/or in violation of Federal, State, or local regulations, they are to notify the Site Safety Officer, and CHA's Project Manager or his designated representative. CHA's Project Manager or his designated representative is responsible to notify SI Group's Project Manager and the Remedial Contractor so that appropriate actions may be taken.

CHA personnel have the authority to shut down field operations at this site if work is not being conducted in accordance with the requirements of this HASP, or if site conditions are determined to be unsafe to continue operations. SI Group's Project Manager or his designated representative will be immediately notified of any shutdown or safety concern.

7.6 SITE MAPPING

Figure 1 illustrates the location of the subject Site. Figure 2 illustrates the route to the nearest hospital.

8.0 POTENTIAL HAZARDS

The following hazards have been specifically identified in relation to the activities to be performed at the Congress Street Facility.

Hazardous Material Types: Liquid _X_ Solid _X__ Sludge _____ Gas _X_

8.1 CHEMICAL HAZARDS

The major contaminants identified at the Congress Street Site include toluene, xylene, naphthalene, cresols and phenolic compounds. The potential exposure mechanism that can transport these volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs), as well as particulates, from work areas to other areas of the site as well as beyond the boundaries of the site are:

- Contact with contaminated groundwater or soil,
- Projection of contaminated material in air,
- Failure to adhere to decontamination procedures.

8.2 AIRBORNE HAZARDS

The potential exposure mechanisms that can transport nuisance dust and/or chemical vapors from the areas of well installation to other areas of the site as well as beyond the boundaries of the site are:

- Contact with contaminated ground water or soil
- Projection of contaminated material in air
- Failure to adhere to decontamination procedures
- Transportation of waste materials

Nuisance dust can be a problem at any site that involves intrusive activities in potentially contaminated materials. Dust will be controlled to prevent the public from being unnecessarily concerned and to further reduce the nuisance dust hazard to Site personnel. Nuisance dust will be controlled by utilizing appropriate dust suppression techniques such as wetting down high traffic areas. The primary effect of nuisance dust is irritation of the eyes, nose, and throat when concentrations approach the OSHA exposure limits. Exposure limits will not be exceeded during this project.

8.3 PHYSICAL HAZARDS

Physical hazards such as the following may be encountered during the project:

- Heavy equipment
- Noise
- Electrical
- Fire/explosion
- Traffic
- Slip/Trip/Fall
- Underground/Aboveground Utilities (electrical, gas, etc.)

8.4 BIOLOGICAL HAZARDS

Biological hazards such as the following may be encountered on site:

- Mosquitoes/Stinging Insects
- Deer Ticks
- Rodents
- Irritant plants
- Heat/cold stress

9.0 HAZARD/TASK ANALYSIS AND CONTROLS

The following is a summary of the project tasks and potential health hazards associated with anticipated activities to be conducted during the course of the project. In addition, hazard control procedures are outlined.

9.1 CHEMICAL HAZARDS

9.1.1 Hazardous Materials Segregation/Stockpiling Hazards

Hazard Analysis - During the course of site activities that may include physically handling generated waste, it is possible that site workers may come into contact with contaminated media. Potential contaminated media includes waste material, soil, and water. In accordance with the Soil and Stormwater Management Plan, contaminated media will be segregated for management and disposal by a qualified waste disposal contractor, as necessary.

Hazard Control – In general, site workers shall use practical sense to avoid contact when possible. This includes avoiding walking through puddles and contacting other potential sources of contaminants. In addition, site workers shall don the appropriate personal protective equipment (PPE) as described in Section 15.0. The level of PPE shall be dependent on the work activity being conducted.

In general, the following basic methods of protection shall be employed if there is a potential for contact:

- Wear safety glasses and nitrile gloves to prevent eye and skin contact.
- Wear vinyl boots over safety boots if free product is encountered.

Controls should also include repeated health and safety awareness meetings, decontamination stations, and other standard procedures.

The SSO will perform air monitoring in accordance with Section 10.0, which includes organic vapor and dust monitoring.

9.1.2 Decontamination Fluids and Calibration Gas Hazards

Hazard Analysis - Several chemicals (methanol, isobutylene, etc.) are required for use in the equipment decontamination process and for equipment calibrations. It is possible that site workers may come into contact with these materials during the course of the project.

Hazard Control – Although the quantities to be used are minimal and will be used under controlled environments, site workers shall take additional precautions to prevent exposure. Chemicals used during field activities will be properly contained and labeled. Compressed gases shall be stored in a cool, dry place away from potential impact. Only trained personnel shall use these chemicals/gases. PPE should be used if there is a potential for dermal contact or respiratory exposure. Calibration gases should only be used in outdoors or in well-vented areas. Material safety data sheets (MSDS) will be maintained onsite for all decontamination fluids and calibration gases.

9.2 AIRBORNE HAZARDS

9.2.1 Chemical Hazards

Hazard Analysis - The potential for inhalation of VOCs (and to a lesser extent SVOCs) will be present during site activities. Intrusive activities may expose areas of contamination which could generate contaminated vapors. Personnel working in close proximity may be exposed.

Hazard Control – If exposure to contaminants in air is anticipated, workers should locate upwind of the work activity. Wind direction often changes abruptly and without warning, so personnel should always be prepared to reposition, if necessary. Site personnel should keep clear of areas where intrusive activities are taking place unless actively engaged in work activities. The SSO shall perform air monitoring in accordance with Section 10.0, which includes VOC monitoring.

9.2.2 Dust Hazards

Hazard Analysis – The potential for inhalation of contaminated dusts and other airborne particles will be present during intrusive activities. Inhalation hazards are particularly evident during warm and dry periods when there is a greater chance for airborne dusts to be generated. Workers may inadvertently ingest contaminants/waste materials that collect on hands and clothing in the form of dust during intrusive activities. Dust ingestion may also occur when workers take water/meal breaks, or after they have left the work area if established hygiene procedures (e.g. washing hands) are not followed.

<u>Hazard Control</u> – If exposure to dust emissions is anticipated, workers should locate upwind of the work activity. Wind direction often changes abruptly and without warning, so personnel should always be prepared to reposition, if necessary. Site personnel should keep clear of active intrusive areas unless actively engaged in work activities. Airborne dust levels will be minimized by wetting down surfaces, if necessary. Only very limited quantities of water will be used as necessary within the site limits to avoid the potential for increased surface water production. Controls may also include decontamination stations and other standard procedures for ensuring that dust is not ingested.

9.3 PHYSICAL HAZARDS

9.3.1 Heavy Equipment Hazards

<u>Hazard Analysis</u> - The use of heavy equipment (e.g., drill rigs, generators, etc.) may pose safety hazards to site workers.

<u>Hazard Control</u> **-** Heavy equipment work must be conducted only by trained, experienced personnel. Proper protective gear (hard-hats and steel-toed boots) will be worn at all times in the Exclusion Zone as defined in Section 11.1. If possible, personnel must remain outside the turning radius of large, moving equipment, with particular attention given to remaining within the line of sight of the operator and maintaining eye contact with the operator. When approaching operating equipment, the approach should be made from the front and within view of the operator, preferentially making eye contact. At a minimum, personnel must maintain visual contact with the equipment operator. Equipment shall be stabilized while operating and shall be equipped with back-up alarms. Wheels should be chocked as appropriate for equipment parked on a slope. Ensure that all equipment is in good operating condition and that proper maintenance checks have been done. The operation of heavy equipment shall only be conducted by trained Remedial Contractor personnel in accordance with the Contractor’s HASP.

