FINAL REPORT
ADMINISTRATIVE ORDER ON CONSENT FOR REMOVAL ACTION
WELLS G & H SUPERFUND SITE
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS
CERCLA DOCKET #01-2003-0023

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1.0 INTRODUCTION

GeoInsight, Inc. (GeoInsight) prepared this Final Report at the request of Olympia Nominee Trust regarding activities completed at 60 Olympia Avenue in Woburn, Massachusetts (the Property). Refer to Figure 1 for the location of the Property. This Final Report was prepared to address certain requirements of the Administrative Order on Consent for Removal Action (CERCLA Docket No. 01-2003-0023; the "Order") entered into by Olympia Nominee Trust and the United States Environmental Protection Agency (USEPA) on March 17, 2003.

Soils impacted with polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyl (PCBs) were identified in two localized areas at the Property, as shown on Figure 2. Reported concentrations of PAHs and PCBs in soil samples collected from these respective areas exceeded action levels specified in the 1989 Record of Decision (ROD). As described in Section VIII of the Order, the Removal Action and work required under the Order included removal of surface soil with PAH and PCB impacts and additional characterization of and development of a work plan to address trichloroethene (TCE)-impacted subsurface soils within the former drum disposal area (FDDA).

Consistent with paragraph 35 of the Order, this Final Report summarizes activities associated with the Removal Action, including the excavation and off-site disposal of surface soil from the PAH and PCB areas. As described below, the Removal Action successfully remediated PAH and PCB impacts to achieve the action levels specified in the 1989 ROD. Therefore, the objectives of the Removal Action have been achieved.

2.0 BACKGROUND

2.1 PAH AREA

Sampling activities performed by Ebasco Services Incorporated (Ebasco) in 1987 during the Remedial Investigation for the Wells G & H Superfund Site included sampling and analysis of soils located along the western portion of the Property, near the railroad line located on the western border. At the southernmost sampling location (SS-04), PAHs were detected in shallow soils (0 to 1 foot below the ground surface (bgs)) at a total PAH concentration of 6.375 milligrams per kilogram (mg/kg). The sampling location was located between City of Woburn and Massachusetts Water Resource Authority (MWRA) sewer manholes that are situated at the southwestern corner of the Olympia Property, near the property line with Wildwood to the south. However, it must be noted that the 1987 samples were primarily collected from 0 to 2 feet bgs (12 samples) and 2 to 4 feet bgs (3 samples). Only one sample was collected from 0 to 1 foot bgs, and that was the sample with the highest reported PAH concentrations (sample SS-04; 0 to 1 foot).

Because the concentration of total carcinogenic PAHs (cPAH) detected in the soil sample was greater than the Wells G & H Superfund Site action level for total cPAHs (0.694 mg/kg), the 1989 ROD specified that 5 cubic yards of PAH-impacted soil be removed from the SS-04 location of the Olympia Property.

2.2 PCB AREA

PCBs were not detected in the 1987 samples collected from the Olympia Property by Ebasco. Subsequent soil sampling performed in 2002 by TRC Environmental Corporation (TRC) on behalf of USEPA identified a localized area of PCB impacts to surficial soil in the FDDA, located in the central portion of the upland area on the western portion of the Olympia Property (see Figure 2). The highest concentration of PCBs (33 mg/kg) was detected in a surficial soil sample collected adjacent to a small area that was occupied at the ground surface by a rubber-like material. The rubber-like material was mostly exposed at the ground surface, but was locally buried under approximately one inch of soil/woodland litter. The thickness of the rubber-like material was greatest (approximately 1.5 inches) near well TEST-1. The thickness of the rubber-like material decreased radially outward from TEST-1 and was typically approximately 0.25-inches thick over much of the area.

Based upon these sampling results, PCBs were considered to be present in exposed surface soil, as summarized in a USEPA Memorandum dated February 14, 2003. USEPA determined the PCB impacts in surface soils in this area represented a direct contact threat and that these soils should be removed, as described in Order. The Order noted that the site-specific risk-based cleanup level for PCBs established in the 1989 ROD was 1.04 mg/kg.

2.3 REMOVAL ACTION WORK PLAN

On April 16, 2003, GeoInsight submitted a document titled "Work Plan, Remedial Action, 60 Olympia Avenue, Woburn, Massachusetts" to USEPA on behalf of Olympia Nominee Trust. The Work Plan described proposed activities, including collection of additional soil samples to define the horizontal and vertical extent of PAH and PCB impacts to shallow soils in these areas, and the excavation and off-site disposal of impacted soil from the PAH and PCB areas. USEPA approved the Work Plan on April 24, 2003.

3.0 PAH AREA – REMOVAL ACTION ACTIVITIES

3.1 INITIAL SOIL REMOVAL ACTIVITIES - 2003

3.1.1 Pre-Excavation Soil Sampling

On April 10, 2003, GeoInsight collected soil samples SPS-1 through SPS-8 from the PAH area. Soil samples collected from the PAH area were designated by the prefix SPS for "Southern Property Sample." The samples were collected at depths of 0 to 6 inches bgs using hand tools. Soil samples were submitted to Spectrum Analytical Inc. (Spectrum) of Agawam, Massachusetts for laboratory analysis of PAH via USEPA Method 8270. Sample locations are shown on Figure 3. Analytical results are included in Table 1 and a copy of the laboratory analytical report is included in Appendix A. PAH were reported in each of the soil samples, and concentrations of cPAH in the SPS-4 and SPS-7 soil samples exceeded the ROD action level.

3.1.2 Pre-Disposal Soil Characterization

On April 11, GeoInsight collected one soil sample (SPS-Disposal) from the PAH impacted area for pre-disposal soil characterization. The approximate location of the pre-disposal soil characterization sample is shown on Figure 3. The soil sample was submitted to Groundwater Analytical Inc. of Buzzards Bay, Massachusetts for disposal criteria analyses including volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), PCBs, metals, corrosivity, ignitability, and reactivity. The analytical results for the soil characterization sample are summarized in Table 2 and the laboratory analytical report is included in Appendix A.

3.1.3 Permits

On April 11, 2003, GeoInsight submitted an application for an 8(m) permit from the Massachusetts Water Resource Authority (MWRA) to work in the vicinity of the sewer line. On June 6, 2003, MWRA issued 8(m) permit #03-04-223M to GeoInsight regarding Removal Action activities. A copy of the permit is included in Appendix B.

GeoInsight contacted the City of Woburn Engineering Department to evaluate whether a similar permit was required to conduct work in the vicinity of the City's sewer line. Discussions with Brett Gonsalves of the Woburn Engineering Department indicated that a permit would not be necessary to work in the vicinity of the sewer line. GeoInsight also contacted the Superintendent of the Woburn Department of Public Works to discuss field activities and confirm the information provided by Mr. Gonsalves. GeoInsight obtained Dig Safe permits (#2003-161-0418 and #2003-230-4412) for utility clearance once the Work Plan was approved.

3.1.4 Soil Excavation and Post-Excavation Sampling

On June 4, 2003, GeoInsight oversaw the excavation of approximately 3 cubic yards of soil from the PAH area. Erosion control measures, consisting of mulch wattles, were installed prior to excavation around the planned excavation area on the east side abutting the wetland area. The excavated soil was consolidated with the soil excavated from the PCB area (described in Section 4.1.4 below) and subsequently transported off-site for disposal with the soil from the PCB area. The area was not backfilled because only a relatively thin layer of surface soil was removed.

On June 4, 2003, GeoInsight collected eight post-excavation soil samples, identified as SPE-1 through SPE-8, for laboratory analysis of PAH via USEPA Method 8270. Refer to Figure 3 for the locations of the post-excavation soil samples. Analytical results are included in Table 1 and a copy of the laboratory report is included in Appendix A. Of the eight post-excavation samples, reported concentrations of cPAH exceeded the ROD level in three of the samples, which were generally located along the western side of the excavation.

3.2 FOLLOW-UP SOIL REMOVAL ACTIVITIES - 2022

On April 8, 2022, the USEPA provided a Technical Memorandum that included a statistical evaluation of the PAH area sample results. Two pre-excavation samples (from areas that were not subsequently excavated) and eight post-excavation samples were used to evaluate post-excavation conditions. USEPA's 1993 *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons* was followed to calculate the benzo(a)pyrene (BaP) equivalent concentrations for the seven identified cPAHs in each sample. The BaP equivalent concentrations were calculated using the assigned Relative Potency Factors (RPFs) from the USEPA guidance. USEPA's ProUCL software was used to calculate the 95 percent Upper Confidence Limit (UCL) of the arithmetic mean for the BaP equivalent concentrations of these ten samples, and the 95 percent UCL of the arithmetic mean recommended by the ProUCL software was 1.004 mg/kg. The Technical Memorandum noted that this calculated UCL of the arithmetic mean exceeded the ROD Action Level of 0.694 mg/kg for cPAHs. A copy of the April 8, 2022 technical memorandum is included as Appendix C.

In response to the April 8, 2022, Technical Memorandum, GeoInsight submitted Action Plan, which outlined the proposed further response actions for the PAH area, to USEPA on April 27, 2022. This Action Plan was revised per USEPA comments received on May 10, 2022 and a Revised Action Plan was submitted on May 12, 2022. USEPA approved the Work Plan on May 16, 2022. The completed response actions are summarized below.

3.2.1 Area Preparation

Recent field observations of the area conditions indicated low overgrowth, small saplings, and one large tree in the proposed work area between the manholes. Small saplings and brush were removed to prepare the area for excavation following pre-disposal soil characterization sampling

(described in Section 3.2.2 below). Because the tree is located between the manholes, and east of the post-excavation sample location SPE-8, excavation activities were limited to the edge of the tree and associated root structure. The tree was not removed in order to minimize impacts to nearby wetlands by limiting disturbance of deeper soils. Prior to site activities, erosion control measures, consisting of mulch/straw wattles, were installed around the planned excavation area on the east side abutting the wetland area.

3.2.2 Pre-Disposal Soil Characterization

On May 20, 2022, GeoInsight collected two pre-excavation soil samples to characterize soil for disposal purposes. One soil sample consisted of a composite of six grab samples collected from the proposed excavation area from depths of 0 to 12 inches bgs. The composite sample was submitted to a laboratory for analysis of the following parameters:

- Semi-volatile organic compounds by USEPA Method 8270D;
- Resource Conservation and Recovery Act (RCRA) 8 metals by Method 6010D or 7471B;
- Polychlorinated biphenyls (PCBs) by USEPA Method 8082A;
- Total Petroleum Hydrocarbons (TPH) by USEPA Method 8015D;
- Specific conductance by USEPA Method 9050A;
- pH by USEPA Method 9045D;
- Ignitability by USEPA Method 1030; and
- Reactive cyanide and sulfide by Method 125.

The second soil sample was a grab sample collected from the approximate center of the proposed excavation area, near the SS-3 soil sample location, from a depth of 0 to 12 inches bgs and analyzed for volatile organic compounds (VOCs) by USEPA Method 8260C. VOCs were not detected in the soil sample collected from the SS-3 soil sample location.

Due to elevated levels of chromium in surface soil detected in the 2003 pre-disposal soil sample collected from the PAH area, toxicity characteristic leaching procedure (TCLP) analysis for chromium was performed on April 11, 2003, by USEPA Method 1311 to determine if the soil should be considered a characteristic hazardous waste. TCLP analysis for chromium by USEPA Method 1311 was performed again on a sample collected on May 20, 2022. Concentrations of leachable chromium from the TCLP analysis of the April 2003 and May 2022 pre-disposal characterization samples were below the characteristic hazardous waste threshold.

Disposal characterization analytical results from the 2022 samples are summarized in Table 3 and copies of the laboratory analytical reports are included in Appendix A. Soil testing requirements were coordinated with the disposal facility. Based upon the soil pre-disposal characterization testing completed in May of 2022, the Clean Earth facility in Loudon, New Hampshire was selected to process the excavated soil for thermal treatment.

An Off-Site Rule Compliance Request Form was prepared and submitted to the On-Scene Coordinator (OSC) for the regional Off-Site Rule Coordinator's review and determination. The

regional Off-Site Rule Coordinator, approved our request on June 9, 2022, confirming the proposed receiving facility was acceptable to receive the waste.

3.2.3 June 2022 Soil Excavation and Post-Excavation Sampling

In June 2022, two focused rounds of soil excavation and sampling were performed in the area between two MWRA and City of Woburn sewer manholes, particularly in the area of the three 2003 post-excavation soil samples where reported cPAH concentrations exceeded the ROD level of 0.694 mg/kg. Figure 4 shows the proposed excavation area relative to features in the PAH area.

On June 16, 2022, excavation was focused on the western portion of the 2003 excavation area, in the vicinity of 2003 post-excavation samples SPE-1, SPE-6, and SPE-8. The excavation measured approximately 7 feet wide by 18 feet in length and approximately one foot deep. This excavation generated approximately 5 cubic yards of soil.

Soil was removed with a mini excavator and placed in a roll-off container and covered to prevent dust generation and reduce rainwater infiltration. The June 16, 2022 excavation was able to minimize impacts to the tree by excavating around the tree roots. During excavation, airborne dust was evaluated visually, and the activities did not generate significant airborne dust.

On June 16, 2022, a total of ten post-excavation samples were collected from the excavation area for laboratory analysis of PAH by USEPA Method 8270D. Six samples were collected from the sidewalls (SS-1-SIDEWALL, SS-2-SIDEWALL, SS-4-SIDEWALL, SS-6-SIDEWALL, SS-8-SIDEWALL, SS-10-SIDEWALL) and four samples were collected from the base (SS-3-BOT, SS-5-BOT, SS-7-BOT, SS-9-BOT). Two soil samples were collected from each of the east and west side walls (4 samples) and one sample was collected from each of the north and south side walls (2 samples). These sidewall samples were collected of soil representing the 0 to 12-inch bgs depth interval at each sidewall. The four samples collected from the base of the excavation were collected at a depth of 12 to 18 inches bgs. One duplicate soil sample was also collected to evaluate sample variability. The approximate locations of the June 16, 2022 post-excavation samples are shown on Figure 5.

Of the ten samples taken on June 16, 2022, concentrations of BaP equivalents[1] in four of the post-excavation samples exceeded the ROD Action Level of 0.694 mg/kg. These four samples were two sidewall samples (SS-4-SIDEWALL and SS-10-SIDEWALL) and two bottom samples (SS-7-BOT and SS-9-BOT). Refer to Table 4 for a summary of the June 16, 2022, results, and Table 5 for a summary of the June 16, 2022, sample BaP equivalent concentrations. A copy of the laboratory analytical report is included in Appendix A.

1 The BaP equivalent concentration is calculated by summing the detected concentrations in each sample multiplied by their respective Relative Potency Factors from EPA's 1993 *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons*.

Based upon these results, a second round of soil excavation and sampling was performed on June 28, 2022. The excavation targeted areas based on the sample results from June 16, 2022. Specifically, the four locations where BaP equivalent concentrations exceeded the ROD Action Level, as described above, were targeted for further excavation. While the PAH concentrations in sample SS-8-SIDEWALL did not exceed the ROD Action Level, soil from this sample location was removed as part of the general excavation at the southern end of the excavation area. These five samples (the four samples where the ROD Action Level was exceeded plus SS-8-SIDEWALL) are shaded gray on Table 4 because soil at these locations was subsequently excavated and removed.

Approximately 3 cubic yards of soil were excavated with a mini-excavator or using hand tools and placed into the roll-off container. The presence of a small amount of a chalky white substance, suspected to be ash, was noted near the SS-9-BOT location prior to excavation. The excavation in this area, the southern end of the original excavation area, followed visual traces of this substance. A large rock was removed, along with some tree roots, during the excavation, and the small volume of soil with the white ash-like substance was successfully removed. During excavation, airborne dust was evaluated visually, and the activities did not generate significant airborne dust.

On June 28, 2022, six additional post-excavation soil samples were collected from the sidewalls and bottom of the excavation for laboratory analysis of PAH by USEPA Method 8270D. The six soil sample locations, as well as the approximate outline of the excavation area, are shown on Figure 6. The samples consisted of four sidewall samples (one collected from the 0-12 inch bgs depth interval [SS-11-SIDEWALL] and three collected from the 0-36 inch bgs depth interval [SS-13-SIDEWALL, SS-14-SIDEWALL, and SS-15-SIDEWALL]) and two bottom samples (one collected at the 24-30 inch bgs interval [SS-12-BOT] and one collected at the 36-42 inch bgs interval [SS-16-BOT], commensurate with the depth of the excavation).

The June 28, 2022, sample results are summarized in Table 6, and a copy of the laboratory analytical report is included in Appendix A. The BaP equivalent concentrations for each of the six samples were below the ROD Action Level of 0.694 mg/kg and are discussed further below.

3.2.4 Work Area Restoration and Soil Disposal

On July 7, 2022, the excavation was backfilled and graded with clean fill obtained from Benevento Sand & Gravel in North Reading, Massachusetts. The erosion controls will be left in place until vegetation resumes in the area.

On August 17, 2022, Trident Environmental Group transported the roll-off container, which contained approximately 10 tons of soil, to the Clean Earth facility in Loudon, NH, under a Material Shipping Record. A summary of the amount of soil removed from the PAH area is included in Table 7. A copy of the disposal documentation is included in Appendix D.

3.3 POST-REMOVAL ACTION DATA EVALUATION

Following receipt of the June 28, 2022 sample results, GeoInsight performed a compliance evaluation using 17 soil samples from the PAH area that represent post-excavation conditions, including pre-excavation samples collected from soil that was not subsequently excavated. The 17 samples include pre- and post-excavation samples from 2003 and 2022, and the six samples from the June 28, 2022, sampling. Together, the 17 samples represent current conditions and provide sufficient spatial coverage at the PAH area, as shown on Figure 7.

The BaP equivalent concentrations in each of the 17 samples that are considered to be representative of post-excavation conditions are below the ROD Action Level of 0.694 mg/kg. To further evaluate post-excavation soil quality, GeoInsight conducted a compliance evaluation in a manner consistent with the approach described in an April 8, 2022, Technical Memorandum provided by USEPA, as described above. BaP equivalent concentrations for each sample result were calculated using the assigned RPFs, as shown in Table 8. The laboratory reporting limit for BaP was used for those samples where cPAH were not detected. EPA's ProUCL software version 5.1 (2016) was used to calculate a 95 percent UCL of the arithmetic mean for the BaP equivalent concentrations. The ProUCL output is included as Appendix E.

The 95 percent UCL of the arithmetic mean recommended by the ProUCL software for this data set is 0.189 mg/kg (see Table 8 and Appendix D). The calculated 95 percent UCL of the arithmetic mean is well below the ROD Action Level of 0.694 mg/kg for cPAHs.

4.0 PCB AREA – REMOVAL ACTION ACTIVITIES

4.1 SOIL REMOVAL ACTIVITIES - 2003

The 2003 Removal Action focused on removing surface soil contaminated with PCBs, beginning at the ground surface. Surficial soil samples were initially collected in a grid pattern at a 5-foot spacing from the area of interest to delineate the impacts to surficial soil. As the excavation proceeded with depth, perimeter samples were collected to bound the lateral extent of impacted areas, and bottom samples were collected to assess the vertical bounds. The highest PCB concentrations were identified to be near the ground surface and generally decreased with depth. Specific information regarding the 2003 Removal Action for the PCB area is summarized below.

4.1.1 Pre-Excavation Soil Sampling

As part of the Removal Action, additional characterization activities were completed to define the horizontal and vertical extent of PCB impacts to shallow soil in the vicinity of the TEST-1 well location, as shown on Figure 8. On April 10, 2003 GeoInsight collected 18 soil samples from the PCB-impacted area to evaluate the distribution of PCBs in surficial and shallow soil. Soil samples collected from the PCB area were designated by the prefix CPS for "Center Property Sample." During the initial soil sampling event, the sampling area was defined by an approximately 20-foot square sampling grid. This square grid was subsequently sub divided equally into nine smaller squares, with soil samples collected from the "nodes" (i.e., intersection points) of the resultant grid. The resulting spacing between each sample node was approximately 6.7 feet. After the initial sampling square was established, field observations and laboratory results indicated that the extent of the rubber-like material extended beyond two of the original square boundaries. Therefore, the sampling grid was extended to the north and east (by one square) using the same node spacing established in the original square.

Soil samples were collected by hand with disposable trowels or spoons. A total of 16 shallow soil samples (CPS-1 to CPS-10 and CPS-12 to CPS-16) were collected between 0 and 6 inches below ground surface (bgs). A shallow soil sample was not collected at node CPS-11 because this area was previously characterized by TRC (Sample FDD-003, the "center sample" was collected approximately 2.5 feet southeast of the CPS-11 location). Deeper soil samples were also collected at three locations. Sample CPS-11D was collected from 9 to 12 inches bgs, and samples CPS-5D and CPS-7D were collected at 12 inches bgs. Soils encountered at each sampling location consisted of tan, well-sorted sand with lesser amounts of gravel. Stained soil was not observed.

The approximate extent of the surfical "rubber-like" material is indicated on Figure 8. If one of the sampling locations (based upon the 6.5-foot grid spacing) was located in an area where the rubber like material was present, a hole was cut in the rubber material and the sample was collected from the underlying 6-inch interval.

Soil samples were submitted to Spectrum Analytical Inc. Spectrum of Agawam, Massachusetts for analysis of PCBs by EPA Method 8082. Analytical results are included in Table 9. The table includes two laboratory duplicate samples that were submitted for samples CPS-7D and CPS-14.

PCBs were detected in the soil samples at concentrations ranging from "not detected" above the laboratory reporting limit (approximately 0.25 mg/kg) to 26.5 mg/kg. The highest PCB concentrations were detected in soil samples from the northern and eastern boundaries of the sampling grid. Therefore, additional pre-excavation soil sampling was conducted in these areas.

On April 22, 2003 eight additional surficial soil samples designated CPS-17 through CPS-24 were collected to the east and north of the original sampling area using a spacing identical to the original sampling grid. Soil samples were collected from 0 to 6 inches bgs. PCBs were not detected in these eight samples above the reporting limit of 0.25 mg/kg. Analytical results for these samples are included in Table 9.

Of the 26 soil samples collected during the initial characterization events, reported PCB concentrations in six of the samples (not including the lab duplicate sample associated with CPS-14) exceeded1.04 mg/kg. Overall, the concentrations of PCBs in impacted soil above the target concentration ranged from 3.00 mg/kg (lab duplicate sample from CPS-14) to 26.5 mg/kg (CPS-13).

Based upon the pre-excavation soil samples collected on April 10 and 22, 2003, the excavation area was defined to be soil beneath, and in the immediate vicinity of, soil samples CPS-5, CPS-6, CPS-9, CPS-10, CPS-13, and CPS-14. Soil beneath the "rubber-like" material was also identified as material to be included in the excavation activities.