9.3.2 Noise Hazards

<u>Hazard Analysis</u> - Work around large equipment often creates excessive noise. Drilling and hauling equipment will be the primary source of noise encountered during the reclamation project. Noise can cause workers to be startled, annoyed, or distracted; can cause physical damage to the ear, pain, and temporary and/or permanent hearing loss; and can interfere with communication.

Hazard Control **-** All equipment will be fitted with adequate muffler systems and intrusive activities will be limited to normal work hours, except as required by extenuating circumstances. During the field activities where workers are using heavy equipment (drill rigs, etc.) or working around other equipment that produces continuous noise (generators, etc.), hearing protection should be utilized at these times. Personnel shall wear hearing protection if it is necessary to shout to hear someone who is standing one foot or less away, or noise measurements show that OSHA permissible exposure levels are exceeded. Personnel shall not stand unnecessarily close to equipment when it is operating.

9.3.3 Electrical Hazards

Hazard Analysis - Overhead power lines, electrical wiring, electrical equipment (electrical generators), and buried cables pose risks to workers of electric shock, burns, muscle twitches, heart fibrillation, and other physical injuries, as well as fire and explosion hazards.

Hazard Control **-** Workers will take appropriate protective measures when working near live electrical parts, including inspection of the work area to identify potential spark sources, maintenance of a safe distance, proper illumination of the work areas, provision of barriers to prevent inadvertent contact, and use of nonconductive equipment. If overhead lines cannot be de-energized prior to the start of work, a 10-ft distance must be maintained between overhead energized power lines and elevated equipment parts. Equipment should not be moved with equipment parts elevated. In addition, equipment operators should take care not to excavate within 20 feet of overhead power lines. DigSafe will be utilized for the location of underground utilities prior to any excavation work. The use of a ground fault circuit interrupter (GFCI) will be required for all portable electrical devices.

9.3.4 Fire/Explosion Hazards

Hazard Analysis - The potential for fire and/or explosion emergencies is always present. It is important to take necessary precautions to identify a potential situation before it becomes a problem. Site workers should be alert for unexpected events, such as ignition of chemicals or sudden release of materials under pressure, and be prepared to act in these emergencies.

Hazard Control **-** Ignition sources shall be kept away from flammable materials and atmospheres. Field vehicles will be equipped with a fire extinguisher. Large fires that cannot be controlled with a fire extinguisher should be handled by professionals. The proper authorities should be notified pursuant to Section 3.0 in these instances.

9.3.5 Traffic Hazards

Hazard Analysis – Due to the nature of the project, additional truck traffic associated with the project is anticipated and represents a potential hazard.

Hazard Control **-** Proper protective gear (hard-hats and safety vests for high visibility) will be worn on-site by all site workers. In addition, designated on-site roadways will be used when possible and on-site workers should keep clear of these areas. Vehicles travelling on-site should travel at low speeds that enable them to observe the surroundings and stop quickly if necessary. If possible, personnel must remain outside the turning radius of large, moving equipment, with particular attention given to remaining within the line of sight of the operator and maintaining eye contact with the operator. When approaching operating equipment, the approach should be made from the front and within view of the operator, preferentially making eye contact.

9.3.6 Slip/Trip/Fall Hazards

Hazard Analysis – Common slip, trip and fall hazards result from uneven walking surfaces, holes, slippery surfaces, changes in level, obstructions and accumulation of objects on the ground (e.g. hoses, cords, cables, debris, etc.), and work areas 30 inches or more above ground.

Hazard Control **–** Site personnel should avoid slippery surfaces whenever possible. Site workers should maintain a clean and orderly work area. Tools and other tripping hazards should be picked up daily. Personnel should know the location of other site workers at all times, especially before moving and/or starting up heavy equipment. Site workers should use three-point contact when mounting or dismounting elevated equipment.

9.4 BIOLOGICAL HAZARDS

9.4.1 Insect/Animal-Related Hazards

Hazard Analysis – There is the potential to come into contact with various insects, including bees and ticks, anytime site workers are outdoors, especially when in woods, brush, bushes, or tall grasses. Contact with any of these shall be avoided if at all possible.

Hazard Control – During site activities, attention will be paid to biological hazards such as ticks, mosquitoes, and other biting insects. Be observant of possible insect nesting areas. Personnel will have commercial bug spray onsite to use if necessary. Personnel should wear light colored clothing, long sleeved shirts and long pants when possible, and tuck pant legs into boots or socks.

9.4.2 Heat-Related Hazards

Hazard Analysis - Effects of heat stress and illness are possible during the performance of field activities associated with Phase 2 Remedial Activities. Injury from excess exposure to high temperatures may occur to persons working outdoors. This is a major concern when personnel are working in PPE clothing. The body's principal means of cooling is through the evaporation of sweat. When personnel are working in PPE, sweat is trapped inside the clothing and cannot evaporate, thus raising the body's core temperature and resulting in a heat-related illness. The symptoms of heat-related illness include painful muscle spasms, dizziness, slurred speech, confusion, fainting, and cool, clammy skin.

Hazard Control - Site personnel should be familiar with these symptoms of heat-related illness and be prepared to administer first aid or to contact the appropriate emergency personnel. Site personnel should wear appropriate clothing and take frequent breaks during extreme weather conditions.

9.4.3 Cold Exposure Hazards

Hazard Analysis - Effects of cold exposure are possible during the performance of field activities associated with Phase 2 Remedial Activities. Injury from cold exposure may occur in persons working outdoors during a period when temperatures average below freezing. The extremities, such as fingers, toes, and ears, are the most susceptible to frostbite. Symptoms of cold stress include shivering, pain in the extremities, numbness, drowsiness, white or grayish skin, confusion, or fainting.

Hazard Control - To prevent cold stress, personnel should wear layers of loose-fitting clothing and head covering. Protection of the hands, feet, and head is particularly important because these are the areas most likely to be injured first by the cold. Bare skin contact with cold surfaces should be avoided. Personnel shall wear only dry clothing.

9.4.4 Irritant Plant Hazards

Hazard Analysis – There is the potential to come into contact with poison ivy, poison oak, poison sumac anytime site workers are outdoors, especially when in woods, brush, bushes, or tall grasses. Contact with any of these shall be avoided if at all possible.

Hazard Control – During site activities, attention will be paid to the presence of irritant plants such as poison ivy, oak, and sumac. If exposed, personnel should flush the area with soap and water. Personnel should wear long sleeved shirts and long pants when possible, and tuck pant legs into boots or socks.

10.0 AIR MONITORING AND ACTION LEVELS

10.1 AIR MONITORING

Air monitoring at the Congress Street Site will be performed during Phase 2 Remedial Activities. All air monitoring will be conducted on a real-time basis using both hand-held field instruments and visual monitoring. Air monitoring readings will be recorded in a logbook. The air monitoring plan developed for the project consists of two primary components: dust and organic vapor.

Continuous monitoring, as specified in the Community Air Monitoring Plan (Appendix G to the Phase 2 Remedial Design Work Plan), will be required for all ground intrusive activities if:

- Increased particulate levels are observed in the work area;
- Organic vapors are detected in the work area at concentrations of 5 parts per million (ppm) above background for over 15 minutes; or
- Increased odor levels are detected in the work area for over 15 minutes.

Monitoring instruments will be calibrated prior to each full day of equipment usage or more frequently in accordance with manufacturer's recommendations. Calibrations will be recorded on an Equipment Calibration Log.