4.1.2 Remediation Waste Characterization

On April 11, 2003, GeoInsight collected one soil sample (CPS-Disposal) from the PCB impacted area for pre-disposal characterization. The soil sample was submitted to Groundwater Analytical Inc. of Buzzards Bay, Massachusetts for disposal criteria analyses including volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), PCBs, metals, corrosivity, ignitability, and reactivity. The analytical results for the soil characterization sample are included in Table 2 and a copy of the laboratory analytical report is included in Appendix A.

4.1.3 Permits

As described in Section 3.1.3 above, GeoInsight obtained an 8(m) permit #03-04-223M from MRWA regarding Removal Action activities (a copy of the permit is included in Appendix B). The Cit of Woburn did not require a permit to work in the vicinity of the City's sewer line.

4.1.4 Soil Excavation and Post-Excavation Sampling

Based upon the results of the initial soil characterization activities, GeoInsight coordinated and oversaw the removal of PCB-impacted soils at the Olympia Property. Trident Environmental Group (Trident) of Marlborough, Massachusetts excavated and placed PCB-impacted soils in transportation containers. Impacted surficial and shallow soil was removed using a combination of hand tools and a small backhoe. During soil excavation activities GeoInsight collected confirmatory soil samples from the excavation bottom and sidewalls (including duplicate soil samples). The confirmatory soil samples were submitted to Spectrum for laboratory analysis of PCBs using EPA Method 8082.

Soil excavation activities in the PCB area began on June 3, 2003. The soil located under the "rubber-like" material was excavated to a depth of 6 inches bgs. Prior to excavation, the "rubber-like" material was removed and placed into four 55-gallon containers for disposal. Excavated soil was placed in cubic yard containers (Waste Packs) that were labeled in the field. A total of 13 Waste Packs of surficial soil were generated on this date. On June 3, 2003, GeoInsight collected 21 post-excavation soil samples from 19 locations (CPE-1 through CPE-19 and field duplicate samples of CPE-9D and CPE-19D) from the sidewalls and bottom of the excavation. Sidewall samples were collected at 11 locations at a spacing interval of one sample every 10 feet. Samples from the bottom of the excavation were collected at 8 locations based upon a sampling frequency of one sample for every 100 square feet of excavation footprint.

PCB concentrations were detected in the samples from 7 of the 19 sampling locations at concentrations that exceeded the ROD target cleanup level (Table 10). Figure 9 illustrates the 19 sampling locations and the corresponding PCB concentration for each sample. The highest PCB concentrations were detected in samples CPE-13, CPE-14, and CPE-3 at concentrations of 19.6 mg/kg, 22.7 mg/kg, and 26.2 mg/kg, respectively.. Additional excavation activities were required to remove impacted soil that remained in these locations.

Before proceeding with additional excavation activities, two soil borings (designated CPE-20 and CPE-21) were advanced on June 11, 2003 to characterize the vertical extent of PCB-impacted soil within this area of the excavation. The locations of the borings are illustrated on Figure 9. In each boring, soil samples were collected at depths of 6 inches, 12 inches, 18 inches, and 24 inches below the bottom of the excavation (which, after the first excavation, was approximately 6 inches below the original ground surface). The highest PCB concentrations detected in borings CPE-20 and CPE-21 were 10.6 mg/kg and 7.8 mg/kg, respectively. PCB at concentrations above the ROD clean up level extended to depths of 18 inches below the bottom of the excavation at location CPE-20 and 6 inches below the bottom of the excavation at location CPE-21. Ground water was encountered in these borings at approximately 3 feet below the bottom of the excavation. Analytical results for these soil samples are included in Table 10.

Additional soil excavation activities were conducted on June 25, 2003. Based upon the analytical results from the soil boring CPE-20 and CPE-21, the excavation was divided into two sections: an area in the northeast corner of the sampling grid (near CPE-20) and a smaller area located around monitoring well TEST-1 (near CPE-21). The area in the northeast corner was excavated to a total depth of 2.5 feet bgs, and the area around TEST-1 was excavated to a total depth of one foot bgs. The depth of excavation on the northeast corner was limited by the presence of the water table that was observed at approximately 2.5 feet bgs. GeoInsight collected 20 post-excavation soil samples (CPX-1 through CPX-20) from the sidewalls and bottom of the excavated areas according to the confirmatory sampling spacing described for the previous events. PCB concentrations in 5 of the 20 post-excavation samples collected exceeded the ROD target cleanup level of 1.04 mg/kg (Table 10). Figure 10 illustrates the 20 sampling locations, the two additional excavation areas, and the PCB concentrations for each sample. Based upon the June 25, 2003 sampling results, PCB concentrations in soil in the northeast corner of the original sampling grid exceeded the ROD target level and required additional excavation.

On July 31, 2003, soil excavation was conducted to the northeast of TEST-1 and beyond the original sampling grid to the east, as shown on Figure 11. Approximately 1 foot of soil was removed from the area to a total approximate depth of 3.5 feet bgs. During excavation activities the water table was located approximately 2 feet bgs and excavated soils were saturated with groundwater. GeoInsight collected eight post-excavation soil samples (PCB-X-1 through PCB-X-8) from the sidewalls and bottom of the excavated area. Figure 11 illustrates the soil sampling locations and the concentrations of PCBs detected in each sample.

The excavated soil was placed in a temporary dewatering cell that was constructed so that ground water in the excavated soil would drain back into the excavation. The dewatering cell was built adjacent to the south side of the PCB excavation area and consisted of four 4 by 8 foot plywood sheets placed on the ground and covered with a water-permeable geofabric. Hay bales were placed on three sides of the holding cell and the membrane was draped and secured over the hay bales to contain the excavated soils in the cell. The open end of the holding cell faced towards the excavation area to allow for ground water to drain back into the excavation. On August 28, 2003, after sufficient time to allow water to drain out of the soil, the soil in the dewatering cell was placed into waste packs. A summary of material removed from the PCB area is included in Table 7.

PCB concentrations in 6 of the 8 post-excavation samples met the target concentration of 1.04 mg/kg established by the ROD (Table 10 and Figure 11). Two soil samples collected at a depth of 3 to 3.5 feet bgs were above the ROD target. However, these samples were collected at depths greater than 3 feet below grade, are located below the normal water table, and soil at this depth is not considered to be surface soil.

4.1.5 Equipment and Decontamination

The PCB-impacted soil was excavated using a combination of hand tools and a small rubber track backhoe. The equipment was operated by licensed operators with OSHA HAZWOPR certifications. At the completion of each excavation event, the small backhoe and hand tools used were cleaned using a pressure washer in a self-contained decontamination pool that was placed adjacent to the work area. Rinsate water was collected and pumped from the pool into 55-gallon containers for off-site disposal. During the soil excavation activities, personal protective equipment, plastic sheeting, sampling equipment, and filter fabric was collected and disposed in waste packs for off-site disposal.

4.2 FOLLOW-UP ACTIVITIES - 2022

USEPA provided an April 8, 2022, Technical Memorandum (Appendix C) that evaluated the post-excavation PCB soil concentrations relative to the ROD Soil Action Levels using a statistical approach. The Technical Memorandum considered four pre-excavation soil samples and 33 soil samples collected during the excavation that are representative of post-excavation conditions. The concentrations from these 37 samples were used to calculate the 95 percent UCL of the arithmetic mean concentration using the USEPA's ProUCL program. The resultant 95 percent UCL of the arithmetic mean identified in the Technical Memorandum was 0.778 mg/kg, which is less than the ROD Soil Action Level of 1.04 mg/kg.

The May 2, 2022 Revised Action Plan stated that GeoInsight would conduct a review of the data retained for the statistical analysis for the PCB area, the sample distribution and appropriate UCL calculation methods would be identified, and that GeoInsight would independently calculate a 95 percent UCL of the arithmetic mean using the ProUCL program. In addition, GeoInsight would evaluate the representativeness of the existing data set for the samples collected in the PCB area to identify whether adequate sampling coverage was attained.

4.3 POST-REMEDIATION DATA EVALUATION

As part of the Removal Action, soil samples were collected to define the horizontal and vertical extent of PCB impacts to shallow soil near the TEST-1 well location at the Olympia Property. In April 2003, a total of 26 pre-excavation soil samples were collected and submitted for laboratory analysis. As shown on Figure 8, the April 2003 sampling activities successfully delineated the horizontal extent of PCB contamination in the surficial soils (0 to 6 inches) in this area, as the concentrations in the perimeter sample locations to the north, east, south, and west of the TEST-1 well location were either below the laboratory reporting limits or below the ROD-specified clean up level. This delineation allowed for targeted excavation vertically downward in the areas where PCB concentrations exceeded the ROD Action Level.

Between June and August 2003, three rounds of soil excavation and post-excavation sampling were completed in the PCB-impacted area. At the conclusion of the iterative soil excavation, which included the collection of perimeter samples to delineate areas to target for the next round of excavation, there remained only two sample locations where concentrations exceeded the ROD Action Level of 1.04 mg/kg (see Figure 11). However, these samples were taken from between 3 to 3.5 feet below grade, which is below the water table. Soils at this depth are not considered to be surface soil and are not anticipated to result in direct human contact. Therefore, this Removal Action remediated PCB impacts in surface soil that represented a direct contact threat, as identified by USEPA in the February 14, 2003 memorandum.

The April 8, 2022 Technical Memorandum provided by USEPA included a compliance evaluation of the 2003 PCB Removal Action. As described above, this compliance evaluation used a statistical approach to identify the 95 percent UCL on the arithmetic mean concentration of 37 PCB sample results and compare it to the ROD Action Level. The 95 percent UCL identified in the output from the ProUCL software was 0.778 mg/kg, which is below the ROD Action Level of 1.04 mg/kg for total PCBs.

GeoInsight reviewed the analytical data set to identify soil samples that represent post-excavation soil conditions. GeoInsight concurs with the selection of the 37 sample locations used in the April 8, 2022 Technical Memorandum; these samples are a combination of pre- and post-excavation samples that are representative of current conditions and provide sufficient spatial coverage of the PCB-impacted area. Soil samples selected for the analysis are highlighted on Figures 8 through 11. Figure 12 shows the locations of each of the 37 representative soil samples, with the PCB concentrations at each soil sample location. GeoInsight utilized the ProUCL software to independently derive the 95 percent UCL of the arithmetic mean concentration from the same 37 sample locations (Table 11). GeoInsight found the ProUCL software recommendation for the 95 percent UCL of the given data set to be 0.778 mg/kg, which matches the value identified in the April 8, 2022 Technical Memorandum. The ProUCL output generated by GeoInsight for the PCB area is included as Appendix F. The statistical analysis therefore supports the conclusion that the Removal Action has achieved compliance with the ROD clean-up goals.

5.0 TCE IN SUBSURFACE SOIL

Characterization activities associated with TCE impacts to subsurface soil within the FDDA were summarized in the "Revised TCE Work Plan, Removal Action, 60 Olympia Avenue, Woburn, Massachusetts (the "TCE Work Plan") submitted to the USEPA on January 28, 2004. The USEPA approved the TCE Work Plan (with conditions) on March 10, 2004. Refer to the TCE Work Plan for additional information regarding soil characterization activities conducted to evaluate TCE in subsurface soil. USEPA and Olympia Nominee Trust entered into a separate Administrative Order on Consent for Removal Action (CERCLA Docket No. 01-2004-0059) on June 9, 2004 to address the clean up of TCE-impacted soil in the FDDA on the Property.

6.0 REMOVAL ACTION SUMMARY

6.1 PAH AREA

The 2022 Removal Action completed in the PAH-impacted area successfully remediated PAH impacts in soil. BaP equivalent concentrations in each of the soil samples that represent post-excavation conditions were below the ROD Action Level. The 95 percent UCL of the arithmetic mean concentration of BaP equivalent concentrations in the post-excavation soil samples was also below the RPD Action Level. Therefore, the remedial actions performed in the PAH area have achieved compliance with the ROD and no further action related to the PAH area is anticipated.

6.2 PCB AREA

The Removal Action completed in the PCB-impacted area successfully remediated PCB impacts in surface soil that represented a direct contact threat, as identified in the Order. The extent of surface soil contamination was characterized through initial grid sampling conducted the area of interest. Subsequent, iterative excavation removed impacted soil and additional perimeter soil sampling characterized remaining PCB impacts to soil. Residual concentrations of PCBs above the ROD Action Level were identified in only two locations, and at depths greater than 3 feet bgs, which is below the water table. The success of the Removal Action is further supported by a statistical analysis provided in the April 8, 2022 Technical Memorandum, and independently confirmed by GeoInsight, that found the 95 percent UCL on the arithmetic mean concentration of 37 soil samples that are representative of post excavation conditions to be 0.778 mg/kg, which is below the ROD Action Level of 1.04 mg/kg. Therefore, the objectives of the Removal Action have been achieved and no further action related to the PCB area is anticipated.

6.3 TCE IN SUBSURFACE SOIL

Characterization activities associated with TCE impacts to subsurface soil within the FDDA were summarized in the January 28, 2004 TCE Work Plan, which was approved by USEPA (with conditions) on March 10, 2004. Refer to the TCE Work Plan for additional information regarding soil characterization activities conducted to evaluate TCE in subsurface soil.

7.0 STATEMENT OF COST

A summary of the good faith estimate of costs incurred during the Removal Action is attached as Appendix G.

8.0 CERTIFICATION

Consistent with Paragraph 35 of the Order, the Final Report includes the following certification that was signed by the person who supervised and directed the preparation of the report:

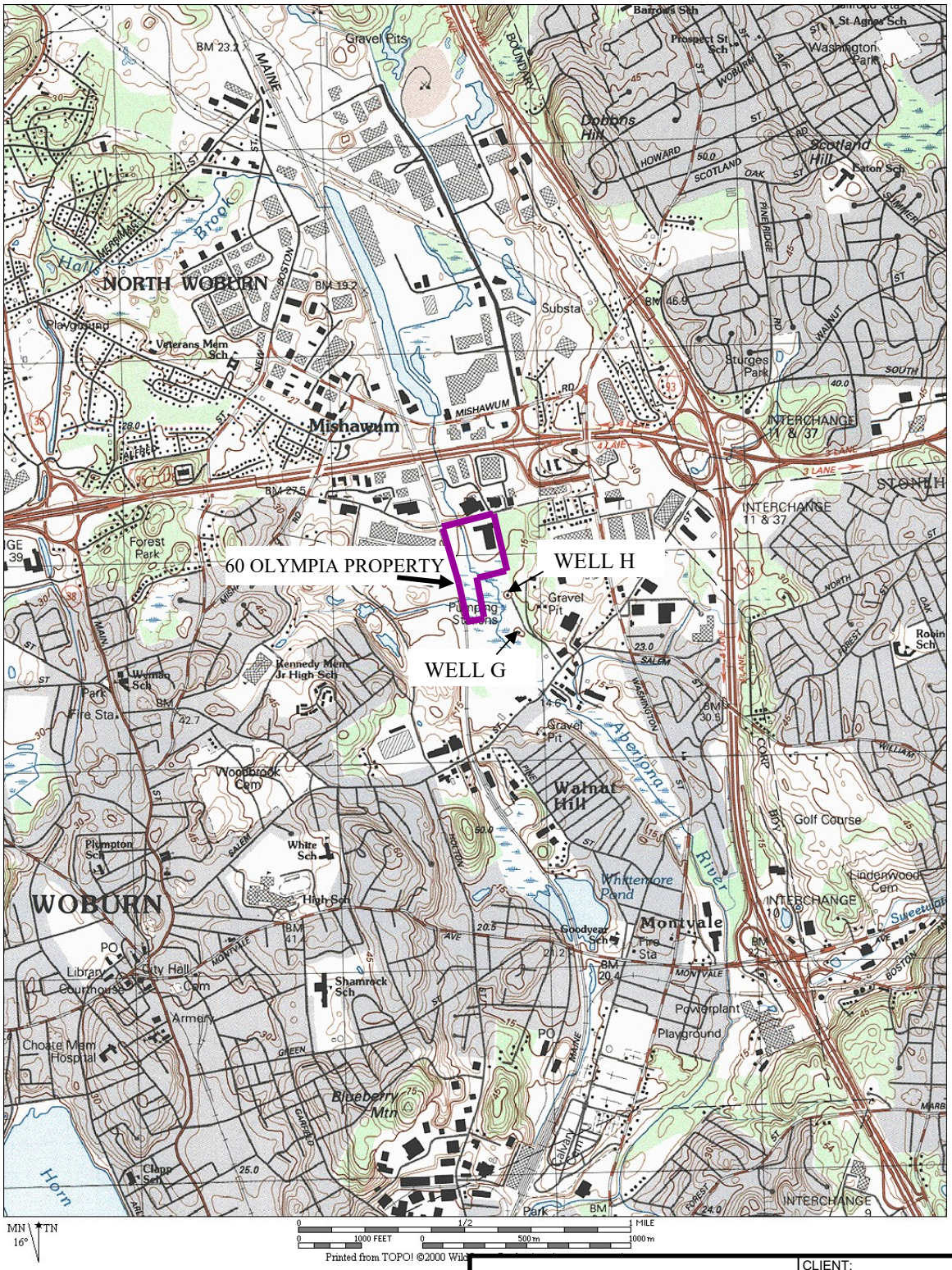
> "Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Kevin Trainer, C.P.G, P.G, LSP.
Senior Geologist

October 20, 2022

(Date)

FIGURES



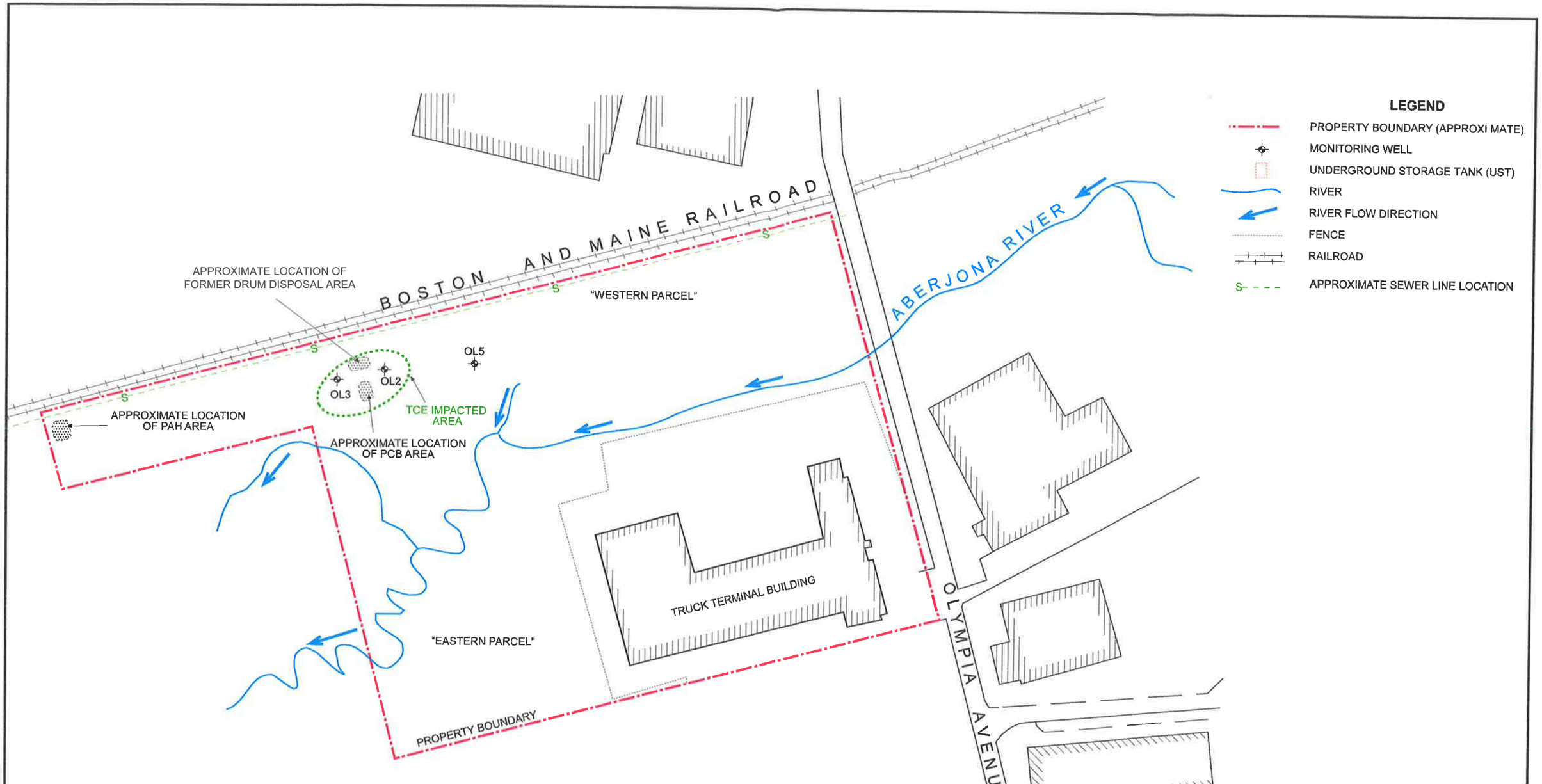
CONTOUR INTERVAL: 3 METERS DATED: 1985
SOURCE: BOSTON NORTH, MASSACHUSETTS, USGS QUAD.

N

GEO Insight INC.

CLIENT:	OLYMPIA NOMINEE TRUST
PROJECT:	60 OLYMPIA PROPERTY WOBURN, MASSACHUSETTS
TITLE:	SITE LOCUS

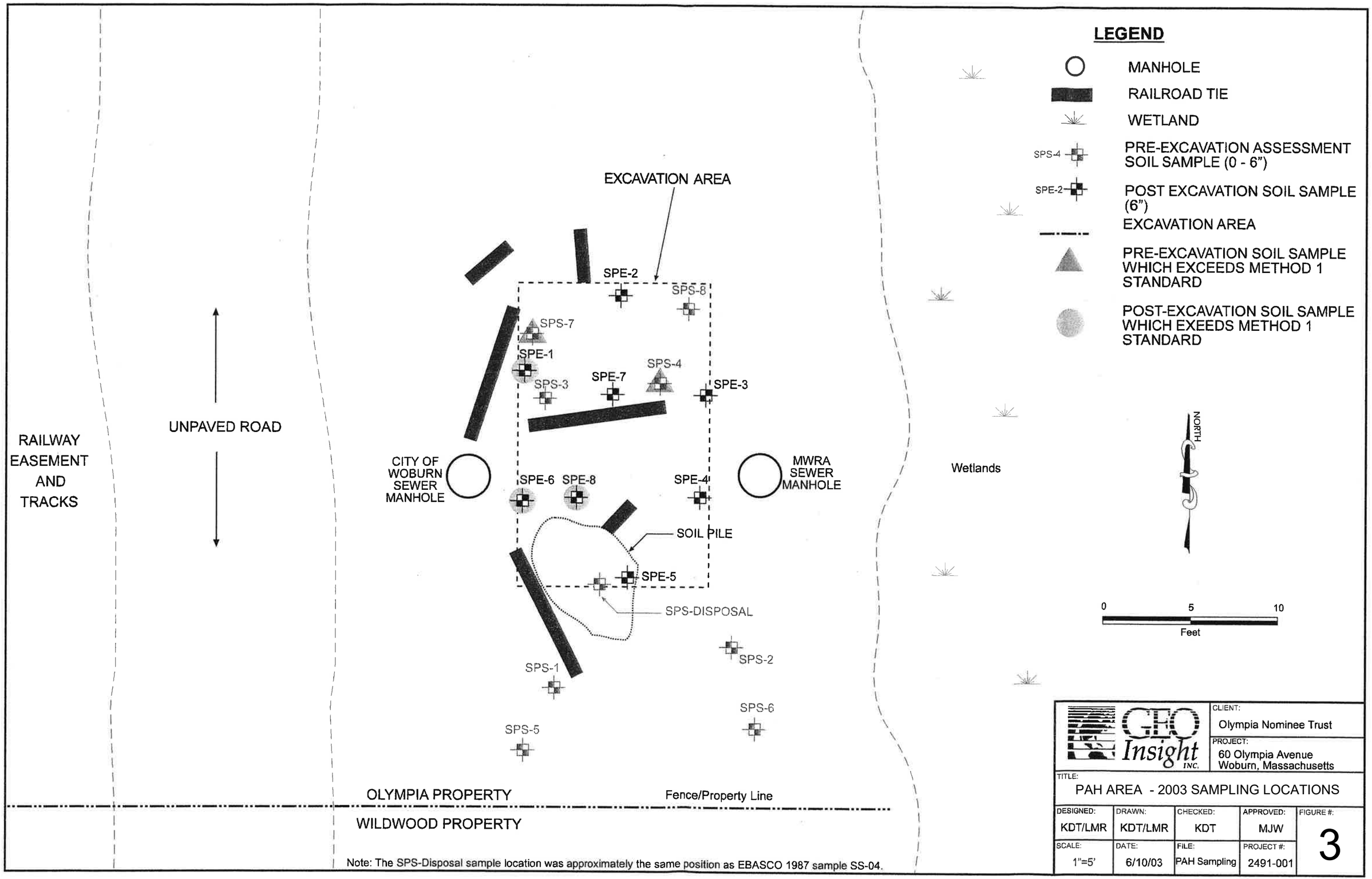
DESIGNED:	DRAWN:	CHECKED:	APPROVED:	FIGURE:
LMR	LMR	MJW	MJW	1
SCALE: AS SHOWN	DATE: 3/31/04	FILE NO.: 2491SL	PROJECT NO: 2491-002	



GEO Insight INC.

CLIENT:	Olympia Nominee Trust
PROJECT:	Olympia Property Wells G & H Woburn, Massachusetts
TITLE:	SITE PLAN

DESIGNED:	DRAWN:	CHECKED:	APPROVED:	FIGURE #:
LM	LMR	LM	MJW	2
SCALE: 1" = 200'	DATE: 6/16/03	FILE: 2491 SITEPLAN	PROJECT #: 2491	


LEGEND
MANHOLE
RAILROAD TIE
WETLAND
SPS-4
PRE-EXCAVATION ASSESSMENT SOIL SAMPLE (0 - 6")
SPE-2
POST EXCAVATION SOIL SAMPLE (6")
EXCAVATION AREA
PRE-EXCAVATION SOIL SAMPLE WHICH EXCEEDS METHOD 1 STANDARD
POST-EXCAVATION SOIL SAMPLE WHICH EXEEDS METHOD 1 STANDARD
EXCAVATION AREA
SPE-2
SPS-8
SPS-7
SPE-1
SPS-4
SPS-3
SPE-7
SPE-3
UNPAVED ROAD
RAILWAY EASEMENT AND TRACKS
CITY OF WOBURN SEWER MANHOLE
MWRA SEWER MANHOLE
SPE-6
SPE-8
SPE-4
Wetlands
SOIL PILE
SPE-5
SPS-DISPOSAL
SPS-2
SPS-1
SPS-6
SPS-5
NORTH
0
5
10
Feet
OLYMPIA PROPERTY
Fence/Property Line
WILDWOOD PROPERTY
Note: The SPS-Disposal sample location was approximately the same position as EBASCO 1987 sample SS-04.
GEO Insight INC.
CLIENT: Olympia Nominee Trust
PROJECT: 60 Olympia Avenue Woburn, Massachusetts
TITLE: PAH AREA - 2003 SAMPLING LOCATIONS
DESIGNED: KDT/LMR
DRAWN: KDT/LMR
CHECKED: KDT
APPROVED: MJW
FIGURE #: 3
SCALE: 1"=5'
DATE: 6/10/03
FILE: PAH Sampling
PROJECT #: 2491-001

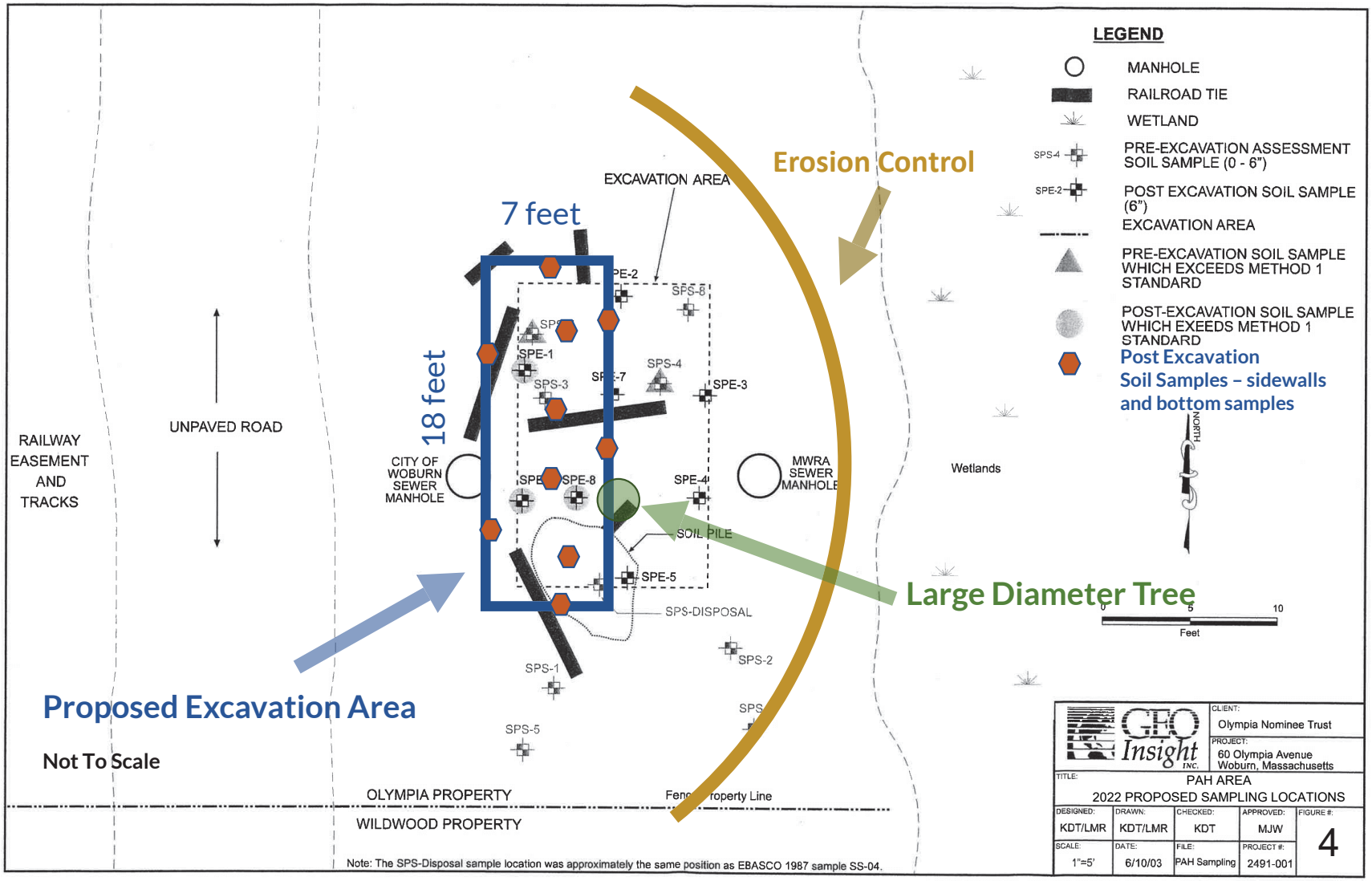


Figure 4 – PAH Area - 2022 Proposed Sampling Locations

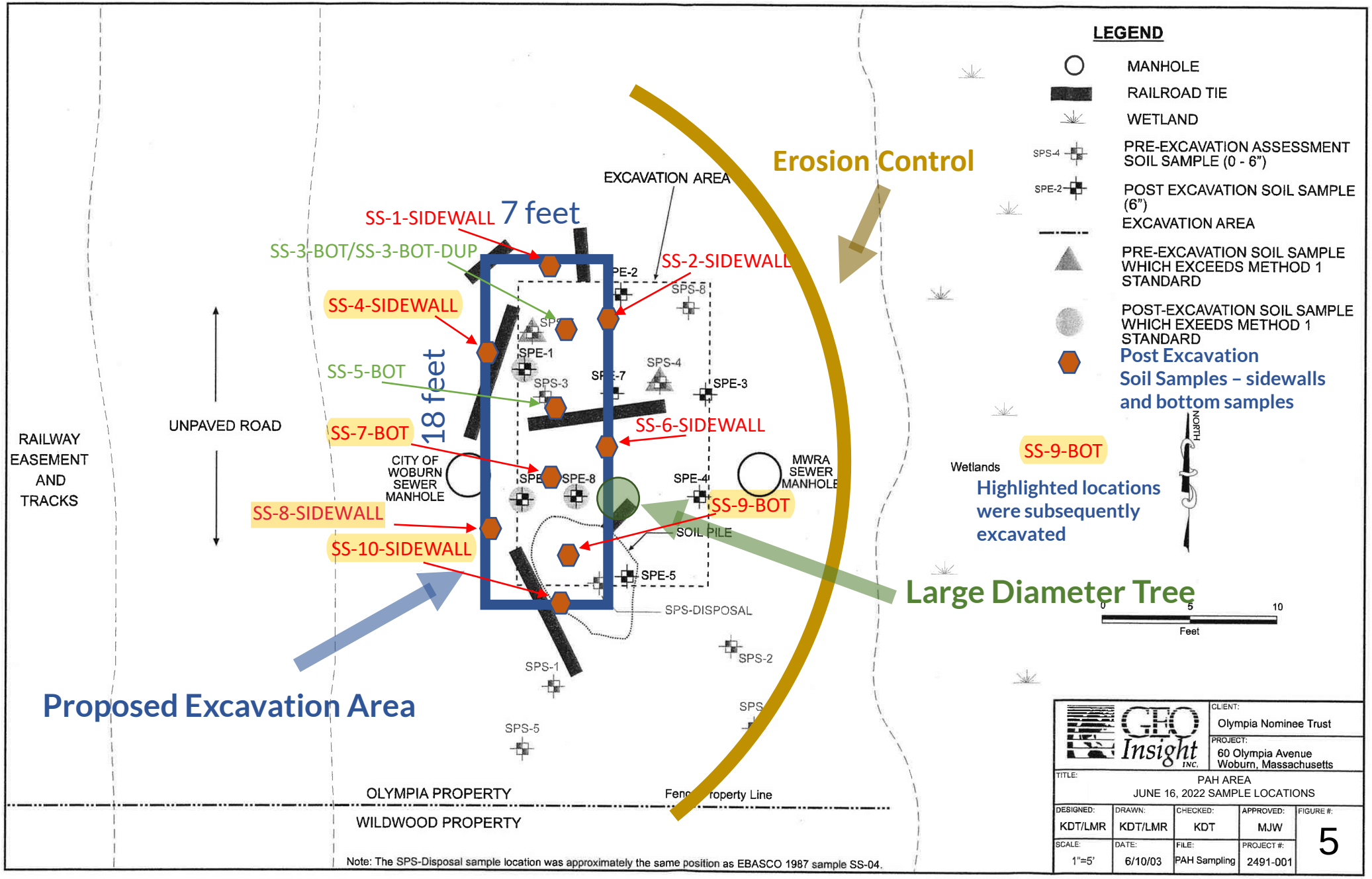


Figure 5 – PAH Area- June 6, 2022 Sa e L a ns

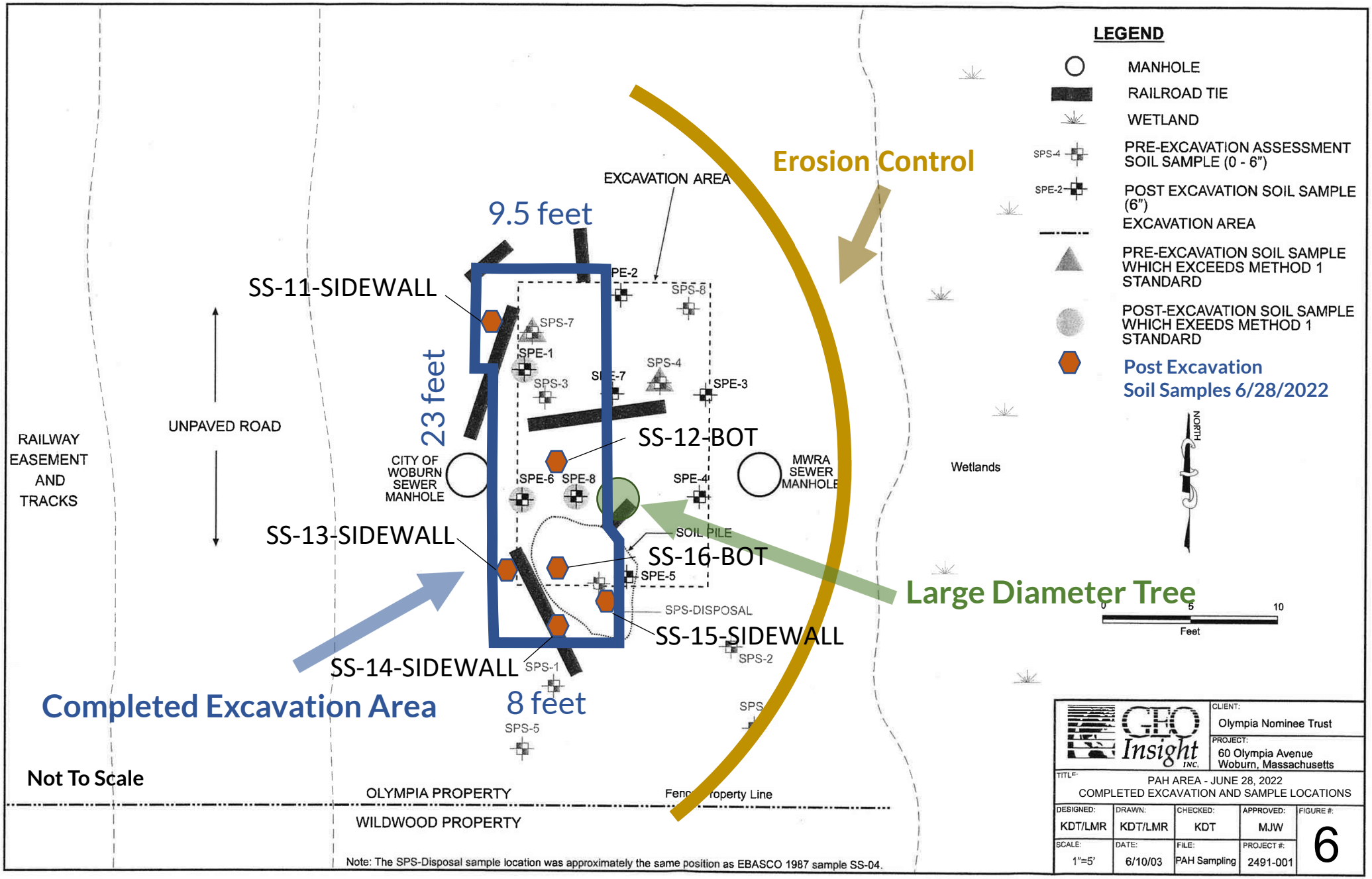


Figure 6 – PAH Area - June 28, 2022 Completed Excavation and Sample Locations

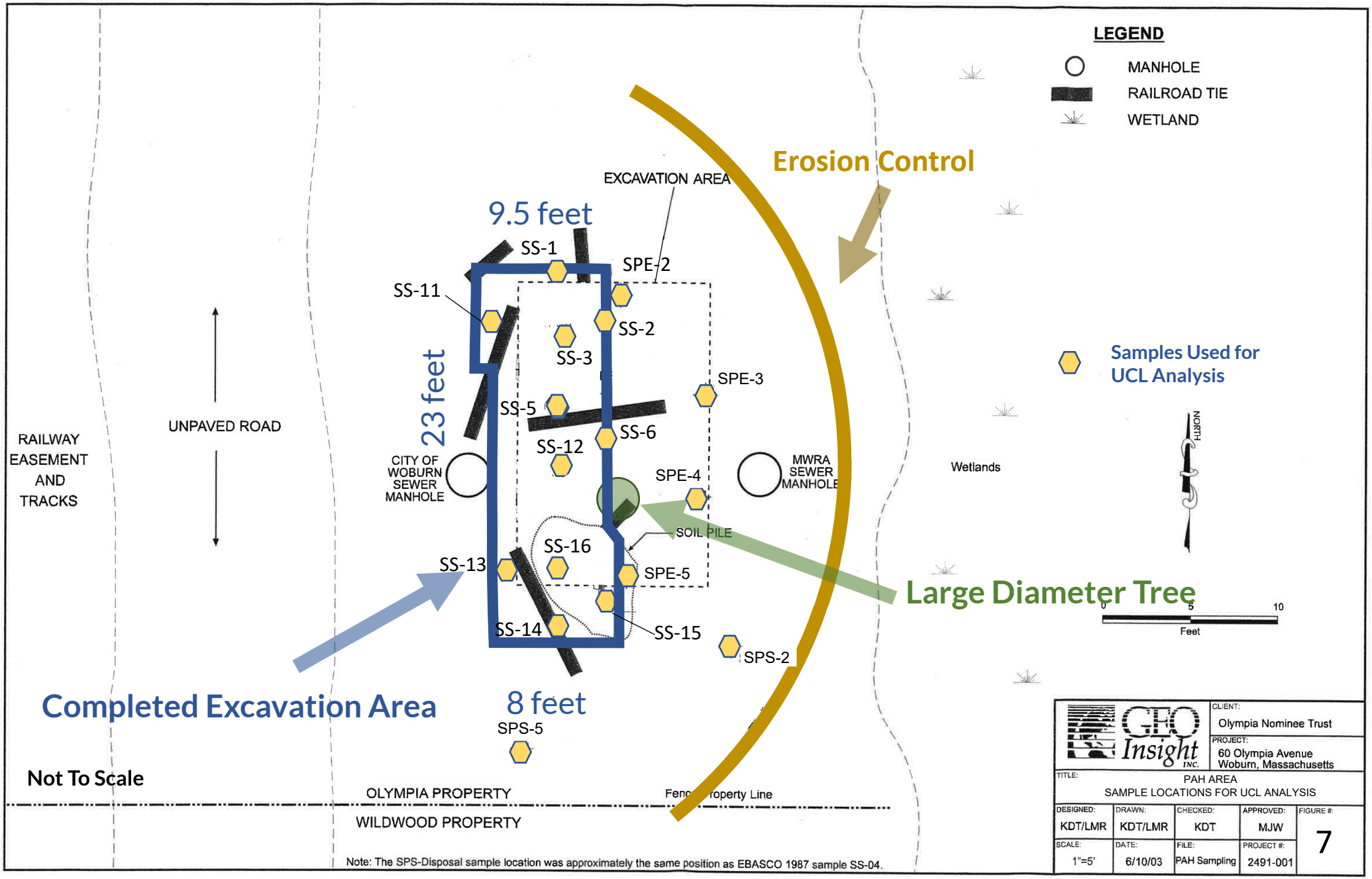
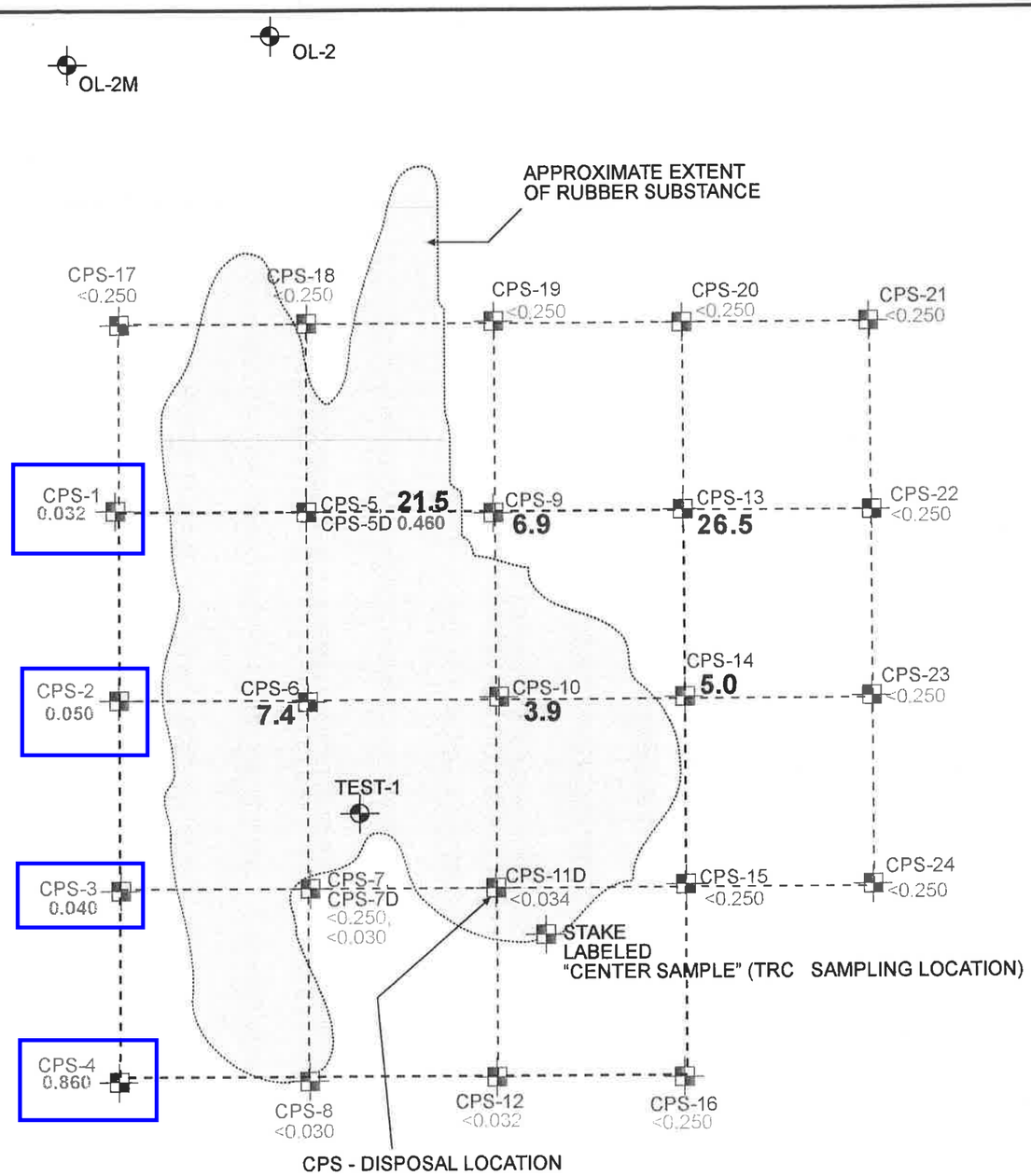