10.1.1 Dust/Particulates

Dust emissions may occur at the project site during intrusive remedial activities and loading activities. Therefore, fugitive dust control measures will be implemented during all intrusive construction activities. Fugitive dust is described as discrete particles, liquid droplets or solids, which become airborne and contribute to air quality as a nuisance and threat to human health and the environment.

Particulate levels shall be visibly monitored within the exclusion zone. If it appears dust levels are increasing, a particulate meter shall be utilized following the manufacturer's recommendations. At the upwind and downwind perimeters of the exclusion zone, particulate monitoring will be conducted continuously using a real-time monitoring device capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedance of the action levels.

The following action levels will be used:

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All fifteen minute readings will be recorded and will be available onsite for personnel to review.

10.1.2 Organic Vapor

A photoionization detector (PID) shall be used to monitor for VOCs at both the immediate work area (e.g. exclusion zone) and the downwind perimeter of the exclusion zone (if necessary). The PID shall be calibrated on a daily basis following the manufacturer's recommendations. Calibration data shall be recorded in daily logs by the SSO. The monitoring schedule is provided below.

Frequency:

1. At start of each task.
2. Whenever obvious contamination is noted.
3. Every 30 minutes.
4. Whenever conditions change.

Location of Measurements:

1. In the breathing zone
2. Headspace readings as appropriate
3. Monitor at the exclusion zone boundary, particularly at downwind locations, if PID monitoring levels in the exclusion zone are consistently over 5 ppm.

Significant VOC readings are not anticipated for this project. However, the following action levels will be used for VOC monitoring at the Site:

- If PID readings exceed 5 ppm above background for any 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases as indicated by instantaneous PID readings to levels below 5 ppm above background, work activities can resume with continued monitoring.

- If readings remain elevated in excess of 5 ppm above background but less than 25 ppm, work activities must be halted, the source of the vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that total organic vapor levels in the exclusion zone are below 5 ppm over background for the 15-minute average.

- Upgrade to Level C when PID readings are consistently over 10 ppm over background in the exclusion zone.

- Upgrade to Level B when readings are consistently over 200 ppm over background in the exclusion zone – notify Project Manager first.

- Level A is not anticipated for this project.

In the event the readings remain elevated during the 15 minute test, the Community Air Monitoring Plan (Appendix G to the Phase 2 Remedial Design Work Plan) will be implemented and continuous monitoring of VOCs will be performed at the downwind perimeter of the immediate work area or exclusion zone.

11.0 SITE CONTROL MEASURES

11.1 WORK ZONES

The purpose of site control is to minimize potential contamination of workers, protect the public from the site's hazards, and prevent vandalism. The degree of site control necessary depends on the site characteristics, site size, and the surrounding community. The restriction zones will be constructed of portable snow fencing and/or stakes and tapes, as necessary, to restrict public access. The restriction zones will have one point of entry/egress. Within the perimeter of the Congress Street site, work zones will be established and maintained during the Phase 2 remedial activities. The work zones will include:

- Exclusion Zone (EZ) - The exclusion zone will be the area where contamination is most likely to be encountered. For most Phase 2 activities, the exclusion zone will be considered to be the actual area of well installation plus a 50 foot buffer zone. Flow of personnel and equipment into and out of the zone will be monitored during activities. Access will be controlled and the appropriate PPE will be used while in the exclusion zone.

- Contamination Reduction Zone (CRZ) - The contamination reduction zone will be the area where decontamination procedures take place. It is the transition area between the Exclusion Zone and the Support Zone. The purpose of the Contamination Reduction Zone is to reduce the possibility that the Support Zone and surrounding area becomes contaminated or affected by the potential contamination in the Exclusion Zone.

- Support Zone (SZ) - The Support Zone is the uncontaminated area where workers are unlikely to be exposed to hazardous substances or dangerous conditions. Because the Support Zone is free from contamination, personnel working within the area will wear normal work clothes. Any potentially contaminated clothing, equipment, and samples (outer containers) will remain inside the Contamination Reduction Zone or the Exclusion Zone. Designation of the Support Zone will be based on available site characterization data and will be located upwind from the Exclusion Zone. The Support Zone should be in an area that is known to be free of elevated (i.e., higher than background) concentrations of hazardous substances.

11.2 SITE SECURITY

The site is accessible via the main entrance from the Congress Street. General access to the facility is restricted by fencing and a gated and locked entry into the interior of the fenced area. The site is also monitored with cameras at an off-site location. All visitors to the work areas will be required to check in with the SSO. Only those visitors employed by SI Group, Inc., or affiliated with the site owners or the project will be allowed to enter the on-site work areas.

Portable restriction zones may be constructed around each work area to further restrict public access if necessary. The restriction zones would be constructed of a series of cones and restrictive tape. There will be only one point of entry/egress in each restriction zone.

11.3 COMMUNICATION

Communication shall be accomplished by person to person verbal correspondence and through the use of cellular telephones. Communication procedures will be reviewed at the Safety Meeting before entering the work zone.

12.0 HAZARD COMMUNICATION

The SSO will conduct regularly scheduled safety meetings with site workers to discuss the planned activities, since these activities and workers may change over the duration of the project. The objective of instituting hazard communication is to ensure that hazards associated with the site and with chemicals brought on-site are evaluated, and that information concerning these hazards is transmitted to site personnel. Site personnel include Contractor and CHA employees, SI Group employees, local agency employees, and other workers who observe or perform services on-site. Employee awareness of chemical identities, health and physical hazards, properties, and characteristics is essential to safely handle chemicals and to minimize potential hazards.

In compliance with 29 CFR 1910.1200, any hazardous materials brought on site by any personnel (CHA, the Remedial Contractor, or sub-contractors) shall be accompanied with the material's MSDS. The SSO shall be responsible for maintaining the MSDSs on site, reviewing them for hazards that working personnel may be exposed to, and evaluating their use on site with respect to compatibility with other materials including personal protective equipment, and their hazards. Should the SSO deem the material too hazardous for use on the subject site, the party responsible for bringing the material on site will be required to remove it from the site.

Site workers and visitors will be informed of identified site hazards, the location of the chemical inventory, and the location of the MSDSs. Prior to site work or potential exposure to hazardous substances, the SSO will describe hazardous substances routinely used and provide information regarding:

- Nature of potential chemical hazards;
- Appropriate work practices;
- Appropriate control programs;
- Appropriate protective measures;
- Methods to detect presence or release of hazardous substances; and
- Emergency procedures.

13.0 CONFINED SPACE

During this project there are no anticipated confined space entries. If a confined space entry becomes necessary, all confined space entry procedures, techniques, and equipment shall be consistent with OSHA regulations in 29 CFR 1910.146. All entrants and attendants shall be trained in Confined Space Awareness training consistent with 29 CFR 1910.146.

14.0 FIRST AID PROCEDURES

Skin/Eye Contact: Flush eyes and/or skin thoroughly with water for 15 minutes. Remove contaminated clothing. If skin was contacted with a dry material, brush it off first, and then flush with water. Seek medical attention if irritation develops.

Ingestion: Do not induce vomiting. Call Poison Control Center. Tell them what was swallowed, if possible. Follow instructions. Bring victim to hospital or call ambulance.

Inhalation: Remove person from contaminated environment without risking your own safety. DO NOT ENTER EXCLUSION ZONE UNLESS WEARING ONE LEVEL HIGHER OF PROTECTION THAN VICTIM IS WEARING. Administer CPR, if necessary. Bring victim to hospital or call ambulance.

Injuries: Do not move a victim who may have a back injury. Cover them with coats, blankets, or other appropriate items to keep them warm. Call an ambulance.