Figure 7 – PAH Area - Sample Locations for UCL Analysis



LEGEND

- MONITORING WELL
- EXTENT OF RUBBER SUBSTANCE
- SAMPLING GRID
- CPS-22 — PRE-EXCAVATION ASSESSMENT SOIL SAMPLE
- 0.460 — PCB CONCENTRATION BELOW ROD LEVEL (values in mg/kg)
- **6.9** — PCB CONCENTRATION ABOVE ROD LEVEL (values in mg/kg)
- SAMPLE LOCATION DATA USED FOR UCL ANALYSIS

NORTH

0 5 10
Feet

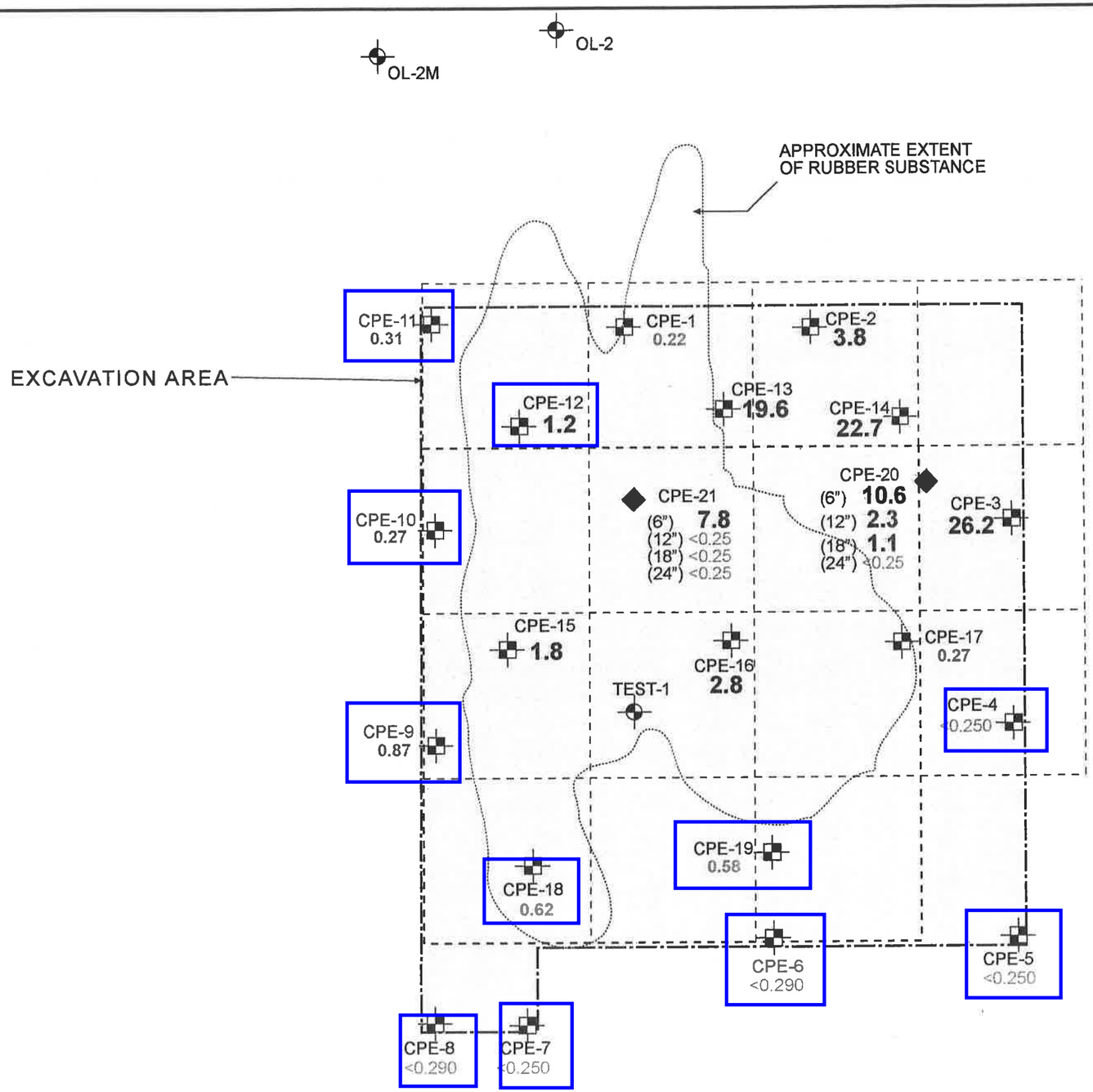
GEO Insight INC.

CLIENT: OLYMPIA NOMINEE TRUST

PROJECT: OLYMPIA PROPERTY WOBURN, MASSACHUSETTS

TITLE: PCB-IMPACTED AREA SAMPLING LOCATIONS- PRE-EXCAVATION ASSESSMENT SAMPLES - APRIL 2003

DESIGNED:	DRAWN:	CHECKED:	APPROVED:	FIGURE #:
KDT/LMR	KDT/LMR	KDT	MJW	8
SCALE: 1"=5'	DATE: 6/30/03	FILE: PCB Sampling Area	PROJECT #: 2491-001	



LEGEND

- MONITORING WELL
- EXTENT OF RUBBER SUBSTANCE
- SAMPLING GRID
- CPE-6 — POST EXCAVATION SOIL SAMPLE TAKEN JUNE 3, 2003
- SOIL BORING ADVANCED JUNE 11, 2003
- 0.460 — PCB CONCENTRATION BELOW ROD LEVEL (values in mg/kg)
- 6.9 — PCB CONCENTRATION ABOVE ROD LEVEL (values in mg/kg)
- EXCAVATION AREA - 6" BELOW GRADE
- SAMPLE LOCATION DATA USED FOR UCL ANALYSIS

NORTH

0 5 10
Feet

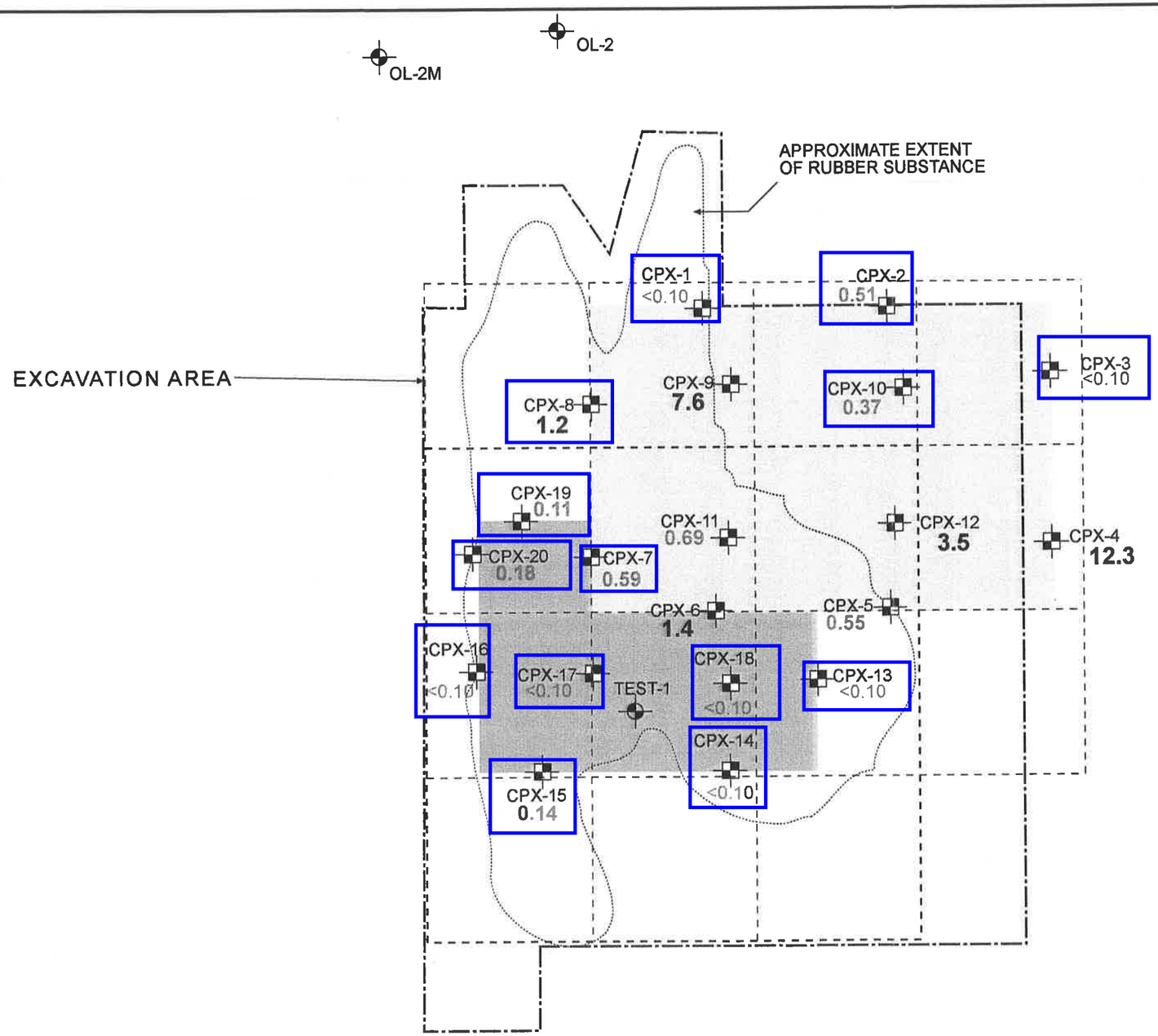
GHO Insight INC.

CLIENT: OLYMPIA NOMINEE TRUST

PROJECT: OLYMPIA PROPERTY WOBURN, MASSACHUSETTS

TITLE: PCB-IMPACTED AREA SAMPLING LOCATIONS- JUNE 3, 2003

DESIGNED:	DRAWN:	CHECKED:	APPROVED:	FIGURE #:
KDT/LMR	KDT/LMR	KDT	MJW	9
SCALE: 1"=5'	DATE: 3/12/04	FILE: PCB Sampling 2	PROJECT #: 2491-001	



LEGEND

- MONITORING WELL
- EXTENT OF RUBBER SUBSTANCE
- SAMPLING GRID
- CPX-20 — POST EXCAVATION SOIL SAMPLE TAKEN JUNE 25, 2003
- 0.37 — PCB CONCENTRATION BELOW ROD LEVEL (values in mg/kg)
- **7.6** — PCB CONCENTRATION ABOVE ROD LEVEL (values in mg/kg)
- EXCAVATION AREA - 6" BELOW GRADE
- POST EXCAVATION ASSESSMENT SOIL SAMPLE 2 1/2 FOOT BELOW GRADE
- POST EXCAVATION ASSESSMENT SOIL SAMPLE 1 FOOT BELOW GRADE
- SAMPLE LOCATION DATA USED FOR UCL ANALYSIS

NORTH

0 5 10
Feet

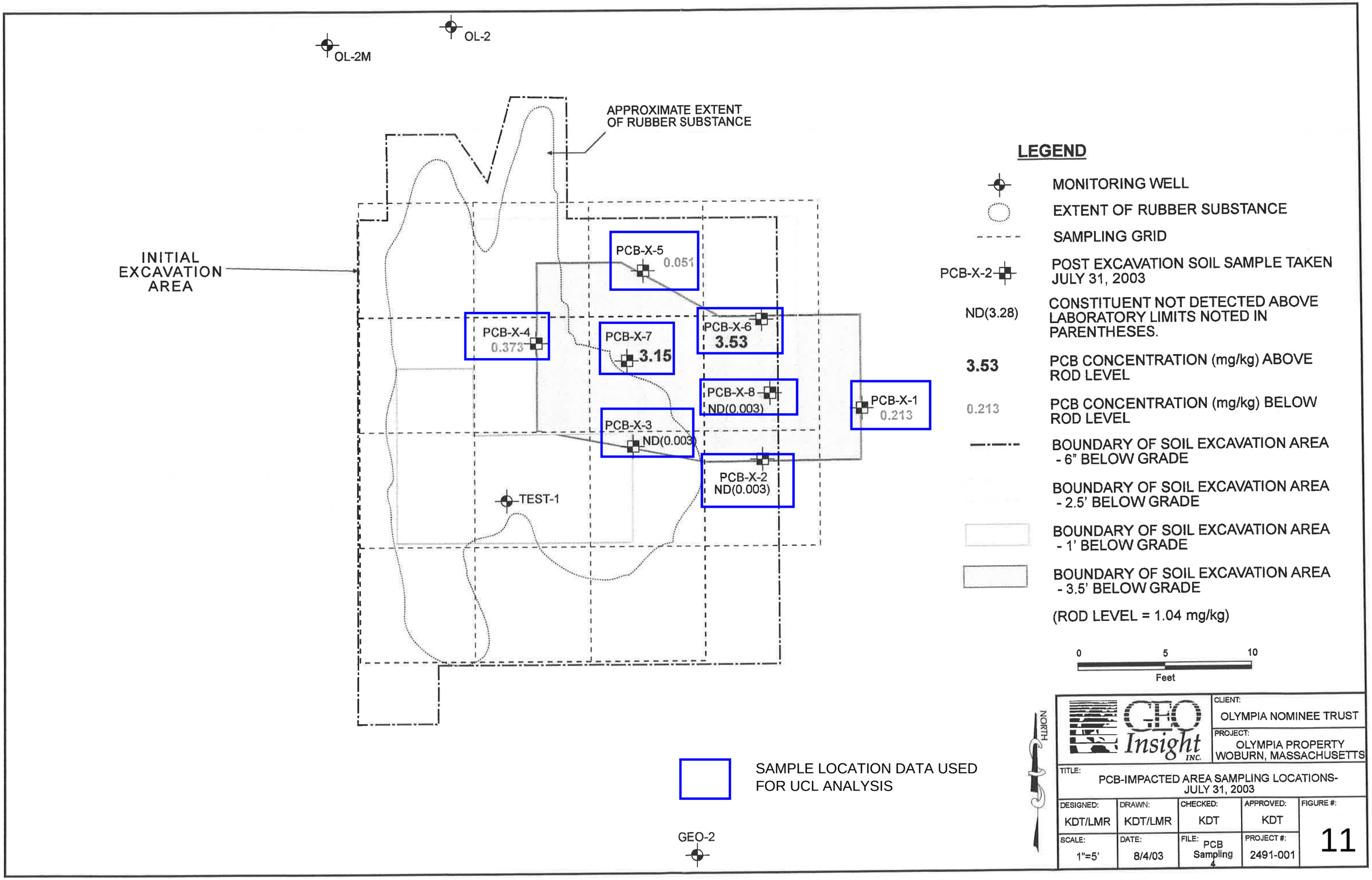
GEO Insight INC.

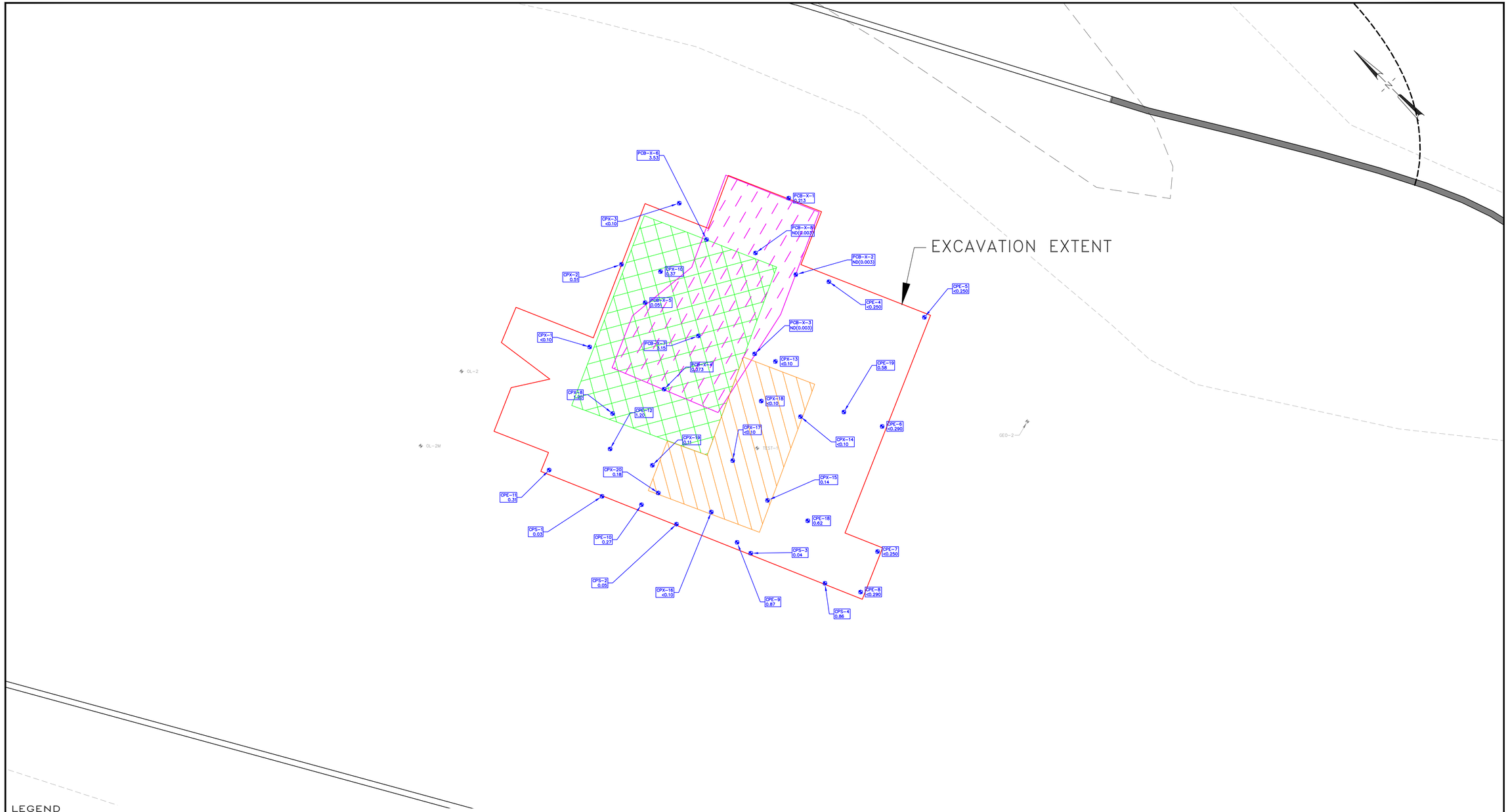
CLIENT: OLYMPIA NOMINEE TRUST

PROJECT: OLYMPIA PROPERTY WOBURN, MASSACHUSETTS

TITLE: PCB-IMPACTED AREA SAMPLING LOCATIONS- JUNE 25, 2003

DESIGNED:	DRAWN:	CHECKED:	APPROVED:	FIGURE #:
KDT/LMR	KDT/LMR	KDT	MJW	10
SCALE: 1"=5'	DATE: 6/30/03	FILE: PCB Sampling 3	PROJECT #: 2491-001	


OL-2
OL-2M
APPROXIMATE EXTENT OF RUBBER SUBSTANCE
INITIAL EXCAVATION AREA
PCB-X-5
0.051
PCB-X-4
0.373
PCB-X-7
3.15
PCB-X-6
3.53
PCB-X-8
ND(0.003)
PCB-X-1
0.213
PCB-X-3
ND(0.003)
PCB-X-2
ND(0.003)
TEST-1
LEGEND
MONITORING WELL
EXTENT OF RUBBER SUBSTANCE
SAMPLING GRID
PCB-X-2
POST EXCAVATION SOIL SAMPLE TAKEN JULY 31, 2003
ND(3.28)
CONSTITUENT NOT DETECTED ABOVE LABORATORY LIMITS NOTED IN PARENTHESES.
3.53
PCB CONCENTRATION (mg/kg) ABOVE ROD LEVEL
0.213
PCB CONCENTRATION (mg/kg) BELOW ROD LEVEL
BOUNDARY OF SOIL EXCAVATION AREA - 6" BELOW GRADE
BOUNDARY OF SOIL EXCAVATION AREA - 2.5' BELOW GRADE
BOUNDARY OF SOIL EXCAVATION AREA - 1' BELOW GRADE
BOUNDARY OF SOIL EXCAVATION AREA - 3.5' BELOW GRADE
(ROD LEVEL = 1.04 mg/kg)
0
5
10
Feet
SAMPLE LOCATION DATA USED FOR UCL ANALYSIS
GEO-2
NORTH
GEO Insight INC.
CLIENT:
OLYMPIA NOMINEE TRUST
PROJECT:
OLYMPIA PROPERTY
WOBURN, MASSACHUSETTS
TITLE:
PCB-IMPACTED AREA SAMPLING LOCATIONS-
JULY 31, 2003
DESIGNED: KDT/LMR
DRAWN: KDT/LMR
CHECKED: KDT
APPROVED: KDT
FIGURE #: 11
SCALE: 1"=5'
DATE: 8/4/03
FILE: PCB Sampling 4
PROJECT #: 2491-001



LEGEND

- MW-216S — REMEDIAL MONITORING WELL – GEOINSIGHT 2005
- CPE-9 0.87 — SAMPLE LOCATION DATA USED FOR UCL ANALYSIS
- S — S — SUBSURFACE SEWER LINES
- APPROXIMATE LOCATION OF WETLAND AREA
- 54 — GROUND SURFACE ELEVATION CONTOUR IN FEET
- SHEETPILE WALL – 20 FEET DEEP
- SHEETPILE WALL – 25 FEET DEEP
- APPROXIMATE LOCATION OF DEPRESSION OUTSIDE THE FENCE EAST OF THE TREATMENT CELL
- EXCAVATION EXTENT 6 INCHES BELOW GRADE
- EXCAVATION EXTENT 1 FOOT BELOW GRADE
- EXCAVATION EXTENT 2.5 FEET BELOW GRADE
- EXCAVATION EXTENT 3.5 FEET BELOW GRADE

NOTES:

1. BEARINGS ARE REFERENCED TO THE MASSACHUSETTS MAINLAND COORDINATE SYSTEM (NAD 27) HOLDING COASTAL GEODETIC SURVEY (CGS) MONUMENTS 414 AND 11095. THE COORDINATES WERE DERIVED UTILIZING THE GLOBAL POSITIONING SYSTEM (GPS) FAST STATIC SURVEY METHODS.

2. ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988, HOLDING CGS MONUMENT U33.

3. BASE MAPPING IS COMPILED FORM CITY OF WOBURN TOPOGRAPHIC MAPPING. FIELD TOPOGRAPHY WAS PERFORMED ON APRIL 22, 2002.

4. REFERENCE IS MADE TO THE FOLLOWING MAPS:

A. "RIGHT-OF-WAY AND TRACK MAP, BOSTON AND LOWELL R.R. CORP., OPERATED BY THE BOSTON AND MAINE R.R., STATION 548+31 TO STATION 601+11," SCALE 1" = 100', DATED JUNE 30, 1914. VALUATION 13.1/9.

B. "PLAN OF LAND, WOBURN, MASS., BELONGING TO DANIEL J. QUINN," SCALE 1" = 40', DATED FEBRUARY 1946, PREPARED BY GEO. W. OLSON, MAP ON FILE IN THE MIDDLESEX REGISTRY OF DEEDS AS PLAN #297.

C. "PLAN OF LAND IN WOBURN, MASS.," SCALE 1" = 60', DATED JUNE 6, 1963, PREPARED BY SCHOFIELD BROTHERS.

D. "SUBDIVISION PLAN OF LAND IN WOBURN, H. KINGMAN ABBOTT, SURVEYOR," SEPTEMBER 20, 1958, LAND COURT DOCUMENT 3507C.

E. "SUBDIVISION PLAN OF LAND IN WOBURN," HAYES ENGINEERING, INC., SURVEYORS, DATED JANUARY 14, 1983, LAND COURT DOCUMENT 3507D.

F. "PLAN OF LAND IN WOBURN," H. KINGMAN ABBOTT, SURVEYOR, JANUARY 8, 1962, NOVEMBER 1966, LAND COURT DOCUMENT 32181A.

CLIENT: OLYMPIA NOMINEE TRUST				GeoInsight
PROJECT: 60 OLYMPIA AVENUE				
TITLE: SAMPLE LOCATIONS FOR UCL ANALYSIS				
DESIGNED: ARP	DRAWN: AAZ	CHECKED: CAB	APPROVED: CAB	
SCALE: 1" = 10'	DATE: 07/25/22	FILE NO.: 2491D167	PROJECT NO.: 24911010	FIGURE NO.: 12

PLOT DATE: 9-15-22
FILE: P:\2491 - Jackpen-Woburn-MA\FIGURES\cad\24910167.dwg

TABLES

TABLE 1
PAH AREA - SUMMARY OF 2003 SOIL ANALYTICAL DATA
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Sample I.D.	SPS-1	SPS-2	SPS-3	SPS-4	SPS-5	SPS-6	SPS-7	SPS-8	SPE-1	SPE-2	SPE-3	SPE-4	SPE-5	SPE-6	SPE-7	SPE-7D	SPE-8
Sampling Date	04/10/03	04/10/03	04/10/03	04/10/03	04/10/03	04/10/03	04/10/03	04/10/03	06/04/03	06/04/03	06/04/03	06/04/03	06/04/03	06/04/03	06/04/03	06/04/03	06/04/03
Constituent (PAHs)																	
Acenaphthylene	ND(0.130)	ND(0.111)	ND(0.118)	**0.380**	ND(0.100)	ND(0.115)	**0.260**	ND(0.122)	**0.91**	ND(0.199)	ND(0.192)	ND(0.091)	ND(0.168)	**0.68**	ND(0.016)	ND(0.167)	ND(0.16)
Anthracene	ND(0.130)	ND(0.111)	ND(0.118)	**0.390**	ND(0.100)	ND(0.115)	**0.180**	ND(0.122)	**0.69**	ND(0.199)	ND(0.192)	ND(0.091)	ND(0.168)	**0.70**	ND(0.016)	ND(0.167)	ND(0.16)
Benzo(a)anthracene	ND(0.130)	**0.160**	**0.410**	**0.930**	**0.160**	ND(0.115)	**0.520**	ND(0.122)	**1.3**	ND(0.199)	ND(0.192)	ND(0.091)	ND(0.168)	**1.8**	ND(0.016)	ND(0.167)	**0.70**
Benzo(b) fluoranthene	ND(0.130)	**0.260**	**0.580**	**1.10**	**0.250**	ND(0.115)	**0.810**	ND(0.122)	**1.6**	ND(0.199)	ND(0.192)	ND(0.091)	**0.29**	**1.9**	ND(0.016)	ND(0.167)	**0.92**
Benzo(k) fluoranthene	ND(0.130)	**0.150**	**0.350**	**0.750**	ND(0.100)	ND(0.115)	**0.510**	ND(0.122)	**1**	ND(0.199)	ND(0.192)	ND(0.091)	ND(0.168)	**1.2**	ND(0.016)	ND(0.167)	**0.58**
Benzo(g,h,i)perylene	ND(0.130)	ND(0.111)	**0.210**	**0.490**	ND(0.100)	ND(0.115)	**0.280**	ND(0.122)	**0.78**	ND(0.199)	ND(0.192)	ND(0.091)	ND(0.168)	**0.71**	ND(0.016)	ND(0.167)	**0.34**
Benzo(a)pyrene	ND(0.130)	**0.200**	**0.420**	**1.00**	**0.170**	ND(0.115)	**0.510**	ND(0.122)	**1.5**	ND(0.199)	ND(0.192)	ND(0.091)	ND(0.168)	**1.5**	ND(0.016)	ND(0.167)	**0.72**
Chrysene	ND(0.130)	**0.210**	**0.460**	**1.00**	**0.190**	ND(0.115)	**0.610**	ND(0.122)	**1.5**	ND(0.199)	ND(0.192)	ND(0.091)	**0.26**	**1.9**	ND(0.016)	ND(0.167)	**0.82**
Fluoranthene	**0.220**	**0.370**	**0.770**	**1.70**	**0.310**	**0.250**	**1.00**	**0.280**	**2.2**	ND(0.199)	ND(0.192)	ND(0.091)	**0.37**	**3.5**	ND(0.016)	ND(0.167)	**1.1**
Indeno(1,2,3-cd)pyrene	ND(0.130)	ND(0.111)	**0.190**	**0.470**	ND(0.100)	ND(0.115)	**0.280**	ND(0.122)	**0.78**	ND(0.199)	ND(0.192)	ND(0.091)	ND(0.168)	**0.70**	ND(0.016)	ND(0.167)	**0.34**
Phenanthrene	ND(0.130)	ND(0.111)	ND(0.118)	**0.240**	ND(0.100)	ND(0.115)	**0.150**	ND(0.122)	ND(0.181)	ND(0.199)	ND(0.192)	ND(0.091)	ND(0.168)	**0.39**	ND(0.016)	ND(0.167)	ND(0.16)
Pyrene	**0.200**	**0.300**	**0.710**	**1.70**	**0.250**	**0.200**	**0.930**	**0.230**	**2.9**	ND(0.199)	ND(0.192)	ND(0.091)	**0.37**	**3.5**	ND(0.016)	ND(0.167)	**1.1**

Notes:
1. Values in micrograms per kilograms (mg/kg).
2. ND(x) = constituent not detected above practical quantitation limits noted in parentheses.
3. BOLD exceeds laboratory detection limits.

TABLE 2
2003 PRE-DISPOSAL SOIL CHARACTERIZATION
60 Olympia Avenue
Woburn, Massachusetts

Sample I.D. Sampling Date	CPS-Disposal 4/11/2003	SPS-Disposal 4/11/2003
Volatile Organic Compounds (VOCS)		
Acetone	ND(0.50)	ND(0.510)
Benzene	ND(0.013)	ND(0.013)
Chloroform	ND(0.013)	ND(0.013)
Chloromethane	ND(0.025)	ND(0.026)
1,1-Dichloroethane	ND(0.013)	ND(0.013)
1,1-Dichloroethene	ND(0.013)	ND(0.013)
1,2-Dichloroethane	ND(0.013)	ND(0.013)
cis 1,2-Dichloroethene	ND(0.013)	ND(0.013)
Ethylbenzene	ND(0.013)	ND(0.013)
Methylene chloride	ND(0.13)	ND(0.13)
MtBE	ND(0.013)	ND(0.013)
4-Methyl-2-pentanone	ND(0.13)	ND(0.13)
Tetrachloroethene	ND(0.013)	ND(0.013)
Toluene	ND(0.013)	ND(0.013)
Trichloroethene	ND(0.013)	ND(0.013)
1,1,1-Trichloroethane	ND(0.013)	ND(0.013)
1,1,2-Tricholor-1,2,2-Trifluorethane	ND(0.013)	ND(0.013)
Vinyl Chloride	ND(0.025)	ND(0.026)
Xylenes	ND(0.013)	ND(0.013)
Total Petroleum Hydrocarbons (TPH)		
TPH	**280**	**75**
Polychlorinated Biphenyls (PCBs)		
Total PCBs	ND(0.086)	ND(0.095)
Total Metals		
Arsenic	ND(5.9)	ND(6.1)
Cadmium	ND(0.59)	ND(0.61)
Chromium	ND(12)	**660**
Lead	ND(12)	**37**
Mercury	ND(0.041)	**0.14**
General Chemistry		
pH (SU)	6.0	6.6
Ignitability (as Flashpoint)	>165	>165
Reactive Cyanide	ND(50)	ND(50)
Reactive Sulfide	ND(100)	ND(100)

Notes:

1. All values in milligrams per kilogram (mg/kg), except where noted.
2. ND(x) = constituent not detected above prqactical quanititation limits noted in parentheses.
3. BOLD exceeds laboratory detection limits.

TABLE 3
2022 PRE-DISPOSAL SOIL CHARACTERIZATION
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Sample I.D.	SS-03	Comp-SS
Sampling Date	05/20/22	05/20/22
Volatile Organic Compounds (VOCS)		
1,2,4-Trimethylbenzene	ND(0.18)	--
1,3,5-Trimethylbenzene	ND(0.18)	--
1,4-dioxane	ND(7.4)	--
Benzene	ND(0.046)	--
Dibromomethane	ND(0.18)	--
Dichlorodifluoromethane	ND(0.92)	--
Ehtylbenzene	ND(0.092)	--
Methyl-ehtyl-ketone	ND(0.92)	--
Methyl tert butyl ether	ND(0.18)	--
Naphthalene	ND(0.37)	--
n-Butylbenzene	ND(0.092)	--
n-Propylbenzene	ND(0.092)	--
sec-Butylbenze	ND(0.092)	--
tert-Butylbenzene	ND(0.18)	--
Tertiary-Amyl-Methyl-Ether	ND(0.18)	--
Toluene	ND(0.092)	--
Xylenes, total	ND(0.092)	--
Semivolatile Organic Compunds (SVOCs)		
Acenaphthene	--	ND(0.16)
Acenaphthylene	--	**0.17**
Anthracene	--	ND(0.12)
Benzo [a] anthracene	--	**0.47**
Benzo [b] fluoranthene	--	**0.64**
Benzo [k] fluoranthene	--	**0.16**
Benzo [g,h,i] perylene	--	**0.23**
Benzo [a] pyrene	--	**0.37**
Bis-(2-ethylhexyl)phthalate	--	ND(0.2)
Chrysene	--	**0.44**
Dibenzo [a,h] anthracene	--	ND(0.084)
Dibenzofuran	--	ND(0.2)
Fluoranthene	--	**0.89**
Fluorene	--	ND(0.2)
Indeno [1,2,3-cd] pyrene	--	**0.29**
2-Methylnaphthalene	--	ND(0.084)
Naphthalene	--	ND(0.2)
Phenanthrene	--	**0.12**
Pyrene	--	**0.84**
Butylbenzyl Phthalate	--	ND(0.2)
2-Chlorophenol	--	ND(0.084)
1,4-Dichlorobenzene	--	ND(0.084)
3,3'-Dichlorobenzidine	--	ND(0.2)
2,4-Dimethylphenol	--	ND(0.084)
Diethyl Phthalate	--	ND(0.2)
Dimethyl Phthalate	--	ND(0.084)
2,4-Dinitrotoluene	--	ND(0.084)
Di-N-Buty Phthalate	--	ND(0.2)
Di-N-Octyl Phthalate	--	ND(0.2)
Hexachlorobenzene	--	ND(0.084)
Phenol	--	ND(0.2)
2,4,5-Trichlorophenol	--	ND(0.2)
1,2,4-Trichlorobenzene	--	ND(0.2)

TABLE 3
2022 PRE-DISPOSAL SOIL CHARACTERIZATION
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Total Petroleum Hydrocarbons (TPH)		
TPH	--	**3,870**
Polychlorinated Biphenyls (PCBs)		
Arochlor 1254	--	ND(0.039)
Arochlor 1260	--	ND(0.039)
Total Metals		
Arsenic	--	**12.9**
Barium	--	**878**
Cadmium	--	ND(0.477)
Chromium (total)	--	**558**
Lead	--	**36.1**
Mercury	--	**0.233**
Selenium	--	ND(2.38)
Silver	--	ND(0.477)
General Chemistry		
pH (SU)	--	7.4
Ignitability (°F)	--	NI
Reactive Cyanide (mg/Kg): USEPA 7.3.3.2	--	ND(10)
Reactive Sulfide (mg/Kg): USEPA 7.3.4.2	--	ND(10)
Toxicity Characteristic Leaching Procedure (TCLP)		
Chromium (total)	--	ND (0.2)

Notes:
1. Values in micrograms per kilograms (mg/kg).
2. ND(x) = constituent not detected above practical quantitation limits noted in parentheses.
3. BOLD exceeds laboratory detection limits.

TABLE 4 - PAH AREA - SUMMARY OF 6/16/2022 POST-EXCAVATION SOIL SAMPLE DATA
PAH AREA - 60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Sample I.D.	SS-1-SIDEWALL	SS-2-SIDEWALL	SS-3-BOT	SS-3-BOT-DUP	SS-4-SIDEWALL	SS-5-BOT	SS-6-SIDEWALL	SS-7-BOT	SS-8-SIDEWALL	SS-9-BOT	SS-10-SIDEWALL
Sampling Date	06/16/22	06/16/22	06/16/22	06/16/22	06/16/22	06/16/22	06/16/22	06/16/22	06/16/22	06/16/22	06/16/22
Constituent (PAHs)											
Acenaphthene	ND(0.160)	ND(0.160)	ND(0.160)	ND(0.160)	ND(0.140)	ND(0.150)	ND(0.160)	ND(0.170)	ND(0.150)	ND(0.180)	ND(0.160)
Acenaphthylene	ND(0.160)	ND(0.160)	ND(0.160)	ND(0.160)	**0.350**	ND(0.150)	ND(0.160)	ND(0.170)	**0.160**	ND(0.180)	ND(0.160)
Anthracene	ND(0.120)	ND(0.120)	ND(0.120)	ND(0.120)	**0.260**	ND(0.110)	ND(0.120)	**0.180**	**0.170**	**0.320**	**0.160**
Benzo(a)anthracene	**0.270**	**0.150**	ND(0.120)	ND(0.120)	**0.460**	ND(0.110)	**0.120**	**0.570**	**0.440**	**0.930**	**0.530**
Benzo(b)fluoranthene	**0.390**	**0.270**	ND(0.120)	ND(0.120)	**0.750**	ND(0.110)	**0.190**	**1.000**	**0.580**	**1.400**	**0.850**
Benzo(k)fluoranthene	**0.140**	ND(0.120)	ND(0.120)	ND(0.120)	**0.280**	ND(0.110)	ND(0.120)	**0.260**	**0.200**	**0.460**	**0.210**
Benzo(g,h,i)perylene	ND(0.160)	ND(0.160)	ND(0.160)	ND(0.160)	**0.290**	ND(0.150)	ND(0.160)	**0.490**	**0.270**	**0.730**	**0.360**
Benzo(a)pyrene	**0.280**	**0.170**	ND(0.160)	ND(0.160)	**0.500**	ND(0.150)	ND(0.160)	**0.760**	**0.470**	**1.100**	**0.630**
Chrysene	**0.280**	**0.160**	ND(0.120)	ND(0.120)	**0.500**	ND(0.110)	**0.130**	**0.630**	**0.400**	**0.960**	**0.530**
Dibenzo(a,h)anthracene	ND(0.082)	ND(0.084)	ND(0.082)	ND(0.081)	**0.097**	ND(0.079)	ND(0.086)	**0.140**	ND(0.080)	**0.160**	ND(0.085)
Fluoranthene	**0.510**	**0.310**	ND(0.120)	ND(0.120)	**0.870**	ND(0.110)	**0.250**	**0.960**	**0.840**	**1.70**	**1.00**
Fluorene	ND(0.190)	ND(0.200)	ND(0.200)	ND(0.190)	ND(0.180)	ND(0.190)	ND(0.210)	ND(0.220)	ND(0.190)	**0.220**	ND(0.200)
Indeno(1,2,3-cd)pyrene	**0.200**	ND(0.160)	ND(0.160)	ND(0.160)	**0.400**	ND(0.150)	ND(0.160)	**0.550**	**0.340**	**0.840**	**0.420**
2-Methylnaphthalene	ND(0.082)	ND(0.084)	ND(0.082)	ND(0.081)	ND(0.075)	ND(0.079)	ND(0.086)	**0.120**	ND(0.080)	**0.095**	ND(0.085)
Naphthalene	ND(0.190)	ND(0.200)	ND(0.200)	ND(0.190)	ND(0.180)	ND(0.190)	ND(0.210)	**2.70**	**0.930**	**1.50**	**2.40**
Phenanthrene	ND(0.120)	ND(0.120)	ND(0.120)	ND(0.120)	ND(0.110)	ND(0.110)	ND(0.120)	**0.590**	**0.340**	**1.40**	**0.460**
Pyrene	**0.430**	**0.250**	ND(0.120)	ND(0.120)	**0.880**	ND(0.110)	**0.210**	**0.770**	**0.700**	**1.40**	**0.830**

Notes:
1. Values in micrograms per kilograms (mg/kg).
2. ND(x) = constituent not detected above practical quantitation limits noted in parentheses.
3. Grey shading indicates sample removed during subsequent excavation on June 28, 2022.
4. BOLD exceeds laboratory detection limits.

TABLE 5
PAH AREA - JUNE 16, 2022 - BENZO(A)PYRENE EQUIVALENT CONCENTRATIONS
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Constituent (cPAHs)	Units	Relative Potency Factor	SS-1-SIDEWALL 06/16/2022	Qualifier	BaP Conversion	SS-2-SIDEWALL 6/16/2022	Qualifier	BaP Conversion	SS-3-BOT 6/16/2022	Qualifier	BaP Conversion	SS-4-SIDEWALL 6/16/2022	Qualifier	BaP Conversion	SS-5-BOT 6/16/2022	Qualifier	BaP Conversion	SS-6-SIDEWALL 6/16/2022	Qualifier	BaP Conversion
Benzo(a)anthracene	mg/kg	0.1	**0.270**		0.027	**0.150**		0.015	0.120	U		**0.460**		0.046	0.110	U		**0.120**		0.012
Benzo(b) fluoranthene	mg/kg	0.1	**0.390**		0.039	**0.270**		0.027	0.120	U		**0.750**		0.075	0.110	U		**0.190**		0.019
Benzo(k) fluoranthene	mg/kg	0.01	**0.140**		0.001	0.120	U		0.120	U		**0.280**		0.003	0.110	U		0.120	U	
Benzo(a)pyrene	mg/kg	1	**0.280**		0.280	**0.170**		0.170	0.160	U		**0.500**		0.500	0.150	U		0.160	U	
Chrysene	mg/kg	0.001	**0.280**		0.000	**0.160**		0.000	0.120	U		**0.500**		0.001	0.110	U		**0.130**		0.0001
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	**0.200**		0.020	0.160	U		0.160	U		**0.400**		0.040	0.150	U		0.160	U	
Dibenzo(a,h)anthracene	mg/kg	1	0.082	U		0.084	U		0.081	U		**0.097**		0.097	0.079	U		0.086	U	
BaP Equivalent Concentration	mg/kg				0.37			0.212		U	0.160			0.761		U	0.150			0.031

Notes:
1. cPAHS = Carcinogenic Polycyclic Aromatic Hydrocarbons.
2. mg/kg = milligrams per kilogram.
3. Bold values indicate detections.
4. BaP = Benzo(a)pyrene.
5. The BaP Equivalent Concentration is calculated by summing the detected concentrations in each sample multiplied by their respective Relative Potency Factors.
6. Relative Potency Factors from EPA's 1993 *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons.*

TABLE 5
PAH AREA - JUNE 16, 2022 - BENZO(A)PYRENE EQUIVALENT CONCENTRATIONS
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Constituent (cPAHs)	Units	Relative Potency Factor	SS-7-BOT 6/16/22	Qualifier	BaP Conversion	SS-8-SIDEWALL 6/16/2022	Qualifier	BaP Conversion	SS-9-BOT 6/16/2022	Qualifier	BaP Conversion	SS-10-SIDEWALL 6/16/22	Qualifier	BaP Conversion
Benzo(a)anthracene	mg/kg	0.1	**0.570**		0.057	**0.44**		0.044	**0.93**		0.093	**0.53**		0.053
Benzo(b) fluoranthene	mg/kg	0.1	**1.000**		0.100	**0.58**		0.058	**1.40**		0.140	**0.85**		0.085
Benzo(k) fluoranthene	mg/kg	0.01	**0.260**		0.003	**0.20**		0.002	**0.46**		0.005	**0.21**		0.002
Benzo(a)pyrene	mg/kg	1	**0.760**		0.760	**0.47**		0.470	**1.1**		1.100	**0.63**		0.630
Chrysene	mg/kg	0.001	**0.630**		0.001	**0.40**		0.000	**0.96**		0.001	**0.53**		0.001
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	**0.550**		0.055	**0.34**		0.034	**0.840**		0.084	**0.42**		0.042
Dibenzo(a,h)anthracene	mg/kg	1	**0.140**		0.140	0.100	U		**0.160**		0.160	0.085	U	
BaP Equivalent Concentration	mg/kg				1.115		U	0.608			1.583		U	0.813

Notes:
1. cPAHS = Carcinogenic Polycyclic Aromatic Hydrocarbons
2. mg/kg = milligrams per kilogram.
3. Bold values indicate detections.
4. BaP = Benzo(a)pyrene.
5. The BaP Equivalent Concentration is calculated by summi detected concentrations in each sample multiplied by thei respective Relative Potency Factors.
6. Relative Potency Factors from EPA's 1993 *Provisional Guidance for Quantitative Risk Assessment of Pol Aromatic Hydrocarbons.*

TABLE 6
PAH AREA - SUMMARY OF JUNE 28, 2022 POST-EXCAVATION SOIL SAMPLE DATA
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Sample I.D. / Sampling Date / Constituent (PAHs)	SS-11-SIDEWALL	SS-12-BOT	SS-13-SIDEWALL	SS-14-SIDEWALL	SS-15-SIDEWALL	SS-16-BOT
Sampling Date	06/28/22	06/28/22	06/28/22	06/28/22	06/28/22	06/28/22
Acenaphthene	ND(0.140)	ND(0.190)	ND(0.150)	ND(0.140)	ND(0.150)	ND(0.630)
Acenaphthylene	**0.280**	ND(0.190)	ND(0.150)	ND(0.140)	ND(0.150)	ND(0.630)
Anthracene	**0.220**	ND(0.140)	ND(0.110)	ND(0.110)	ND(0.110)	ND(0.470)
Benzo(a)anthracene	**0.410**	ND(0.140)	ND(0.110)	ND(0.110)	ND(0.110)	ND(0.470)
Benzo(b)fluoranthene	**0.630**	ND(0.140)	ND(0.110)	ND(0.110)	ND(0.110)	ND(0.470)
Benzo(k)fluoranthene	**0.240**	ND(0.140)	ND(0.110)	ND(0.110)	ND(0.110)	ND(0.470)
Benzo(g,h,i)perylene	**0.250**	ND(0.190)	ND(0.150)	ND(0.140)	ND(0.150)	ND(0.630)
Benzo(a)pyrene	**0.420**	ND(0.190)	ND(0.150)	ND(0.140)	ND(0.150)	ND(0.630)
Chrysene	**0.430**	ND(0.140)	ND(0.110)	ND(0.110)	ND(0.110)	ND(0.470)
Dibenzo(a,h)anthracene	**0.079**	ND(0.100)	ND(0.079)	ND(0.075)	ND(0.078)	ND(0.330)
Fluoranthene	**0.800**	ND(0.140)	ND(0.110)	ND(0.110)	ND(0.110)	ND(0.470)
Fluorene	ND(0.180)	ND(0.240)	ND(0.190)	ND(0.180)	ND(0.190)	ND(0.790)
Indeno(1,2,3-cd)pyrene	**0.340**	ND(0.190)	ND(0.150)	ND(0.140)	ND(0.150)	ND(0.630)
2-Methylnaphthalene	ND(0.074)	ND(0.100)	ND(0.079)	ND(0.075)	ND(0.078)	ND(0.330)
Naphthalene	ND(0.180)	ND(0.240)	ND(0.190)	ND(0.180)	ND(0.190)	ND(0.790)
Phenanthrene	ND(0.100)	ND(0.140)	ND(0.110)	ND(0.110)	ND(0.110)	ND(0.470)
Pyrene	**0.740**	ND(0.140)	ND(0.110)	ND(0.110)	ND(0.110)	ND(0.470)

Notes:
1. Values in milligrams per kilograms (mg/kg).
2. ND(x) = constituent not detected above practical quantitation limits noted in parentheses.
3. Bold exceeds laboratory detection limits.

TABLE 7
SUMMARY OF DISPOSAL DOCUMENTATION
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

SOLIDS - PAH AREA							
Date	**Material**	**Tracking/Manifest Number**	**Receiving Facility**	**Town, State**	**Amount Indicated on Shipping Documentation**	**Estimated Weight (tons)**	**Estimated Volume (cubic yards)**
6/25/2003	Soil	MI 9070512	US Liquids of Detroit, Inc.	Detroit, MI	5 Waste Packs (9,000 pounds)	4.5	3.00
8/17/2022	Soil	249101	Clean Earth/ESMI of New Hampshire	Loudon, NH	9.72 tons	9.72	6.48
					TOTAL:	**14.22**	**9.48**

SOLIDS - PCB AREA							
Date	**Material**	**Tracking/Manifest Number**	**Receiving Facility**	**Town, State**	**Amount Indicated on Shipping Documentation**	**Estimated Weight (tons)**	**Estimated Volume (cubic yards)**
6/25/2003	Rubber-like material	MI 9070512	US Liquids of Detroit, Inc.	Detroit, MI	4 Drums (1,600 pounds)	0.8	0.53
6/26/2003	Soil	MI 9070513	US Liquids of Detroit, Inc.	Detroit, MI	20 Waste Packs (40,000 pounds)	20	13.33
8/28/2003	Soil	MI 9070673	US Liquids of Detroit, Inc.	Detroit, MI	15 Waste Packs (30,000 pounds)	15	10.00
8/28/2003	Soil	MI 9070672	US Liquids of Detroit, Inc.	Detroit, MI	16 Waste Packs (32,000 pounds)	16	10.67
					TOTAL:	**51.8**	**34.53**

LIQUIDS - PCB AREA							
Date	**Material**	**Tracking/Manifest Number**	**Receiving Facility**	**Town, State**	**Amount Indicated on Shipping Documentation**	**Estimated Weight (pounds)**	**Estimated Volume (gallons)**
6/25/2003	Liquids	MI 9070512	US Liquids of Detroit, Inc.	Detroit, MI	2 Drums (110 gallons)	800	110
8/28/2003	Liquids	MI 9070673	US Liquids of Detroit, Inc.	Detroit, MI	2 Drums (800 pounds)	800	110
					TOTAL:	**1,600**	**220**

Notes:
1. Volume of solids estimated using a density of 1.5 tons per cubic yard.
2. Some of the waste packs containing soil removed in 2003 also contained personal protective equipment, plastic sheeting, sampling equipment, and filter fabric.
3. Drums containing liquids were assumed to weigh 400 pounds per drum.

TABLE 8
PAH AREA - SUMMARY OF DATA USED FOR UCL EVALUATION
60 OLYMPIA AVENUE,
WOBURN, MASSACHUSETTS

Constituent (cPAHs)	Units	Relative Potency Factor	SPE-2 6/4/2003	Qualifier	BaP Conversion	SPE-3 6/4/2003	Qualifier	BaP Conversion	SPE-4 6/4/2003	Qualifier	BaP Conversion	SPE-5 6/4/2003	Qualifier	BaP Conversion	SPS-2 4/10/2013	Qualifier	BaP Conversion	SPS-5 4/10/2013	Qualifier	BaP Conversion
Benzo(a)anthracene	mg/kg	0.1	0.0995	U		0.096	U		0.0455	U		0.084	U		**0.16**		0.016	**0.16**		0.016
Benzo(b) fluoranthene	mg/kg	0.1	0.0995	U		0.096	U		0.0455	U		**0.29**		0.029	**0.26**		0.026	**0.25**		0.025
Benzo(k) fluoranthene	mg/kg	0.01	0.0995	U		0.096	U		0.0455	U		0.084	U		**0.15**		0.002	0.10	U	
Benzo(a)pyrene	mg/kg	1	0.0995	U		0.096	U		0.0455	U		0.084	U		**0.20**		0.200	**0.17**		0.170
Chrysene	mg/kg	0.001	0.0995	U		0.096	U		0.0455	U		**0.26**		0.0003	**0.37**		0.000	**0.19**		0.000
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.0995	U		0.096	U		0.0455	U		0.084	U		0.111	U		0.10	U	
Dibenzo(a,h)anthracene	mg/kg	1	0.0996	U		0.096	U		0.0455	U		0.084	U		0.111	U		0.10	U	
BaP Equivalent Concentration	mg/kg			U	0.0995		U	0.096		U	0.0455			0.029			0.244			0.211

Notes:
1. 95% UCL = 95% Upper Confidence Limit as calculated by EPA's ProUCL Software Version 5.1 (2016)
2. cPAHs = Carcinogenic Polycyclic Aromatic Hydrocarbons.
3. mg/kg = milligrams per kilogram.
4. Bold values indicate detections.
5. BaP = Benzo(a)pyrene.
6. The BaP Equivalent Concentration is calculated by summing the detected concentrations in each sample multiplied by their respective Relative Potency Factors
7. Relative Potency Factors from EPA's 1993 Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons

TABLE 8
PAH AREA - SUMMARY OF DATA USED FOR UCL EVALUATION
60 OLYMPIA AVENUE,
WOBURN, MASSACHUSETTS

Constituent (cPAHs)	Units	Relative Potency Factor	SS-1-SIDEWALL 06/16/2022	Qualifier	BaP Conversion	SS-2-SIDEWALL 6/16/2022	Qualifier	BaP Conversion	SS-3-BOT 6/16/2022	Qualifier	BaP Conversion	SS-5-BOT 6/16/2022	Qualifier	BaP Conversion	SS-6-SIDEWALL 6/16/2022	Qualifier	BaP Conversion	SS-11-SIDEWALL 6/28/2022	Qualifier	BaP Conversion
Benzo(a)anthracene	mg/kg	0.1	**0.270**		0.027	**0.150**		0.015	0.120	U		0.110	U		**0.120**		0.012	**0.410**		0.041
Benzo(b) fluoranthene	mg/kg	0.1	**0.390**		0.039	**0.270**		0.027	0.120	U		0.110	U		**0.190**		0.019	**0.630**		0.063
Benzo(k) fluoranthene	mg/kg	0.01	**0.140**		0.001	0.120	U		0.120	U		0.110	U		0.120	U		**0.240**		0.002
Benzo(a)pyrene	mg/kg	1	**0.280**		0.280	**0.170**		0.170	0.160	U		0.150	U		0.160	U		**0.420**		0.420
Chrysene	mg/kg	0.001	**0.280**		0.000	**0.160**		0.000	0.120	U		0.110	U		**0.130**		0.0001	**0.430**		0.000
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	**0.200**		0.020	0.160	U		0.160	U		0.150	U		0.160	U		**0.340**		0.034
Dibenzo(a,h)anthracene	mg/kg	1	0.082	U		0.084	U		0.081	U		0.079	U		0.086	U		**0.079**		0.079
BaP Equivalent Concentration	mg/kg				0.37			0.212		U	0.160		U	0.150			0.031			0.640

Notes:
1. 95% UCL = 95% Upper Confidence Limit as calculated by EPA's ProUCL Software Version 5.1 (2016)
2. cPAHs = Carcinogenic Polycyclic Aromatic Hydrocarbons.
3. mg/kg = milligrams per kilogram.
4. Bold values indicate detections.
5. BaP = Benzo(a)pyrene.
6. The BaP Equivalent Concentration is calculated by summing the detected concentrations in each sample multiplied by their respective Relative Potency Factors
7. Relative Potency Factors from EPA's 1993 Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons

TABLE 8
PAH AREA - SUMMARY OF DATA USED FOR UCL EVALUATION
60 OLYMPIA AVENUE,
WOBURN, MASSACHUSETTS

Constituent (cPAHs)	Units	Relative Potency Factor	SS-12-BOT 6/28/2022	Qualifier	BaP Conversion	SS-13-SIDEWALL 6/28/2022	Qualifier	BaP Conversion	SS-14-SIDEWALL 6/28/22	Qualifier	BaP Conversion	SS-15-SIDEWALL 6/28/2022	Qualifier	BaP Conversion	SS-16-BOT 6/28/2022	Qualifier	BaP Conversion		
Benzo(a)anthracene	mg/kg	0.1	0.140	U		0.110	U		0.110	U		0.110	U		0.470	U			
Benzo(b) fluoranthene	mg/kg	0.1	0.140	U		0.110	U		0.110	U		0.110	U		0.470	U			
Benzo(k) fluoranthene	mg/kg	0.01	0.140	U		0.110	U		0.110	U		0.110	U		0.470	U			
Benzo(a)pyrene	mg/kg	1	0.190	U		0.150	U		0.140	U		0.150	U		0.630	U			
Chrysene	mg/kg	0.001	0.140	U		0.110	U		0.110	U		0.110	U		0.470	U			
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.190	U		0.150	U		0.140	U		0.150	U		0.630	U			
Dibenzo(a,h)anthracene	mg/kg	1	0.100	U		0.079	U		0.075	U		0.078	U		0.330	U			
BaP Equivalent Concentration	mg/kg			U	0.190			0.150		U	0.140		U	0.150		U	0.630	0.189	95% UCL

Notes:
1. 95% UCL = 95% Upper Confidence Limit as calculated by EPA's ProUCL Software Version 5.1 (2016)
2. cPAHs = Carcinogenic Polycyclic Aromatic Hydrocarbons.
3. mg/kg = milligrams per kilogram.
4. Bold values indicate detections.
5. BaP = Benzo(a)pyrene.
6. The BaP Equivalent Concentration is calculated by summing the detected concentrations in each sample multiplied by their respective Relative Potency Factors
7. Relative Potency Factors from EPA's 1993 Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons

TABLE 9
SUMMARY OF PRE EXCAVATION SOIL ANALTYICAL DATA - PCBS
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Sample I.D.	Sampling Date	Depth	Total PCBs	ROD Target Concentration
CPS-1	04/10/03	0-6"	**0.032**	1.04
CPS-2	04/10/03	0-6"	**0.050**	1.04
CPS-3	04/10/03	0-6"	**0.040**	1.04
CPS-4	04/10/03	0-6"	**0.860**	1.04
CPS-5	04/10/03	0-6"	**21.5**	1.04
CPS-5D	04/10/03	12"	**0.460**	1.04
CPS-6	04/10/03	0-6"	**7.40**	1.04
CPS-7	04/10/03	0-6"	ND(0.250)	1.04
CPS-7D	04/10/03	12"	ND(0.030)	1.04
CPS-7D (Lab Duplicate)	04/10/03	0-6"	ND(0.031)	1.04
CPS-8	04/10/03	0-6"	ND(0.030)	1.04
CPS-9	04/10/03	0-6"	**6.90**	1.04
CPS-10	04/10/03	0-6"	**3.90**	1.04
CPS-11D	04/10/03	9-12"	ND(0.034)	1.04
CPS-12	04/10/03	0-6"	ND(0.032)	1.04
CPS-13	04/10/03	0-6"	**26.5**	1.04
CPS-14	04/10/03	0-6"	**5.00**	1.04
CPS-14 (Lab Duplicate)	04/10/03	0-6"	**3.00**	1.04
CPS-15	04/10/03	0-6"	ND(0.250)	1.04
CPS-16	04/10/03	0-6"	ND(0.250)	1.04
CPS-17	04/22/03	---	ND(0.250)	1.04
CPS-18	04/22/03	---	ND(0.250)	1.04
CPS-19	04/22/03	---	ND(0.250)	1.04
CPS-20	04/22/03	---	ND(0.250)	1.04
CPS-21	04/22/03	---	ND(0.250)	1.04
CPS-22	04/22/03	---	ND(0.250)	1.04
CPS-23	04/22/03	---	ND(0.250)	1.04
CPS-24	04/22/03	---	ND(0.250)	1.04

NOTES:
1. Values in micrograms per kilograms (mg/kg).
2. ND(x) = constituent not detected above practical quantiation limits noted in parentheses.
3. BOLD exceeds laboratory detection limits.
4. Shaded exceeds soil target concentrations specified in the 1989 Record of Decision (ROD).

TABLE 10
SUMMARY OF POST EXCAVATION SOIL ANALYTICAL DATA - PCBS
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Sample I.D.	Sampling Date	Location	Total PCBs	ROD Target Concentration
CPE-1	06/03/03	sidewall	**0.22**	1.04
CPE-2	06/03/03	sidewall	**3.8**	1.04
CPE-3	06/03/03	sidewall	**26.2**	1.04
CPE-4	06/03/03	sidewall	ND(0.034)	1.04
CPE-5	06/03/03	sidewall	ND(0.25)	1.04
CPE-6	06/03/03	sidewall	ND(0.029)	1.04
CPE-7	06/03/03	sidewall	**0.25**	1.04
CPE-8	06/03/03	sidewall	ND(0.029)	1.04
CPE-9	06/03/03	sidewall	**0.87**	1.04
CPE-9D (field duplicate)	06/03/03	sidewall	**0.98**	1.04
CPE-10	06/03/03	sidewall	**0.27**	1.04
CPE-11	06/03/03	sidewall	**0.31**	1.04
CPE-12	06/03/03	base	**1.2**	1.04
CPE-13	06/03/03	base	**19.6**	1.04
CPE-14	06/03/03	base	**22.7**	1.04
CPE-15	06/03/03	base	**1.8**	1.04
CPE-16	06/03/03	base	**2.8**	1.04
CPE-17	06/03/03	base	**0.27**	1.04
CPE-18	06/03/03	base	**0.62**	1.04
CPE-19	06/03/03	base	**0.58**	1.04
CPE-19D (field duplicate)	06/03/03	base	**0.44**	1.04
CPE-20	06/11/03	6"	**10.6**	1.04
CPE-20	06/11/03	12"	**2.3**	1.04
CPE-20	06/11/03	18"	**1.1**	1.04
CPE-20	06/11/03	24"	ND(0.25)	1.04
CPE-21	06/11/03	6"	**7.8**	1.04
CPE-21	06/11/03	12"	ND(0.25)	1.04
CPE-21	06/11/03	18"	ND(0.25)	1.04
CPE-21	06/11/03	24"	ND(0.25)	1.04
CPX-1	06/25/03	sidewall	ND(0.1)	1.04
CPX-2	06/25/03	sidewall	**0.510**	1.04
CPX-3	06/25/03	sidewall	ND(0.1)	1.04
CPX-4	06/25/03	sidewall	**12.3**	1.04
CPX-5	06/25/03	sidewall	**0.55**	1.04
CPX-6	06/25/03	sidewall	**1.40**	1.04
CPX-7	06/25/03	sidewall	**0.59**	1.04
CPX-8	06/25/03	sidewall	**1.2**	1.04
CPX-9	06/25/03	base	**7.6**	1.04
CPX-10	06/25/03	base	**0.37**	1.04
CPX-11	06/25/03	base	**0.69**	1.04
CPX-12	06/25/03	base	**3.50**	1.04
CPX-13	06/25/03	sidewall	ND(0.1)	1.04
CPX-14	06/25/03	sidewall	ND(0.1)	1.04
CPX-15	06/25/03	sidewall	**0.14**	1.04
CPX-16	06/25/03	sidewall	ND(0.1)	1.04
CPX-17	06/25/03	base	ND(0.1)	1.04
CPX-18	06/25/03	base	ND(0.1)	1.04
CPX-19	06/25/03	sidewall	**0.11**	1.04
CPX-20	06/25/03	sidewall	**0.18**	1.04
PCB-X-1	07/31/03	sidewall	**0.213**	1.04
PCB-X-2	07/31/03	sidewall	ND(0.003)	1.04
PCB-X-3	07/31/03	sidewall	ND(0.003)	1.04
PCB-X-4	07/31/03	sidewall	**0.373**	1.04
PCB-X-5	07/31/03	sidewall	**0.051**	1.04
PCB-X-6	07/31/03	sidewall	**3.53**	1.04
PCB-X-7	07/31/03	base	**3.15**	1.04
PCB-X-8	07/31/03	base	ND(0.003)	1.04

NOTES:
1. Values in milligrams per kilograms (mg/kg).
2. ND(x) = constituent not detected above practical quantitation limits noted in parentheses.
3. BOLD = detected concentration.
4. Shaded exceeds soil target concentrations established in the 1989 Record of Decision (ROD).

TABLE 11
PCB AREA - SUMMARY OF DATA USED FOR UCL EVALUATION
60 OLYMPIA AVENUE,
WOBURN, MASSACHUSETTS

Sample ID	Unit	Concentration	Qualifier
CPS-1	mg/kg	**0.032**	
CPS-2	mg/kg	**0.050**	
CPS-3	mg/kg	**0.040**	
CPS-4	mg/kg	**0.86**	
CPE-11	mg/kg	**0.31**	
CPE-10	mg/kg	**0.27**	
CPE-9	mg/kg	**0.87**	
CPE-8	mg/kg	0.29	U
CPE-7	mg/kg	0.25	U
CPE-6	mg/kg	0.29	U
CPE-5	mg/kg	0.25	U
CPE-19	mg/kg	**0.58**	
CPE-18	mg/kg	**0.62**	
CPE-12	mg/kg	**1.2**	
CPE-4	mg/kg	0.25	U
CPX-13	mg/kg	0.10	U
CPX-14	mg/kg	0.10	U
CPX-15	mg/kg	**0.14**	
CPX-16	mg/kg	0.10	U
CPX-17	mg/kg	0.10	U
CPX-18	mg/kg	0.10	U
CPX-19	mg/kg	**0.11**	
CPX-20	mg/kg	**0.18**	
CPX-1	mg/kg	0.10	U
CPX-2	mg/kg	**0.51**	
CPX-3	mg/kg	0.10	U
CPX-7	mg/kg	**0.59**	
CPX-8	mg/kg	**1.2**	
CPX-10	mg/kg	**0.37**	
PCB-X-1	mg/kg	**0.213**	
PCB-X-2	mg/kg	0.003	U
PCB-X-3	mg/kg	0.003	U
PCB-X-4	mg/kg	**0.373**	
PCB-X-5	mg/kg	**0.051**	
PCB-X-6	mg/kg	**3.53**	
PCB-X-7	mg/kg	**3.15**	
PCB-X-8	mg/kg	0.003	U
95% UCL	mg/kg	0.778	

Notes:
PCBs - Polychlorinated Biphenyls.
mg/kg - milligrams per kilogram.
95% UCL - 95% Upper Confidence Limit as calculated by EPA's ProUCL Software Version 5.1 (2016).