Apply pressure to bleeding wounds. If the victim is able, have the victim apply pressure to the wound. If they are not able, wear gloves to protect from exposure to blood. Put gauze bandages or other clean cloth over the wound. Do not remove blood-soaked bandages or cloth - instead put additional bandages or cloths over the blood-soaked bandages. Elevate the limb with the injury above the heart.

Administer CPR if victim does not have a pulse and if you are currently certified in CPR. Have someone call for an ambulance immediately if there is any possibility that the victim is having or had a heart attack.

Shock is likely to develop in any serious injury or illness. The following are signals of shock: restlessness or

Injuries, con't:	irritability, altered consciousness; pale, cool, moist skin; rapid pulse. In the event of shock, do the following: Immediately have someone call for an ambulance; have the victim lie down; elevate legs 12 inches unless you suspect head, neck, or back injuries; if victim is cool, cover the victim to prevent chilling; do not give the victim anything to drink, even if thirsty.

15.0 PERSONNEL PROTECTION

15.1 GENERAL GUIDELINES

1. Construction activities shall be performed in compliance with all OSHA Construction Industry Standards/Regulations.

2. All work conducted on-site shall be coordinated through the Site Superintendent.

3. During any activity conducted on-site in which a potential exists for exposure to hazardous materials or, accident or injury, at least two persons shall be present who are in constant communication with each other.

4. Following the procedures, requirements, and provisions of this plan, all personnel who may be potentially exposed to hazardous materials or wastes shall be in compliance with federal/state regulations, OSHA 29 CFR 1910.120.

5. Any drum or tank discovered on-site shall not be sampled, opened, or handled until an appropriate task-specific plan for unknown drum/tank sampling has been implemented.

6. Samples from areas known, or suspected, to be contaminated with hazardous substances shall be handled with appropriate personal protective equipment.

7. All equipment used in site operations shall be properly cleaned and maintained in good working order. Equipment shall be inspected for signs of defect and/or contamination before and after use.

8. Eating, drinking, chewing gum, and smoking shall be prohibited while performing site activities and in work zones. Personnel shall wash thoroughly before initiating any of the aforementioned activities.

9. The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated shall result in evacuation of site personnel and reevaluation of the hazards and the level of protection. Contact the Project Manager and the SI Group representative to determine the appropriate actions to take.

15.2 AIR MONITORING

Monitoring shall be performed within the work area on-site to detect the presence, and the relative levels of toxic substances (i.e. photo-ionization detector readings). The data collected throughout monitoring shall be used to determine the appropriate levels of PPE. Monitoring shall be conducted to determine baseline data on potential hazards before entry in the work area, and periodically while conducting work on-site to evaluate any changes in conditions of the specific work area. Each work area must be screened for ambient levels of contamination before initiating work activities.

Periodic monitoring on the site will consist of initial monitoring, during changes in site conditions (i.e. drilling activities, opening of a monitoring well, sampling, etc.), and at regular intervals throughout the day as deemed necessary by the SSO, but at least once every 30 minutes.

It is noted that a Community Air Monitoring Plan has been established for Phase 2 Remedial Activities and is included as Appendix G to the Phase 2 Remedial Design Work Plan. This will be implemented only if PID readings exceed those outlined in Section 10.

15.3 PERSONAL PROTECTIVE EQUIPMENT

The purpose of personal protective clothing and equipment is to shield or isolate individuals from the chemical and physical hazards that may be encountered during work activities. The level of protection required must correspond to the level of hazard known, or suspected, in the specific work area.

There are four basic levels (A, B, C, and D) of personal protection as established by the U.S. Environmental Protection Agency (EPA). Level A provides the highest level of protection and Level D provides the lowest.

- ***Level D*** will consist of field clothes, outer gloves (if soil/water contact is likely), steel toe work boots, a hard hat and high-visibility safety vest.

- ***Modified Level D*** will consist of Tyvek coverall, safety glasses (for dust/splash hazards) outer gloves with disposable inner gloves, steel toe work boots, overboots if free product is encountered or as otherwise specified, and hearing protection.

- ***Level C*** will consist of the same equipment as listed for modified Level D with the addition of a full-faced air purifying cartridge equipped respirator. Level C is not anticipated for this project.

- ***Level B*** consists of the same equipment as listed for Level C with the substitution of a full-faced Self Contained Breathing Apparatus (SCBA) in place of a full-faced air purifying respirator. Level B is not anticipated for this project.

- ***Level A*** consists of the same equipment as listed for Level B with the substitution of a fully encapsulating suit. Level A is not anticipated for this project.

When wearing Level C, B, or A, all junctures between the chemical protective coverall (i.e., Tyvek suit) and boots, gloves, and respirator must be taped. The suit must be placed over the boots and gloves. When taping, remember to leave a tab for easy removal. Stress spots in the suit must also be taped, such as under the arms, down the zipper, and up or across the back.

PPE will be selected consistent with the hazards associated with the expected field activities. PPE is available in various sizes to provide a good fit for all personnel. PPE must be stored in a clean location with access by site workers. Site workers are responsible for maintenance and storage of equipment at the site.

It is anticipated that the maximum level of protection for this project will be modified Level D.

15.4 HEALTH AND SAFETY ACTION LEVELS

An action level is a point at which increased protection is required due to the concentration of contaminants in the work area or other environmental conditions. Each action level is determined by the concentration level (above background level) and the ability of the personal protective equipment to protect against that specific contaminant. The action levels are based on concentrations in the breathing zone.

If ambient levels are measured which exceed the action levels in areas accessible to the public or unprotected personnel, necessary site control measures (barricades, warning signs, and mitigative actions, etc.) must be implemented before commencing activities at the specific work site.

Personnel should also be able to upgrade or downgrade their level of protection with the concurrence of the SSO. Again, the maximum level of protection anticipated for this project is Level D.

Reasons to upgrade:

- Known or suspected presence of dermal hazards.
- Occurrence or likely occurrence of gas, vapor or dust emission.
- Change in work task that will increase the exposure or potential exposure with hazardous materials.

Reasons to downgrade:

- New information indicating that the situation is less hazardous than was originally suspected.
- Change in site conditions that decrease the potential hazard.
- Change in work task that will reduce exposure to hazardous materials.

16.0 DECONTAMINATION

16.1 PERSONNEL DECONTAMINATION

All PPE will be disposed or decontaminated at the conclusion of each work day. A container for Tyvek suits and other disposables will be designated on-site. Tyvek suits and other disposables (inner gloves) will be doffed at the conclusion of each work day and replaced with new equipment before commencing work on the following work day. Decontamination of personal protective equipment will consist of manual rinses of alconox/tap water, and/or tap water.

16.2 PERSONNEL DECONTAMINATION STEPS

Modified Level D

- Remove coveralls and protective equipment.
- Discard disposable garments.
- Containerize wash and decontamination waters for disposal, as necessary.

Level C

- Drop equipment off in a segregated area in the decontamination zone.
- Wash/rinse outer suit and boots.
- Wash/rinse outer gloves.
- Remove outer boots.
- Remove outer gloves.
- Deposit disposables in container for proper disposal.
- Remove suit.
- Remove respirator.
- Remove inner gloves.
- Containerize wash and decontamination waters for disposal, as necessary.

Level B

- Drop equipment off in a segregated area in the decontamination zone.
- Wash/rinse outer boots.
- Wash/rinse chemical resistant outer gloves.
- Wash/rinse air tank, hose, and protective suit.

- Remove duct tape from boots, gloves, and face piece and discard.
- Remove boot covers and outer gloves.
- Remove face piece, air line, and emergency respirator.
- Remove chemical resistant suit.
- Remove inner boots.
- Remove hard hat.
- Remove inner gloves and discard.
- Containerize wash and decontamination waters for disposal.

Level A

- Will not be used.

16.3 EQUIPMENT DECONTAMINATION

All equipment used during intrusive activities will be decontaminated by power washing on a portable decontamination pad before leaving the site. The tires of haul trucks leaving the site will be washed down to remove soil, if required. This will be performed in a designated area of the site. All drilling equipment will be decontaminated by steam cleaning.

All decontamination fluids, as necessary, will be allowed to percolate into the on-site soils or will be sent to the groundwater treatment system for treatment.

17.0 EMERGENCY INFORMATION

17.1 GENERAL

On-site emergencies can range in intensity from minor to serious conditions. Various procedures for responding to site emergencies are listed in this section. The designated SSO is responsible for contacting local emergency services in emergency situations (however, others must assume responsibility if the situation warrants). An injured person shall be accompanied by another worker at all times.

An emergency information sheet containing the hospital location, directions, phone access, and emergency service phone numbers shall be posted at each work area during site activities.

17.2 EMERGENCY PROCEDURES FOR CONTAMINATED PERSONNEL

Whenever possible, personnel should be decontaminated before administering first aid. In the Contamination Reduction Zone there will be a separate decontamination line for emergency use only to reduce the risk of exposure.

- Skin Contact: Remove contaminated clothing, wash immediately with water, and use soap if available.

- Inhalation: Remove from contaminated atmosphere; initiate artificial respiration; if necessary arrange for emergency transport to hospital.

- Ingestion: Remove from contaminated area; do not induce vomiting if the victim is unconscious; never induce vomiting when acids, alkalines, or petroleum products are suspected.

- If site personnel have unexplainably collapsed, all personnel must evacuate work area. Rescue personnel must don a level of protection higher than the victim was in before evacuating victim from work area. Confined space rescue always requires Level B protection. No one will re-enter the work area until the cause has been determined and the Site Safety Officer (SSO) has determined that the area is safe to re-enter.

- In case of fire, all personnel must evacuate work area and the SSO will contact local fire department.

17.3 PHYSICAL INJURIES

Horn blasts will be used as emergency signals. Two horn blasts indicate an injury has occurred. Three horn blasts followed by a continuous blast indicates that all personnel in the Exclusion Zone must immediately evacuate. Personnel will move to the predesignated, safe reassembly points. On-site activities will stop until the added risk is removed or minimized. Do not walk through a vapor cloud to go to the safe area. In the event that the number of site personnel is limited to two to four persons, verbal communications will suffice.

17.4 SAFETY EQUIPMENT

Safety and PPE will be kept in a dry and sanitary condition in a designated area in the support zone or designated site vehicle. The safety equipment available on-site is as follows: respiratory equipment, hard hats, Tyvek coveralls, safety glasses, gloves, boots, emergency eyewash, fire extinguisher, first aid kit, first aid manual, potable drinking water, portable radios, log books to record readings, and absorbent materials.

17.5 SPILL CONTAINMENT

If on-site work results in the accidental spill or release of oil or hazardous materials, containment to the extent possible will be required by on-site personnel (in proper PPE). Containment should include the use of absorbent pads or materials, diking with soils, covering and/or diverting spills from sewers, drains, surface water bodies, etc. For spills that cannot be controlled by on-site personnel or are above the reportable quantities, the SSO or designee will secure the area and notify the State Police, and the NYSDEC Oil and Chemical Spill Reporting Hotline (see Section 3) for all emergency contact information.

18.0 HEALTH AND SAFETY PLAN AGREEMENT

This agreement must be signed by all CHA employees, employees of the Remedial Contractor, subcontractors, and visitors before conducting field activities at this site and/or entering the exclusion or decontamination zones.

I have read this Health and Safety Plan and I understand the requirements of the Plan. I will conduct work at this site in accordance with the requirements of the Health and Safety Plan.

Signature Date Company

Signature Date Company

Signature Date Company

Signature Date Company

Signature Date Company

Signature Date Company

Signature Date Company

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Signature Date Company

FIGURES

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III Winners Circle, PO Box 5269 · Albany, NY 12205-0269
Main: (518) 453-4500 · www.chacompanies.com

SITE LOCATION

CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

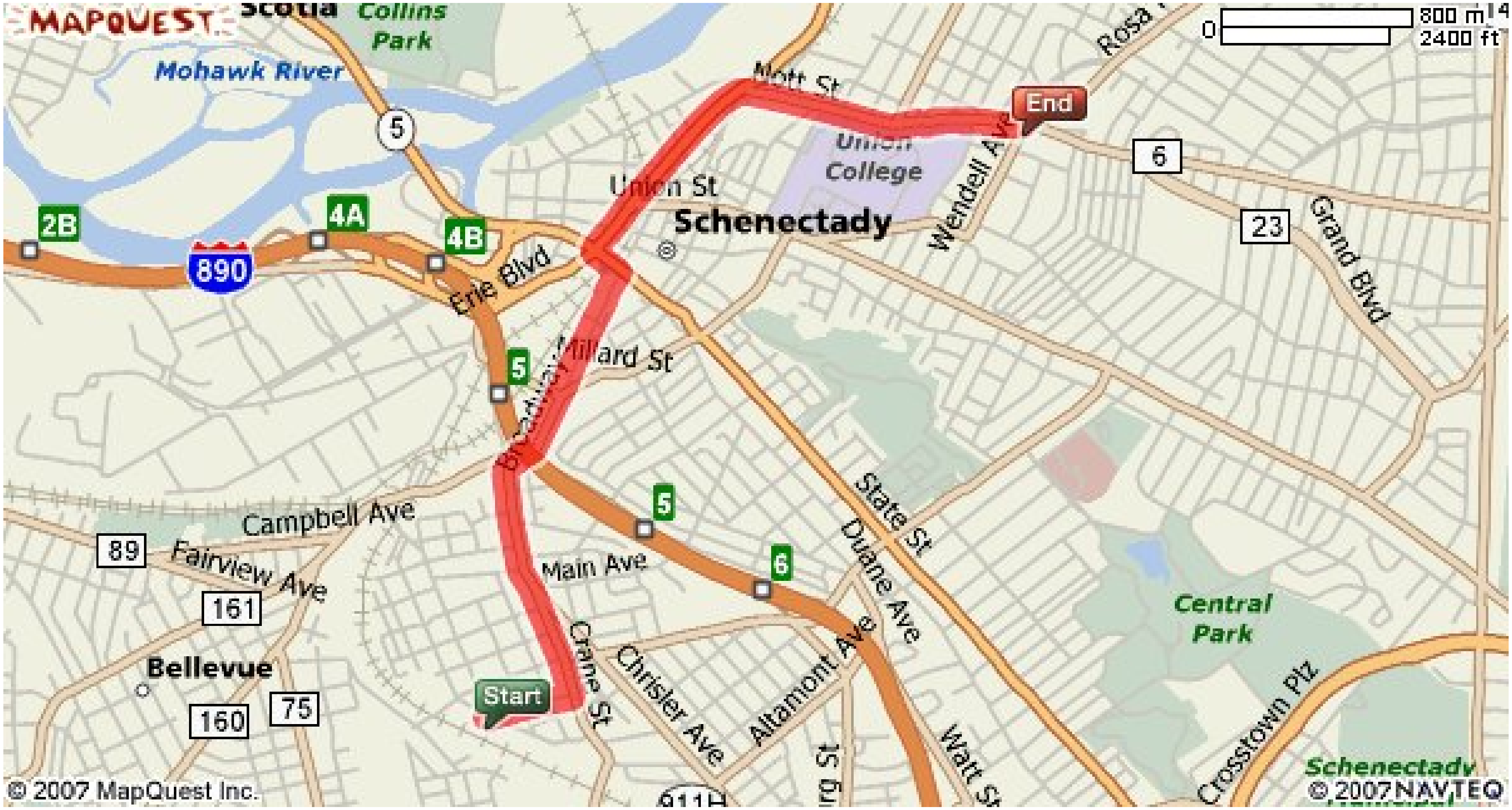
PROJECT NO.
15091

DATE: 01/10/2011

FIGURE 1

File: M:\15091\CS\PHASE I DESIGN\CADD\ACAD\FIGURES\FIGURE 1.DWG Saved: 1/10/2011 11:37:33 AM Plotted: 1/10/2011 11:39:06 AM User: Newell, Sarah