APPENDICES

APPENDIX A

LABORATORY ANALYTICAL REPORTS

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532

Telephone (508) 759-4441
FAX (508) 759-4475
www.groundwateranalytical.com

April 18, 2003

Mr. Kevin Trainer
GeoInsight, Inc.
319 Littleton Rd.
Suite 105
Westford, MA 01886

LABORATORY REPORT

Project: **60 Olympia/2491**
Lab ID: **59941**
Received: **04-11-03**

Dear Kevin:

Enclosed are the analytical results for the above referenced project. The project was processed for Priority turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC standards, except as may be specifically noted, or described in the project narrative. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Eric H. Jensen
Operations Manager

EHJ/pcl
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project:	**60 Olympia/2491**	Delivery:	**GWA Courier**	Temperature:	**1.5'C**
Client:	**GeoInsight, Inc.**	Airbill:	**n/a**	Chain of Custody:	**Present**
Lab ID:	**59941**	Lab Receipt:	**04-11-03**	Custody Seal(s):	**n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
59941-1	CPS-Disposal		Soil	4/11/03 12:00	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C050134	40 mL VOA Vial	Industrial	BX2125	Methanol	R-3245J	01-17-02	n/a		
C016002	40 mL VOA Vial	Proline	BX3052	NaHSO4	R-3356B	04-23-02	n/a		
C016009	40 mL VOA Vial	Proline	BX3052	NaHSO4	R-3356B	04-23-02	n/a		
C016021	40 mL VOA Vial	Proline	BX3052	NaHSO4	R-3356B	04-23-02	n/a		
C288455	250 mL Amber Glass	n/a	n/a	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
59941-2	SPS-Disposal		Soil	4/11/03 12:15	EPA 8260B TCL Volatile Organics				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C079301	40 mL VOA Vial	Industrial	BX2778	Methanol	R-3306V	02-22-02	07-24-02		
C126003	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		
C126002	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		
C126001	40 mL VOA Vial	Industrial	BX4064	NaHSO4	R-3356B	06-17-02	07-24-02		
C288456	250 mL Amber Glass	n/a	n/a	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
59941-3	CPS-Disposal		Soil	4/11/03 12:00	EPA 6010B/7471A 5 RCRA Metals EPA 8082 PCBs TPH by GC ASTM D3328-90 Mod EPA 9045C Corrosivity EPA 1010 Mod Ignitability EPA SW-846,Chp.7 Reactivity				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C288457	250 mL Glass	n/a	n/a	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
59941-4	SPS-Disposal		Soil	4/11/03 12:15	EPA 6010B/7471A 5 RCRA Metals EPA 8082 PCBs TPH by GC ASTM D3328-90 Mod EPA 9045C Corrosivity EPA 1010 Mod Ignitability EPA SW-846,Chp.7 Reactivity				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C288454	250 mL Glass	n/a	n/a	None	n/a	n/a	n/a		

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**CPS-Disposal**	Laboratory ID:	**59941-01**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM1-1306-S**
Client:	**GeoInsight, Inc.**	Sampled:	**04-11-03**
Container:	**40 mL VOA Vial**	Received:	**04-11-03**
Preservation:	**NaHSO4 / Cool**	Analyzed:	**04-16-03**
Matrix:	**Soil**	Dilution Factor:	**1**
% Moisture:	**9**		

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	25
75-01-4	Vinyl Chloride	BRL	ug/Kg	25
74-83-9	Bromomethane	BRL	ug/Kg	25
75-00-3	Chloroethane	BRL	ug/Kg	25
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	13
67-64-1	Acetone	BRL	ug/Kg	500
75-15-0	Carbon Disulfide	BRL	ug/Kg	130
75-09-2	Methylene Chloride	BRL	ug/Kg	130
156-60-5	*trans*-1,2-Dichloroethene	BRL	ug/Kg	13
1634-04-4	Methyl *tert*-butyl Ether (MTBE) ◊	BRL	ug/Kg	13
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	13
156-59-2	*cis*-1,2-Dichloroethene	BRL	ug/Kg	13
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	130
67-66-3	Chloroform	BRL	ug/Kg	13
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	13
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	13
71-43-2	Benzene	BRL	ug/Kg	13
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	13
79-01-6	Trichloroethene	BRL	ug/Kg	13
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	13
75-27-4	Bromodichloromethane	BRL	ug/Kg	13
10061-01-5	*cis*-1,3-Dichloropropene	BRL	ug/Kg	13
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	130
108-88-3	Toluene	BRL	ug/Kg	13
10061-02-6	*trans*-1,3-Dichloropropene	BRL	ug/Kg	13
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	13
127-18-4	Tetrachloroethene	BRL	ug/Kg	13
591-78-6	2-Hexanone	BRL	ug/Kg	130
124-48-1	Dibromochloromethane	BRL	ug/Kg	13
108-90-7	Chlorobenzene	BRL	ug/Kg	13
100-41-4	Ethylbenzene	BRL	ug/Kg	13
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL	ug/Kg	13
95-47-6	*ortho*-Xylene	BRL	ug/Kg	13
100-42-5	Styrene	BRL	ug/Kg	13
75-25-2	Bromoform	BRL	ug/Kg	13
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	13

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**96 %**	80 - 120 %
1,2-Dichloroethane-d_4	**96 %**	80 - 120 %
Toluene-d_8	**87 %**	81 - 117 %
4-Bromofluorobenzene	**103 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

EPA Method 8260B
TCL Volatile Organics by GC/MS

Field ID:	**SPS-Disposal**	Laboratory ID:	**59941-02**
Project:	**60 Olympia/2491**	QC Batch ID:	**VM1-1306-S**
Client:	**GeoInsight, Inc.**	Sampled:	**04-11-03**
Container:	**40 mL VOA Vial**	Received:	**04-11-03**
Preservation:	**NaHSO4 / Cool**	Analyzed:	**04-16-03**
Matrix:	**Soil**	Dilution Factor:	**1**
% Moisture:	**17**		

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	26
75-01-4	Vinyl Chloride	BRL	ug/Kg	26
74-83-9	Bromomethane	BRL	ug/Kg	26
75-00-3	Chloroethane	BRL	ug/Kg	26
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	13
67-64-1	Acetone	BRL	ug/Kg	510
75-15-0	Carbon Disulfide	BRL	ug/Kg	130
75-09-2	Methylene Chloride	BRL	ug/Kg	130
156-60-5	*trans*- 1,2-Dichloroethene	BRL	ug/Kg	13
1634-04-4	Methyl *tert*- butyl Ether (MTBE) ◊	BRL	ug/Kg	13
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	13
156-59-2	*cis*- 1,2-Dichloroethene	BRL	ug/Kg	13
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	130
67-66-3	Chloroform	BRL	ug/Kg	13
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	13
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	13
71-43-2	Benzene	BRL	ug/Kg	13
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	13
79-01-6	Trichloroethene	BRL	ug/Kg	13
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	13
75-27-4	Bromodichloromethane	BRL	ug/Kg	13
10061-01-5	*cis*- 1,3-Dichloropropene	BRL	ug/Kg	13
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	130
108-88-3	Toluene	BRL	ug/Kg	13
10061-02-6	*trans*- 1,3-Dichloropropene	BRL	ug/Kg	13
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	13
127-18-4	Tetrachloroethene	BRL	ug/Kg	13
591-78-6	2-Hexanone	BRL	ug/Kg	130
124-48-1	Dibromochloromethane	BRL	ug/Kg	13
108-90-7	Chlorobenzene	BRL	ug/Kg	13
100-41-4	Ethylbenzene	BRL	ug/Kg	13
108-38-3/106-42-3	*meta*- Xylene and *para*- Xylene	BRL	ug/Kg	13
95-47-6	*ortho*- Xylene	BRL	ug/Kg	13
100-42-5	Styrene	BRL	ug/Kg	13
75-25-2	Bromoform	BRL	ug/Kg	13
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	13

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**93 %**	80 - 120 %
1,2-Dichloroethane-d_4	**100 %**	80 - 120 %
Toluene-d_8	**88 %**	81 - 117 %
4-Bromofluorobenzene	**104 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

GROUNDWATER ANALYTICAL

ASTM Method D3328-90 (Modified)
Hydrocarbon Fingerprinting by GC/FID

Field ID:	**CPS-Disposal**	Laboratory ID:	**59941-03**
Project:	**60 Olympia/2491**	QC Batch ID:	**HF-1824-M**
Client:	**GeoInsight, Inc.**	Sampled:	**04-11-03**
Container:	**250 mL Glass**	Received:	**04-11-03**
Preservation:	**Cool**	Extracted:	**04-15-03**
Matrix:	**Soil**	Analyzed:	**04-16-03**
% Moisture:	**10**	Dilution Factor:	**1**

Qualitative Identification

This sample has GC/FID characteristics that are similar to:

1. Petroleum products in the n-C20 to n-C36 range.

Analyte	Concentration	Units	Reporting Limit
Total Petroleum Hydrocarbons	**280**	mg/Kg	64

QC Surrogate Compound	Recovery	QC Limits
ortho-Terphenyl	**78 %**	60 - 140 %

Method Reference: Comparison of Waterborne Petroleum Oils by Gas Chromatography, Volume 11.02, Water, American Society for Testing and Materials (1990). Analytical protocol modified by use of an internal standard. Results are quantified on the basis of 5α–androstane. Sample preparation protocol modified by use of microwave accelerated solvent extraction. Results are reported on a dry weight basis.

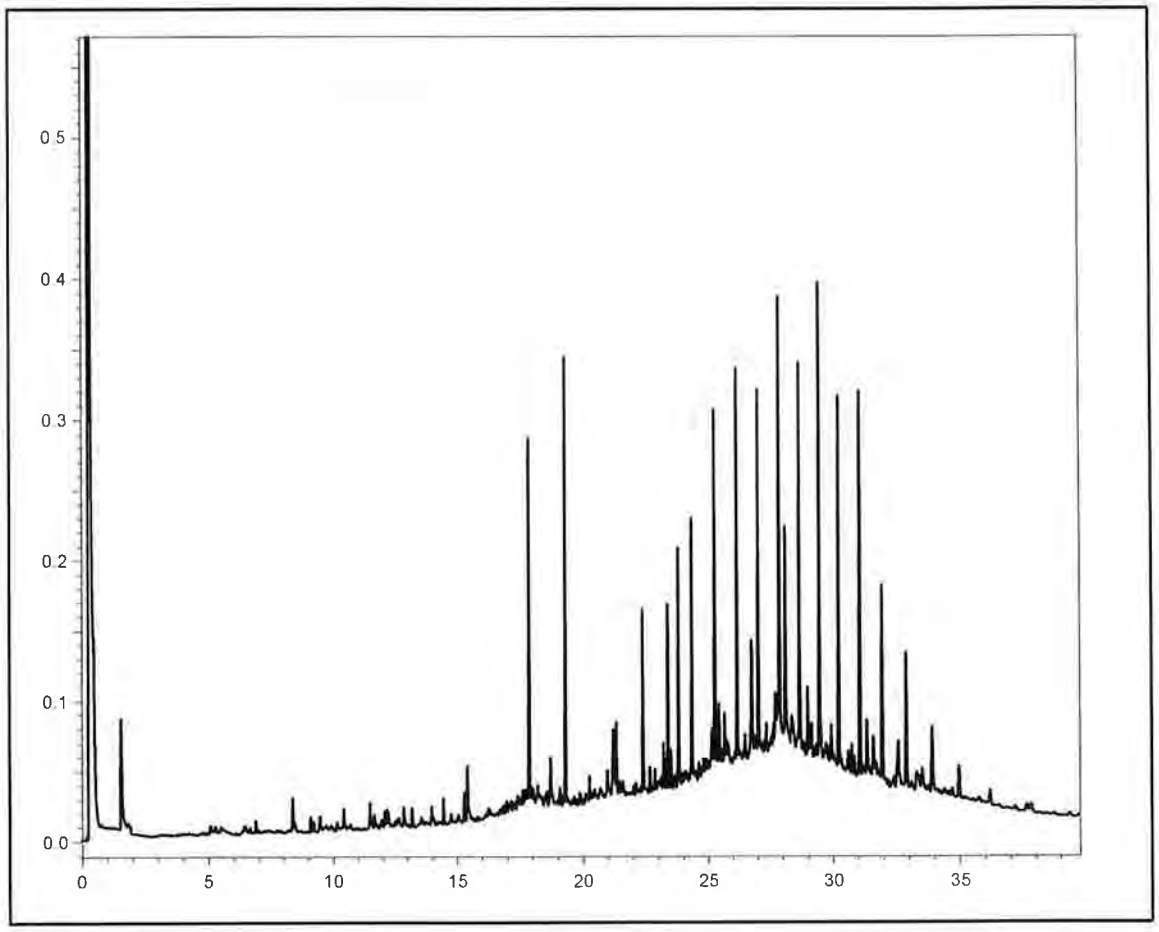
Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

ASTM METHOD D3328-90 (Modified)
Hydrocarbon Fingerprinting by GC/FID

Lab ID: 59941-03 **Hydrocarbons Laboratory**



Retention Time (Minutes)

GROUNDWATER ANALYTICAL

ASTM Method D3328-90 (Modified)
Hydrocarbon Fingerprinting by GC/FID

Field ID:	**SPS-Disposal**	Laboratory ID:	**59941-04**
Project:	**60 Olympia/2491**	QC Batch ID:	**HF-1824-M**
Client:	**GeoInsight, Inc.**	Sampled:	**04-11-03**
Container:	**250 mL Glass**	Received:	**04-11-03**
Preservation:	**Cool**	Extracted:	**04-15-03**
Matrix:	**Soil**	Analyzed:	**04-16-03**
% Moisture:	**19**	Dilution Factor:	**1**

Qualitative Identification

This sample has GC/FID characteristics that are similar to:

1. Petroleum products in the n-C20 to n-C36 range.

Analyte	Concentration	Units	Reporting Limit
Total Petroleum Hydrocarbons	**75**	mg/Kg	71

QC Surrogate Compound	Recovery	QC Limits
ortho-Terphenyl	**79** %	60 - 140 %

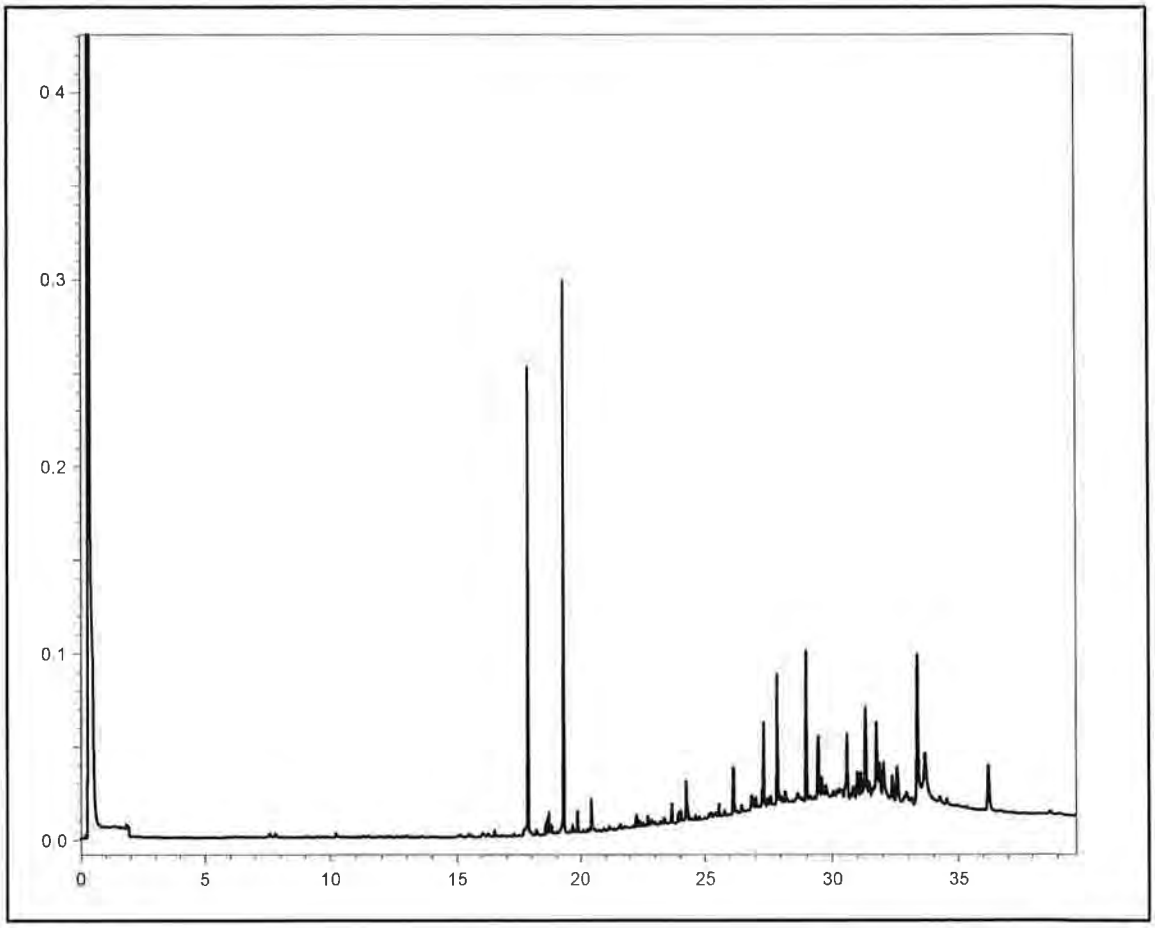
Method Reference: Comparison of Waterborne Petroleum Oils by Gas Chromatography, Volume 11.02, Water, American Society for Testing and Materials (1990). Analytical protocol modified by use of an internal standard. Results are quantified on the basis of 5α–androstane. Sample preparation protocol modified by use of microwave accelerated solvent extraction. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

ASTM METHOD D3328-90 (Modified)
Hydrocarbon Fingerprinting by GC/FID

Lab ID: 59941-04 **Hydrocarbons Laboratory**



Retention Time (Minutes)

GROUNDWATER ANALYTICAL

EPA Method 8082
Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID:	**CPS-Disposal**	Laboratory ID:	**59941-03**
Project:	**60 Olympia/2491**	QC Batch ID:	**PB-1696-M**
Client:	**GeoInsight, Inc.**	Sampled:	**04-11-03**
Container:	**250 mL Glass**	Received:	**04-11-03**
Preservation:	**Cool**	Extracted:	**04-15-03**
Matrix:	**Soil**	Analyzed:	**04-15-03**
% Moisture:	**10**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL	ug/Kg	86
11104-28-2	Aroclor 1221	BRL	ug/Kg	86
11141-16-5	Aroclor 1232	BRL	ug/Kg	86
53469-21-9	Aroclor 1242	BRL	ug/Kg	86
12672-29-6	Aroclor 1248	BRL	ug/Kg	86
11097-69-1	Aroclor 1254	BRL	ug/Kg	86
11096-82-5	Aroclor 1260	BRL	ug/Kg	86

QC Surrogate Compound	Recovery	QC Limits
Tetrachloro-*m*-xylene	**28 %**	25 - 121 %
Decachlorobiphenyl	**36 %**	28 - 138 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as Aroclor analytes formerly specified by EPA Method 8080A. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

GROUNDWATER ANALYTICAL

EPA Method 8082
Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID:	**SPS-Disposal**	Laboratory ID:	**59941-04**
Project:	**60 Olympia/2491**	QC Batch ID:	**PB-1696-M**
Client:	**GeoInsight, Inc.**	Sampled:	**04-11-03**
Container:	**250 mL Glass**	Received:	**04-11-03**
Preservation:	**Cool**	Extracted:	**04-15-03**
Matrix:	**Soil**	Analyzed:	**04-15-03**
% Moisture:	**19**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL	ug/Kg	95
11104-28-2	Aroclor 1221	BRL	ug/Kg	95
11141-16-5	Aroclor 1232	BRL	ug/Kg	95
53469-21-9	Aroclor 1242	BRL	ug/Kg	95
12672-29-6	Aroclor 1248	BRL	ug/Kg	95
11097-69-1	Aroclor 1254	BRL	ug/Kg	95
11096-82-5	Aroclor 1260	BRL	ug/Kg	95

QC Surrogate Compound	Recovery	QC Limits
Tetrachloro-*m*-xylene	**80 %**	25 - 121 %
Decachlorobiphenyl	**117 %**	28 - 138 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as Aroclor analytes formerly specified by EPA Method 8080A. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

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GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **CPS-Disposal**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Soil**
Received: **04-11-03**

Lab ID: **59941-03** Sampled: **04-11-03 12:00** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Corrosivity (as pH)	**6.0**	pH	NA	04-16-03	PH-0399-S	EPA 9045C
Ignitability (as Flashpoint)	**> 165**	°F	70	04-16-03	FP-0399-S	EPA 1010 Mod
Reactive Cyanide	BRL	mg/Kg	50	04-16-03	RC-0364-S	SW-846 Chp. 7.3.1
Reactive Sulfide	BRL	mg/Kg	100	04-16-03	RS-0364-S	SW-846 Chp. 7.3.4

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA Eighteenth Edition (1992), Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996), and Agriculture Handbook 60, U.S. Department of Agriculture. Results are reported on a dry weight basis.

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **SPS-Disposal**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**

Matrix: **Soil**
Received: **04-11-03**

Lab ID: **59941-04** Sampled: **04-11-03 12:15** Container: **250 mL Glass** Preservation: **Cool**

Analyte	Result	Units	Reporting Limit	Analyzed	QC Batch	Method
Corrosivity (as pH)	**6.6**	pH	NA	04-16-03	PH-0399-S	EPA 9045C
Ignitability (as Flashpoint)	**>165**	°F	70	04-16-03	FP-0399-S	EPA 1010 Mod
Reactive Cyanide	BRL	mg/Kg	50	04-16-03	RC-0364-S	SW-846 Chp. 7.3.1
Reactive Sulfide	BRL	mg/Kg	100	04-16-03	RS-0364-S	SW-846 Chp. 7.3.4

Method References: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020, Revised (1983), Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100, (1993), Standard Methods for the Examination of Water and Wastewater, APHA Eighteenth Edition (1992), Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996), and Agriculture Handbook 60, U.S. Department of Agriculture. Results are reported on a dry weight basis.

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

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GROUNDWATER ANALYTICAL

Trace Metals

Field ID: **CPS-Disposal**
Project: **60 Olympia/2491**
Client: **GeoInsight, Inc.**
Container: **120 mL Plastic**
Preservation: **Cool**
Matrix: **Soil**

Laboratory ID: **59941-03**
Sampled: **04-10-03**
Received: **04-11-03**
% Solids: **81**

CAS Number	Analyte	Concentration	Units	Reporting Limit	Analyzed	QC Batch	Method
7440-38-2	Arsenic, Total	BRL	mg/Kg	5.9	04-16-03	MM-1836-S	EPA 6010B
7440-43-9	Cadmium, Total	BRL	mg/Kg	0.59	04-15-03	MM-1836-S	EPA 6010B
7440-47-3	Chromium, Total	BRL	mg/Kg	12	04-15-03	MM-1836-S	EPA 6010B
7439-92-1	Lead, Total	BRL	mg/Kg	12	04-15-03	MM-1836-S	EPA 6010B
7439-97-6	Mercury, Total	BRL	mg/Kg	0.041	04-15-03	MP-1389-S	EPA 7471A

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	**SPS-Disposal**	Laboratory ID:	**59941-04**
Project:	**60 Olympia/2491**	Sampled:	**04-10-03**
Client:	**GeoInsight, Inc.**	Received:	**04-11-03**
Container:	**120 mL Plastic**	% Solids:	**81**
Preservation:	**Cool**		
Matrix:	**Soil**		

CAS Number	Analyte	Concentration	Units	Reporting Limit	Analyzed	QC Batch	Method
7440-38-2	Arsenic, Total	BRL	mg/Kg	6.1	04-16-03	MM-1836-S	EPA 6010B
7440-43-9	Cadmium, Total	BRL	mg/Kg	0.61	04-15-03	MM-1836-S	EPA 6010B
7440-47-3	Chromium, Total	**660**	mg/Kg	12	04-15-03	MM-1836-S	EPA 6010B
7439-92-1	Lead, Total	**37**	mg/Kg	12	04-15-03	MM-1836-S	EPA 6010B
7439-97-6	Mercury, Total	**0.14**	mg/Kg	0.04	04-15-03	MP-1389-S	EPA 7471A

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**60 Olympia/2491**	Lab ID:	**59941**
Client:	**GeoInsight, Inc.**	Received:	**04-11-03 20:25**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1. Samples identified as "CPS-Disposal" and "SPS-Disposal" were analyzed by EPA Method 8082, TPH GC, 8260 TCL, 5 RCRA Metals and Corrosivity, Reactivity and Ignitability per Christine Binger, 04-14-03.