FIGURE 2
Hospital Route Map



APPENDIX G

Community Air Monitoring Plan

Community Air Monitoring Plan (CAMP)

Phase 2 Remedial Design
Congress Street Facility
SI Group, Inc.

The following Community Air Monitoring Plan (CAMP) will be implemented by SI Group or their designated representative for the Phase 2 Remedial Design Activities to be performed at the Congress Street facility. Air monitoring will be conducted in accordance with the New York State Department of Health (NYSDOH) *Generic Community Air Monitoring Plan (CAMP).* All air monitoring will be conducted on a real-time basis using both hand-held field instruments and perimeter air monitoring stations. All air monitoring readings will be recorded in a logbook and made available for review. This CAMP consists of two primary components, a fugitive dust control plan and a vapor control plan. Air monitoring will be conducted both upwind and downwind of the construction areas and evaluated to assess if the construction activities are causing potential airborne migration of contaminants.

Continuous monitoring, as specified in the CAMP, will be required for all ground intrusive activities if:

- Increased particulate levels are observed in the work area;
- Organic vapors are detected in the work area at concentrations of 5 parts per million (ppm) above background for over 15 minutes; or
- Increased odor levels are detected in the work area for over 15 minutes.

Additional monitoring will be completed in response to specific site conditions where potential exposure to the surrounding community has been identified.

This CAMP is not intended for use in establishing action levels for worker respiratory protection that is described in the site-specific HASP prepared by the Contractor for the Congress Street Project. Rather, its intent is to provide a measure of protection for the downwind community (i.e. off site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of the proposed remedial design activities. Reliance on this CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, this CAMP will help prevent the remedial construction activities from spreading contamination off-site through the air.

Fugitive Dust Monitoring and Control

Dust emissions may occur at the project site during intrusive remedial design activities. Therefore, fugitive dust control measures will be implemented during all intrusive construction activities. Fugitive dust is described as discrete particles, liquid droplets or solids, which become airborne and contribute to air quality as a nuisance and threat to human health and the environment. Dust control measures implemented during the remedial construction will be in compliance with the aforementioned NYSDOH CAMP. Particulate levels shall be visibly monitored within the exclusion zone. If it appears dust levels are increasing, a particulate meter shall be utilized following the manufacturer's recommendations. At the upwind and downwind perimeters of the exclusion zone, particulate monitoring will be conducted continuously, if warranted, using a real-time monitoring device capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level.

The real-time particulate monitors used will meet the following minimum performance standards:

- Objects to be measured: Dust, mists or aerosols;
- Measurement Ranges: 0.001 to 400 mg/m^3;
- Precision (2-sigma) at constant temperature: +/- 10 mg/m^3 for one second averaging; and +/- 1.5 mg/m^3 for sixty second averaging;
- Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd = 2 to 3 µm, σ_g=2.5, as aerosolized)
- Resolution: 0.1% of reading or 1 µg/m^3, whichever is larger;
- Particle Size Range of Maximum Response: 0.1 – 10;
- Total Number of Data Points in Memory: 10,000;
- Logged Data: Each data point with average concentration, time/date and data point number;
- Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
- Alarm Averaging Time (user selectable): real-time (1 – 60 seconds) or STEL (15 minutes), alarms required;
- Operating Time: 48 hours (fully charged NiCd battery); continuously with charger; and
- Operating Temperature: -10 to 50 ºC (14 to 122 ºF).

The monitoring equipment will be operated by a qualified person, the equipment will be periodically calibrated in accordance with the manufacturer recommendations, a daily instrument performance check will be completed, and a log will be maintained of the equipment.

The equipment will be equipped with an audible alarm to indicate exceedance of the action levels. The following action levels will be used:

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

  The following dust suppression techniques should be considered for controlling the generation and migration of dust during remedial activities:

  - Applying water on haul roads;
  - Wetting equipment and excavation faces;
  - Spraying water on buckets during excavation and dumping;
  - Hauling materials in properly tarped or watertight containers;
  - Restricting vehicle speeds to 10 mph;
  - Covering excavation areas and material after excavation activity ceases; and
  - Reducing the excavation size and/or number of excavations.

  When the dust suppression technique involves water application, care must be taken not to use excess water, which can result in unacceptably wet conditions.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All fifteen minute readings will be recorded and will be available onsite for State (NYSDEC and NYSDOH) personnel to review.

Organic Vapor Monitoring and Control

Based on the nature of the Site contaminants, it is anticipated that organic vapors may be emitted during remedial activities at the Congress Street Site. If organic vapors are detected in the work area 5 parts per million (ppm) above background for over 15 minutes, organic vapors will then be monitored on a continuous basis. VOCs will be monitored at the downwind perimeter of the immediate work area (i.e. the exclusion zone). Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions.

The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but are less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but is no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level at the downwind perimeter of the work area or exclusion zone exceeds the upwind perimeter concentration by more than 25 ppm, the following actions will be taken:

    1. All work will be halted.
    2. Air monitoring will be conducted at 15 minute intervals at a 20-foot offset from the exclusion zone. If two successive readings are measured by the field

instrument and documented, the work may resume following the previously described monitoring plan.

All fifteen minute readings will be recorded and will be available onsite for State (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Odor Monitoring and Control

The waste materials generated from the site may have low odor thresholds that will result in the generation of odors during intrusive activities. If increased odor levels are detected in the work area for over 15 minutes, an odor monitoring program will be implemented. The monitoring program will consist of:

- Monitoring of Site Perimeter for odors
    - At least twice per day, a designated representative of SI Group will walk around the property boundary for the purpose of odor identification.
    - At the four corners of the property and the mid points along the railroad track and 10th Avenue, the designated representative will record the identification of any odor and the intensity of the odor.
    - The frequency of the daily monitoring events may vary depending on operations that are occurring on-site.
    - The points where conditions are recorded may vary depending on conditions observed.
- Data Collection and Reporting
    - During each monitoring event, weather conditions including sky conditions, precipitation, wind direction, wind speed, temperature, relative humidity and barometric pressure will be recorded.
- Identification of Odors
    - If an odor is identified, the potential source of the odor will be identified.

If the overall intensity or concentration of the odor identified at the Site boundary become offensive, or if odor complaints are received, Site conditions and the need to implement odor control measures will be evaluated.

The following odor control measures will potentially be used to control odors depending on the source:

- Limit the size of soil stockpiles.
- Reduce the speed of intrusive activities.
- Consider weather factors when planning daily activities (e.g. wind direction and temperature).
- Cover exposed odorous soils.

If odors develop during the remedial design activities that are offensive to the surrounding community and cannot be corrected, additional odor control measures will be implemented such as limiting the amount of intrusive activities completed in a day, sheltering the soil handling areas, removing the waste materials in a timely manner and stopping the remedial design activities until additional control measures can be implemented.

Weather

Weather conditions should continuously be monitored. Extreme weather conditions such as high wind conditions, high temperatures, and intense rainfalls should be specifically monitored. These conditions may limit site activities and as a last resort remedial activities may need to be suspended until weather conditions improve.

Reporting

If any monitoring results exceed the action levels specified in the CAMP, the following reporting shall be completed:

- The exceedance will either be reported immediately to the on-site Department representative if present; or within two hours by telephone call to the Department project manager when no Department representative is on-site; and
- Within two hours by telephone call to Maureen E. Schuck of the NYS Department of Health.

A weekly report summarizing the duration and action taken in response to any exceedance will be submitted the Department of Environmental Conservation Project Manager and Maureen E. Schuck at NYS Department of Health.

APPENDIX H

Community and Environmental Response Plan

Community and Environmental Response Plan

Phase 2 Remedial Activities
Operable Unit No. 2

SI Group Congress Street Facility
Site No. 447007

CHA Project Number: 15091

Prepared for:
SI Group, Inc.
1000 Main Street, Route 5S
Rotterdam Junction, New York

Prepared by:

CHA

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September 2012

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LIST OF FIGURES

1.0 INTRODUCTION

This Community and Environmental Response Plan (CERP) has been prepared to provide a summary of the controls, monitoring plans and work practices that will implemented to protect the community and ecological resources as part of the Phase 2 Remedial Activities to be completed at the Congress Street site of SI Group, Inc. (SI Group).

1.1 SITE DESCRIPTION

The Congress Street site is a former chemical manufacturing facility located in Schenectady, New York at Congress Street and Tenth Avenue (Figure 1). The Site encompasses an area approximately 7 acres in size, with approximately 5.1 acres having been developed. Based upon the remedial investigations completed on the Site, two areas were identified as requiring remediation. These areas, as shown on Figure 2, have been identified as the Fill Area and the Process Area.

The Fill Area is an historical fill area located in the southeast corner of the Site that encompasses approximately 0.5 acres. The area is bordered to the north by an embankment leading up to 10th Avenue, to the west and south by a security fence, and to the east by the middle of the former Building No. 9. The area was reportedly used for the disposal of construction rubble and other material and debris generated on-site.

The Process Area consists of the area of the Site that was historically used for chemical processing, storage and handling. This area is located east of the Fill Area on the lower level of the Site, north of the rail line. The contamination that has been identified in this area is the result releases that have occurred over the years. A layer of black tar-like material (cresols) has also been identified as being present under the concrete slabs.

1.2 SITE REMEDIATION

A remedial investigation of the Congress Street site was conducted in 2007 with the results of the investigation presented in the *Updated Remedial Investigation Report* that was finalized in January 2009 and approved by the New York State Department of Environmental Conservation (NYSDEC) in February 2009. Based on the results of the remedial investigation, a Feasibility Study was prepared to evaluate the different remedial technologies that could be implemented at the Congress Street and was subsequently approved by NYSDEC on March 5, 2010. A Record of Decision (ROD) was issue on December 21, 2010 by NYSDEC directing SI Group to implement the selected remedy, which includes limited excavation, capping, treatment of the soils in place using a combination of heating vacuum extraction of the soil gases, and natural biological degradation.

1.3 PHASE 2 REMEDIAL ACTIVITIES

Remediation of the Congress Street site is being completed in two phases. The first phase conducted in 2011 and 2012 prepared the Process Area for installation of a thermally-enhanced soil vapor extraction (SVE) system that will be used to treat in-situ soil and obtain the necessary design information to complete the design of the treatment system. In addition, a permeable cap was installed over the Fill Area during the Phase 1 activities.

The Phase 2 Remedial Activities involve the installation of the in-situ treatment system including groundwater extraction wells, soil vapor extraction wells, and conductive soil heating wells. In addition, the treatment system will include activated carbon units to treat the soil vapor and a hot water system that will be used to heat the soils.

The CERP summarizes the controls, monitoring plans and work practices that will be implemented to protect the community and ecological resources during installation of the in-situ treatment system.

2.0 COMMUNITY AIR MONITORING PLAN

A Community Air Monitoring Plan (CAMP) will be implemented to monitor fugitive dust, organic vapors and odors if conditions on-site could potentially result in exposures to the surrounding community during the Phase 2 remedial activities. Details on the air monitoring to be performed are provided in the CAMP, included as Appendix G to the Phase 2 Remedial Design Work Plan. In addition, an Odor Management Plan will be implemented as described in Section 4.0.

If organic vapors are detected in the work area at concentrations of 5 parts per million (ppm) above background for over 15 minutes, air monitoring will then be conducted both upwind and downwind of the work area and evaluated to assess potential impacts on the ambient air. The air monitoring would include volatile organic compounds (VOCs). Fugitive dust monitoring would be conducted during periods when increased particulate levels are observed within the work area. Air monitoring will be completed during installation of in-situ treatment system within the work area as part of the Health and Safety Plan (HASP).

If, during air monitoring, downwind particulate levels exceed 100 micrograms per cubic meter for a 15 minute period or if air borne dust is observed leaving the work area; dust suppression techniques will be implemented. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work areas. If after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work will be stopped and a re-evaluation of activities initiated.

If the ambient air concentration of total organic vapors at the downwind perimeter of the work area exceeds 5 parts per million (ppm) above background for a 15 minute period, work activities will be temporarily halted and site conditions evaluated. Based on the evaluation of site conditions, vapor control techniques may be implemented.

If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but are less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but is no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

If the organic vapor level at the downwind perimeter of the work area or exclusion zone exceeds the upwind perimeter concentration by more than 25 ppm, the following actions will be taken:

1. All work will be halted.
2. Air monitoring will be conducted at 15 minute intervals at a 20-foot offset from the exclusion zone. If two successive readings are measured by the field instrument and documented, the work may resume following the previously described monitoring plan.

The dust suppression and vapor control techniques that may be implemented include;

- Applying water on haul roads.
- Wetting equipment.
- Placing waste materials in properly tarped and watertight containers.
- Restricting vehicle speeds to ten miles per hour or less.

3.0 TEMPORARY MEASURES

Within the perimeter of the Congress Street site, work zones will be established and maintained during the Phase 2 activities concerning the installation of the in-situ treatment system. The work zones will include:

- Exclusion Zone (EZ) - The exclusion zone will be the area where contamination is most likely to be encountered. The exclusion zone will be considered to be the area where the wells for the in-situ treatment system are being installed plus a 50 foot buffer zone. Flow of personnel and equipment into and out of the zone will be monitored during installation of the wells. Access will be controlled and the appropriate personal protective equipment will be used while in the exclusion zone.

- Contamination Reduction Zone (CRZ) - The contamination reduction zone will be the area where decontamination procedures take place. It is the transition area between the Exclusion Zone and the Support Zone. The purpose of the Contamination Reduction Zone is to reduce the possibility that the Support Zone and surrounding area becomes contaminated or affected by the potential contamination in the Exclusion Zone.

- Support Zone (SZ) - The Support Zone is the uncontaminated area where workers are unlikely to be exposed to hazardous substances or dangerous conditions. Because the Support Zone is free from contamination, personnel working within the area will wear normal work clothes. Any potentially contaminated clothing, equipment, and samples (outer containers) will remain inside the Contamination Reduction Zone or the Exclusion Zone. Designation of the Support Zone will be based on available site characterization data and will be located upwind from the Exclusion Zone. The Support Zone should be in an area that is known to be free of elevated (i.e., higher than background) concentrations of hazardous substances.

4.0 ODOR MANAGEMENT PLAN

An Odor Management Plan will be implemented during Phase 2 remedial activities. Installation of the wells may generate waste materials that have low odor thresholds. As a result an odor monitoring program will be implemented during periods when intrusive activities are occurring on-site and increased odor levels are detected in the work area for over 15 minutes. The monitoring program will consist of:

- Monitoring of Site Perimeter for odors
    - At least twice per day, a designated representative of SI Group will walk around the property boundary for the purpose of odor identification.
    - At the four corners of the property and the mid points along the railroad track and 10th Avenue, the designated representative will record the identification of any odor and the intensity of the odor.
    - The frequency of the daily monitoring event may vary depending on operations that are occurring on-site.
    - The points where conditions are recorded may vary depending on conditions observed.
- Data Collection and Reporting
    - During each monitoring event, weather conditions including sky conditions, precipitation, wind direction, wind speed, temperature, relative humidity and barometric pressure will be recorded.
- Identification of Odors
    - If an odor is identified, the potential source of the odor will be identified.

If the overall intensity or concentration of the odor identified at the Site boundary become offensive, or if odor complaints are received, Site conditions and the need to implement odor control measures will be evaluated.

The following odor control measures will potentially be used to control odors depending on the source:

- Limit the size of soil stockpiles.
- Reduce the speed of intrusive activities.
- Consider weather factors when planning daily activities (e.g. wind direction and temperature).
- Cover exposed odorous soils.

If odors develop during the remedial activities that are offensive to the surrounding community and cannot be corrected, additional odor control measures will be implemented such as limiting the amount of intrusive activities completed in a day, sheltering the soil handling areas, removing the waste materials in a timely manner and stopping the remedial activities until additional control measures can be implemented.

Prior to the start of remedial activities, an information sheet will be posted at key locations on the property fence providing contact information if there are any concerns regarding odor, noise, traffic, or other concerns with the project.

5.0 NOISE AND VIBRATION MITIGATION

Noise from well drilling and installation of the treatment system will be monitored for potential impact on the surrounding area. Work that will result in increased noise levels will only be completed during normal work hours. A noise level up to 75 dBA at the property line over an 8-hour period during day time hours is considered to be an acceptable level. If noise exceeds acceptable levels, the following mitigation measures will be evaluated:

- Limit the amount of work causing the increased levels of noise.
- Evaluated alternate methods to reduce the levels of noise.
- Relocate the activity away from the affected area.
- Install temporary noise barriers.

If levels cannot be mitigated to acceptable levels, work will be stopped until mitigation measures are identified that will allow the work to be completed within acceptable levels.

The proposed well drilling and installation of the in-situ treatment system should not result in any vibrations that could potentially impact the surrounding area. If vibration is noted, the potential impact will be evaluated.

6.0 SITE SECURITY

The Congress Street Site is currently secured with chain link fencing on all sides. Security cameras have been installed at strategic locations that allow the monitoring of the site 24 hours a day, 7 days a week by security personnel. The existing security system will be maintained during Phase 2 remedial activities. All gates will be locked and security fencing secured at the end of each workday.

Unauthorized personnel will not be allowed on-site.

7.0 EROSION AND SEDIMENT CONTROL MEASURES

Stormwater pollution prevention measures have been prepared as part of the Remedial Design Work Plan and will be implemented during installation of the in-situ treatment system. The work will be completed on the asphalt area that was previously installed with the only penetration of the asphalt being the installation of the wells. Temporary erosion and sediment control mitigation measures will be installed along the edge of the asphalt as required prior to the installation of any wells. Erosion control measures shall remain in place until the wells have been installed and the in-situ treatment is completed.

8.0 WASTE MANAGEMENT MEASURES

Any waste materials generated on-site will be contained and disposed off-site at a permitted facility. Any contaminated soils will be managed in accordance with the remedial Soil and Stormwater Management Plan (Appendix E to the Remedial Design Work Plan). The Soil and Stormwater Management Plan outlines the procedures to be used to characterize, manage, and disposed of any contaminated soils that are generated during remedial activities. Any contaminated soil or asphalt that is generated will be collected and stored in covered containers until the material is sent off-site for disposal.

Wastewater generated during remedial activities will be collected on-site in a temporary holding tank. The wastewater will either be sent to the on-site treatment system or sent off-site for treatment.

9.0 WATER MANAGEMENT AND TREATMENT MEASURES

Any wastewater generated on-site will be collected and treated on-site or sent off-site to a permitted treatment facility. Prior to treating any wastewater on-site, the wastewater will be characterized to ensure that the treatment system is capable of removing the potential contaminants contained in the wastewater. The existing treatment system is permitted by NYSDEC and will be operated in compliance with the existing permit.

As previously noted, sediment and erosion control measures will be implemented, as necessary, to control stormwater runoff from the Process Area asphalt cap prior to initiating any site work. Currently, all work associated with the Phase 2 remedial activities will be conducted on the asphalt cap. In the instance where land disturbance is necessary, temporary seeding or mulching will be used in areas which will be exposed for more than fourteen (14) days. Permanent stabilization will be performed as soon as possible after completion of work. After the entire project area is stabilized, the accumulated sediment shall be removed and managed in compliance with the Soil and Stormwater Management Plan. Erosion control mesures will remain in place until disturbed areas are permanently stabilized. The soil stabilization measures selected will be in conformance with the most current version of the technical standard, New York Standards and Specifications for Erosion and Sediment Control.

10.0 TRAFFIC CONTROL AND SITE ACCESS PLANS

Access to the site will be provided through the gate located on Congress Street and the gate on 10th Avenue. Deliveries and pick-up of materials will be scheduled to help control the number of trucks on-site. Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

Only authorized vehicles will be permitted on-site.

11.0 DECONTAMINATION OF TRUCKS AND EQUIPMENT

All trucks and equipment that are potentially exposed to contaminated material will be decontaminated as specified in the Contractor's required Health and Safety Plan (to be approved by the Engineer).

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers or mesh/open weave type covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during intrusive activities.

12.0 OFF-SITE TRUCKING ROUTES AND EMERGENCY PROCEDURES

The transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364, as required. Haulers will be appropriately licensed and trucks properly registered and placarded. All haulers will maintain appropriate shipping papers and/or waste manifests (6 NYCRR Part 372) as required for the material being hauled.

Truckers will be encouraged to use the most appropriate routes as shown in Figure 2 and to take into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of City-mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport; and (g) community input.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site. Trucks operators will be encouraged to comply with all applicable regulations relative to idling engines in accordance with 6 NYCRR Subpart 217-3; however, under no circumstances shall truck engines be left idling on Site for more than 5 minutes.

In the event of an emergency, all operations will cease until the situation can be assessed. The procedures specified in the Health and Safety Plan (Appendix F to the Remedial Design Work Plan) will be followed as necessary.

FIGURE

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SITE LOCATION

CONGRESS STREET FACILITY
SI GROUP INC.
SCHENECTADY, NEW YORK

PROJECT NO.
15091

DATE: 01/10/2011

FIGURE 1

File: M:\15091\CS\PHASE I DESIGN\CADD\ACAD\FIGURES\FIGURE 1.DWG Saved: 1/10/2011 11:37:33 AM Plotted: 1/10/2011 11:39:06 AM User: Newell, Sarah