B. Method Non-Conformances

The following method non-conformances were noted for this project:

1. Project 59941 was received at a temperature of 1.5'C. This measurement is outside the recommended range of 2-6'C.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

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www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

№ 069241

Project Name: 60 OLYMPIA	Firm: GEOINSIGHT
Project Number: 2491	Address: 319 LITTLETON RD
Sampler Name: JS	City / State / Zip: WESTFORD, MA 01886
Project Manager: KDT	Telephone: 978-692-1114

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- ☐ STANDARD (10 Business Days)
- ☒ PRIORITY (5 Business Days)
- ☐ RUSH (RAN- _____)
  (Rush requires Rush Authorization Number)
- ☐ Please Email to: _____
- ☐ Please FAX to: 978-692-1115

BILLING

- ☐ Purchase Order No.: _____
- ☐ Third Party Billing: _____
- ☐ GWA Quote: _____

ANALYSIS REQUEST

OPTIONS: Volatiles: ☐ TIC Search; Semivolatiles: ☐ Acid Only ☐ B/N Only ☐ TIC Search; Metals: Specify For Water Samples ☐ Total ☐ Dissolved

SDWA: Volatiles: ☐ 524.2-MTBE; Semivolatiles: ☐ 525.2; Pest/Herb/PCBs Extractable: ☐ 505 ☐ 508; Pest/Herb/PCBs Vol.: ☐ 1531.1 ☐ 515.1 ☐ 504.1 EDB/DBCP; Metals: ☐ Lead and Copper

NPDES: Volatiles: ☐ 624; ☐ 602+MTBE ☐ 601 ☐ 601/602+MTBE; Semivolatiles: ☐ 625 ☐ 625 PAHs only; Pest/Herb/PCBs Extractable: ☐ 608 Pesticides ☐ 608 PCBs; Pest/Herb/PCBs Vol.: ☐ 8015; Metals: ☐ 13 Priority Pollutant

RCRA/21E: Volatiles: ☒ 8260B TCL+MTBE ☐ 8260B; ☐ 8021B Aromatics ☐ 8021B Halocarbons ☐ 8021B; Semivolatiles: ☐ 8270C ☐ 8270C PAHs only; Pest/Herb/PCBs Extractable: ☐ 8081A Pesticides ☐ 8082 PCBs; Pest/Herb/PCBs Vol.: ☐ 8151A Herbicides ☐ 8011 EDB/DBCP; Metals: ☐ 8 RCRA ☐ 5 RCRA ☐ MA List Metals ☐ 23 TAL ☐ Specify:

Petroleum Hydrocarbon Ext. TPH: ☐ TPH-IR ☐ Diesel Range Organics (DRO) ☐ CT EPH ☐ MA DEP EPH w/all targets ☐ EPH Carbon Ranges only ☐ Hydrocarbon Fingerprint (GC/FID by ASTM D3328 90-Mod.) ☐ TPH by GC/FID (8100 Mod) Quantitative Only ☐ Gasoline Range Organics (GRO) ☐ MA DEP VPH w/all targets ☐ VPH Carbon ranges only

Haz. Waste: ☐ TCLP ☐ SPLP ☐ 8 Metals ☐ Pb only ☐ VOA ☐ Semi VOA ☐ Pesticides ☐ Herbicides ☐ Corrosivity (as pH) ☐ Reactivity ☐ Ignitability (as Flashpoint) ☐ Paint Filter ☐ MA Basic Disposal Criteria: 8260B, TPH by GC, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity

General Chemistry: ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Fluoride ☐ Sulfate ☐ Dissolved Phosphorus ☐ Ammonia ☐ TKN ☐ Total Phosphorus ☐ Total N (as NO2/NO3/TKN) ☐ Oil & Grease ☐ COD ☐ TOC ☐ BOD ☐ TDS ☐ TSS ☐ TS ☐ Alkalinity ☐ Cyanide, Total ☐ Cyanide, Physiologically Available ☐ pH ☐ Dissolved Oxygen ☐ Turbidity

Other: ☐ Total Coliform ☐ Fecal Coliform ☐ HPC

Sampling DATE	Sampling TIME	SAMPLE IDENTIFICATION	Matrix	Type	Container(s)	Preservation	Filtered	LABORATORY NUMBER (Lab Use Only)	RCRA/21E 8260B TCL+MTBE
4/11	12:00	CPS-DISPOSAL	SOIL	GRAB	6 40mL VOA Vial; 4 1L/32 oz Amber Glass; 2 250mL/8 oz Plastic; ~~2~~ 1 500mL/16 oz Plastic; 1 1L/32 oz Plastic	Methanol; Sodium Bisulfate; ICE		59941 1 3	X
4/11	12:15	SPS-DISPOSAL	SOIL	GRAB	6 40mL VOA Vial; 4 1L/32 oz Amber Glass; 2 250mL/8 oz Plastic; ~~2~~ 1 500mL/16 oz Plastic; 1 1L/32 oz Plastic	Methanol; Sodium Bisulfate; ICE		2 4	X

REMARKS / SPECIAL INSTRUCTIONS

Total 12

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
☐ CT	☐ MCP GW-1/S-1	☐ PWS Form
☐ ME	☐ MCP GW-2/S-1	☐ _____
☐ MA	☐ NY STARS	☐ _____
☐ NH	☐ Drinking Water	
☐ NY	☐ Wastewater	
☐ RI	☐ Waste Disposal	
☐ VT	☐ Dredge Material	
☐ ___	☐ _____	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required
- ☐ Sample Duplicate
- ☐ Matrix Spike
- ☐ Matrix Spike Duplicate

Selection of QC Sample
- ☐ Please use sample: _____

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by Sampler:	Date	Time	Received by:	Receipt Temperature:
[signature]	4/11/03	3:15	Alan Maddigan	☐ Ice ☐ Refrigerated 2-6°C Recommended 1.5°C
Relinquished by: Alan Maddigan	**Date** 4/11/03	**Time** 3:25	**Received by:** [signature] 2025	**Container Count:**
Relinquished by:	**Date**	**Time**	**Received by Laboratory:**	**Shipping/Airbill Number:**

Method of Shipment: ☒ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ _____

Custody Seal Number:

GROUNDWATER ANALYTICAL

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evalutaing Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Perent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **EPA Method 8260B**
QC Batch ID: **VM1-1306-SL**
Matrix: **Soil**
Units: **ug/Kg**

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
75-35-4	1,1-Dichloroethene	50	60	**120 %**	70 - 130 %
71-43-2	Benzene	50	51	**101 %**	70 - 130 %
79-01-6	Trichloroethene	50	48	**96 %**	70 - 130 %
108-88-3	Toluene	50	52	**103 %**	70 - 130 %
108-90-7	Chlorobenzene	50	56	**112 %**	70 - 130 %

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**87 %**	80 - 120 %
1,2-Dichloroethane-d_4	**93 %**	80 - 120 %
Toluene-d_8	**88 %**	81 - 117 %
4-Bromofluorobenzene	**93 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM1-1306-SB**
Matrix: **Soil**

CAS Number	Analyte	Concentration	Units	Reporting Limit
74-87-3	Chloromethane	BRL	ug/Kg	10
75-01-4	Vinyl Chloride	BRL	ug/Kg	10
74-83-9	Bromomethane	BRL	ug/Kg	10
75-00-3	Chloroethane	BRL	ug/Kg	10
75-35-4	1,1-Dichloroethene	BRL	ug/Kg	5
67-64-1	Acetone	BRL	ug/Kg	200
75-15-0	Carbon Disulfide	BRL	ug/Kg	50
75-09-2	Methylene Chloride	BRL	ug/Kg	50
156-60-5	*trans*-1,2-Dichloroethene	BRL	ug/Kg	5
1634-04-4	Methyl *tert*-butyl Ether (MTBE) ◊	BRL	ug/Kg	5
75-34-3	1,1-Dichloroethane	BRL	ug/Kg	5
156-59-2	*cis*-1,2-Dichloroethene	BRL	ug/Kg	5
78-93-3	2-Butanone (MEK)	BRL	ug/Kg	50
67-66-3	Chloroform	BRL	ug/Kg	5
71-55-6	1,1,1-Trichloroethane	BRL	ug/Kg	5
56-23-5	Carbon Tetrachloride	BRL	ug/Kg	5
71-43-2	Benzene	BRL	ug/Kg	5
107-06-2	1,2-Dichloroethane	BRL	ug/Kg	5
79-01-6	Trichloroethene	BRL	ug/Kg	5
78-87-5	1,2-Dichloropropane	BRL	ug/Kg	5
75-27-4	Bromodichloromethane	BRL	ug/Kg	5
10061-01-5	*cis*-1,3-Dichloropropene	BRL	ug/Kg	5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL	ug/Kg	50
108-88-3	Toluene	BRL	ug/Kg	5
10061-02-6	*trans*-1,3-Dichloropropene	BRL	ug/Kg	5
79-00-5	1,1,2-Trichloroethane	BRL	ug/Kg	5
127-18-4	Tetrachloroethene	BRL	ug/Kg	5
591-78-6	2-Hexanone	BRL	ug/Kg	50
124-48-1	Dibromochloromethane	BRL	ug/Kg	5
108-90-7	Chlorobenzene	BRL	ug/Kg	5
100-41-4	Ethylbenzene	BRL	ug/Kg	5
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	BRL	ug/Kg	5
95-47-6	*ortho*-Xylene	BRL	ug/Kg	5
100-42-5	Styrene	BRL	ug/Kg	5
75-25-2	Bromoform	BRL	ug/Kg	5
79-34-5	1,1,2,2-Tetrachloroethane	BRL	ug/Kg	5

QC Surrogate Compounds	Recovery	QC Limits
Dibromofluoromethane	**91 %**	80 - 120 %
1,2-Dichloroethane-d_4	**86 %**	80 - 120 %
Toluene-d_8	**87 %**	81 - 117 %
4-Bromofluorobenzene	**92 %**	74 - 121 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

◊ Indicates additional target analyte.

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GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **ASTM Method D3328-90 (Modified)**
QC Batch ID: **HF-1824-M**
Matrix: **Soil**
Units: **mg/Kg**

Analyte	Spiked	Measured	Recovery	QC Limits
Fuel Oil No. 2	130	120	**90 %**	60 - 140 %

QC Surrogate Compound	Recovery	QC Limits
ortho-Terphenyl	**97 %**	60 - 140 %

Method Reference: Comparison of Waterborne Petroleum Oils by Gas Chromatography, Volume 11.02, Water, American Society for Testing and Materials (1990). Analytical protocol modified by use of an internal standard. Results are quantified on the basis of 5α–androstane. Sample preparation protocol modified by use of microwave accelerated solvent extraction. Results are reported on a dry weight basis.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **ASTM Method D3328-90 (Modified)**
QC Batch ID: **HF-1824-M**
Matrix: **Soil**

Analyte	Concentration	Units	Reporting Limit
Total Petroleum Hydrocarbons	BRL	mg/Kg	60

QC Surrogate Compound	Recovery	QC Limits
ortho-Terphenyl	**82 %**	60 - 140 %

Method Reference: Comparison of Waterborne Petroleum Oils by Gas Chromatography, Volume 11.02, Water, American Society for Testing and Materials (1990). Analytical protocol modified by use of an internal standard. Results are quantified on the basis of 5α–androstane. Sample preparation protocol modified by use of microwave accelerated solvent extraction. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **EPA Method 8082**
QC Batch ID: **PB-1696-M**
Matrix: **Soil**
Units: **ug/Kg**

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits
53469-21-9	Aroclor 1242	330	290	**86%**	60 - 140 %

QC Surrogate Compound	Recovery	QC Limits
Tetrachloro-*m*-xylene	**84%**	25 - 121 %
Decachlorobiphenyl	**87%**	28 - 138 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Results are calculated on a dry weight basis.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8082**
QC Batch ID: **PB-1696-M**
Matrix: **Soil**

CAS Number	Analyte	Concentration	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL	ug/Kg	80
11104-28-2	Aroclor 1221	BRL	ug/Kg	80
11141-16-5	Aroclor 1232	BRL	ug/Kg	80
53469-21-9	Aroclor 1242	BRL	ug/Kg	80
12672-29-6	Aroclor 1248	BRL	ug/Kg	80
11097-69-1	Aroclor 1254	BRL	ug/Kg	80
11096-82-5	Aroclor 1260	BRL	ug/Kg	80

QC Surrogate Compound	Recovery	QC Limits
Tetrachloro-*m*-xylene	**69 %**	25 - 121 %
Decachlorobiphenyl	**81 %**	28 - 138 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Analyte list as Aroclor analytes formerly specified by EPA Method 8080A. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution, percent moisture and sample size.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **Metals**
Matrix: **Soil**

CAS Number	Analyte	Method	QC Batch	Units	Spiked	Measured	Recovery	QC Limits
7440-38-2	Arsenic	6010B	MM-1836-S	mg/Kg	100	85	85 %	80-120 %
7440-43-9	Cadmium	6010B	MM-1836-S	mg/Kg	100	82	82 %	80-120 %
7440-47-3	Chromium	6010B	MM-1836-S	mg/Kg	100	86	86 %	80-120 %
7439-92-1	Lead	6010B	MM-1836-S	mg/Kg	100	82	82 %	80-120 %
7439-97-6	Mercury	7471A	MP-1389-S	mg/Kg	0.17	0.17	104 %	80-120 %

Method References: Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **Metals**
Matrix: **Soil**

CAS Number	Analyte	Result	Units	Reporting Limit	QC Batch	Method
7440-38-2	Arsenic	BRL	mg/Kg	5.0	MM-1836-SB	6010B
7440-43-9	Cadmium	BRL	mg/Kg	0.50	MM-1836-SB	6010B
7440-47-3	Chromium	BRL	mg/Kg	10	MM-1836-SB	6010B
7439-92-1	Lead	BRL	mg/Kg	10	MM-1836-SB	6010B
7439-97-6	Mercury	BRL	mg/Kg	0.033	MP-1389-S	7471A

Method References: Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates result, if any, is below reporting limit for analyte. Reporting limit is the lowest value that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample dilution and sample size.

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states. Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT, Department of Health Services, PH-0586

Categories: Potable Water, Wastewater, Solid Waste and Soil
http://www.dph.state.ct.us/BRS/Environmental_Lab/OutStateLabList.htm

FLORIDA, Department of Health, Bureau of Laboratories, E87643

Categories: SDWA, CWA, RCRA/CERCLA
http://www.floridadep.org/labs/qa/dohforms.htm

MAINE, Department of Human Services, MA103

Categories: Drinking Water and Wastewater
http://www.state.me.us/dhs/eng/water/Compliance.htm

MASSACHUSETTS, Department of Environmental Protection, M-MA-103

Categories: Potable Water and Non-Potable Water
http://www.state.ma.us/dep/bspt/wes/files/certlabs.pdf

NEW HAMPSHIRE, Department of Environmental Services, 202703

Categories: Drinking Water and Wastewater
http://www.des.state.nh.us/asp/NHELAP/labsview.asp

NEW YORK, Department of Health, 11754

Categories: Potable Water, Non-Potable Water and Solid Waste
http://www.wadsworth.org/labcert/elap/comm.html

PENNSYLVANIA, Department of Environmental Protection, 68-665

Environmental Laboratory Registration (Non-drinking water and Non-wastewater)
http://www.dep.state.pa.us/Labs/Registered/

RHODE ISLAND, Department of Health, 54

Categories: Surface Water, Air, Wastewater, Potable Water, Sewage
http://www.healthri.org/labs/labsCT_MA.htm

U.S. Department of Agriculture, Soil Permit, S-53921

Foreign soil import permit

VERMONT, Department of Environmental Conservation, Water Supply Division

Category: Drinking Water
http://www.vermontdrinkingwater.org/wsops/labtable.PDF

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY
Massachusetts Certification # M-MA138
Rhode Island # 98 Maine # MA138
Florida # E87600 / 87562
New Hampshire # 2538
Connecticut # PH-0777
New York # 11393

GeoInsight, Inc.
319 Littleton Road
Westford, MA 01886

Attn: Kevin Trainer

Friday, April 18, 2003

Report Status:
- ☐ Final Report
- ☐ Re-issued Report
- ☐ Revised Report

Client Project Number: 2491 **Location:** 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD78489	CPS-1	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78490	CPS-2	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78491	CPS-3	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78492	CPS-4	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78493	CPS-5	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78494	CPS-6	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78495	CPS-7	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78496	CPS-8	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78497	CPS-9	Polychlorinated Biphenyls by GC Ultrasonic Extraction

ENVIRONMENTAL ANALYSES
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SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Client Project Number: 2491 **Location:** 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD78497	CPS-9	% Solids
AD78498	CPS-10	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78499	CPS-11D	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78500	CPS-12	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78501	CPS-13	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78502	CPS-14	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids Duplicate PCBs by GC
AD78503	CPS-15	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78504	CPS-16	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78505	CPS-5D	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78506	CPS-7D	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids Duplicate PCBs by GC
AD78507	SPS-1	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78508	SPS-2	Ultrasonic Extraction % Solids

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SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Client Project Number: 2491 **Location:** 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD78508	SPS-2	PAHs by GC/MS
AD78509	SPS-3	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78510	SPS-4	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78511	SPS-5	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78512	SPS-6	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78513	SPS-7	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78514	SPS-8	Ultrasonic Extraction % Solids PAHs by GC/MS

I attest that all information contained within this report has been reviewed for accuracy and checked against all quality control requirements outlined in each applicable method and meet the requirements of NELAC including any data obtained from a subcontract laboratory. Please note that all solid matrix sample results are calculated on a dry weight basis unless otherwise specified.

This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

ENVIRONMENTAL ANALYSES

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SPECTRUM ANALYTICAL, INC.

Laboratory Report

Location: 60 Olympia - Woburn, MA
Client: GEOINS

Client Project No: 2491
Submittal Date: 4/11/2003

Lab ID No: AD78489 **Client Id:** CPS-1 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1260	32	ug/Kg	32	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	97	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	70	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	87.3	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78490 **Client Id:** CPS-2 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1260	50	ug/Kg	31	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	79	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	59	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	91.9	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78491 **Client Id:** CPS-3 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1260	40	ug/Kg	28	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	107	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	81	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	92.4	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78492 **Client Id:** CPS-4 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1260	860	ug/Kg	32	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	85	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	86	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	91.5	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78493 **Client Id:** CPS-5 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1260	21,500	ug/Kg	250	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	68	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	90	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	94.1	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78494 **Client Id:** CPS-6 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	7,400	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	88	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	64	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	89.4	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78495 **Client Id:** CPS-7 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	90	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	90	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	92.3	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78496 **Client Id:** CPS-8 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	87	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	88	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	87.2	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78497 **Client Id:** CPS-9 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1260	6,900	ug/Kg	250	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	75	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	45	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	88.9	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78498 **Client Id:** CPS-10 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1260	3,900	ug/Kg	35	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	105	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	53	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	85.8	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78499 **Client Id:** CPS-11D **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	111	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	68	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	88.4	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78500 **Client Id:** CPS-12 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	62	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	95	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	87.0	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78501 **Client Id:** CPS-13 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	26,500	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	81	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	67	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	92.8	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78502 **Client Id:** CPS-14 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Duplicate PCBs by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	5,000	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	90	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	52	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	3,000	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	81	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	55	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	85.0	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78503 **Client Id:** CPS-15 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	88	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	65	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	88.1	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78504 **Client Id:** CPS-16 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	89	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	43	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	85.1	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78505 **Client Id:** CPS-5D **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1260	460	ug/Kg	28	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	74	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	74	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	95.6	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78506 **Client Id:** CPS-7D **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Duplicate PCBs by GC						
PCB-1016	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	71	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	102	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	72	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	51	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	87.1	%		4/14/2003	BH	SM2540 B Mod.

04140944 (m)

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Special Handling:
☐ Standard TAT - 7 to 10 business days
☒ Rush TAT - Date Needed: 4/16/03
· All TATs subject to laboratory approval.
· Min. 24-hour notification needed for rushes.
· All samples are disposed of after 60 days unless otherwise instructed.

INO#23040515 Page 1 of 3

Report To: GEOINSIGHT
319 LITTLETON RD
WESTFORD, MA 01886

Project Mgr.: KEVIN TRAINER

Invoice To: GEOINSIGHT
319 LITTLETON RD
WESTFORD, MA 01886

P.O. No.: 2491 RQN: 4054

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): KDT

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

	Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		Analyses: PCB's 8082								Notes:
AP	78489	CPS-1	4/10/03	11:10	G	SO			1				X								
	78490	CPS-2		11:22	G	SO			1				X								
	78491	CPS-3		11:30	G	SO			1				X								
	78492	CPS-4		11:32	G	SO			1				X								
	78493	CPS-5		12:00	G	SO			1				X								
	78494	CPS-6		12:22	G	SO			1				X								
	78495	CPS-7		12:30	G	SO			1				X								
	78496	CPS-8		12:35	G	SO			1				X								
	78497	CPS-9		12:55	G	SO			1				X								
	78498	CPS-10		1:00	G	SO			1				X								

Relinquished by:	Received by:	Date:	Time:
[signature]	E. Gendron	4/11/03	11:10
[signature]	[signature]	4-11-03	1548

☐ Fax results when available to (978) 692-1115
☐ E-mail results when available to _____
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ 3.5°C

Fridge

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04140941

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CHAIN OF CUSTODY RECORD

Page 2 of 3

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☒ Rush TAT - Date Needed: 4/16/03
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Report To: SAME

Project Mgr.:

Invoice To: SAME

P.O. No.: RQN:

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): KDT

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9= 10=

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= X2= X3=

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		PCB's 8082								Notes:
AD 78499	CPS-11D	4/10/03	1:10	G	SO			1				X								
78500	CPS-12	↓	1:20	G	SO			1				X								
78501	CPS-13	↓	1:30	G	SO			1				X								
78502	CPS-14	↓	1:35	G	SO			1				X								
78503	CPS-15	↓	1:40	G	SO			1				X								
78504	CPS-16	↓	1:43	G	SO			1				X								
78505	CPS-5D	↓	1:50	G	SO			1				X								
78506	CPS-7D	↓	2:00	G	SO			1				X								
7																				

☐ Fax results when available to (978) 692-1115
☐ E-mail results when available to
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ 3.5°C

Relinquished by:	Received by:	Date:	Time:
[signature]	E M Gendron	4/11/03	11:10
E Sm G	[signature]	4-11-03	1540

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CHAIN OF CUSTODY RECORD

Page 3 of 3

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☒ Rush TAT - Date Needed: 4/16/03
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Report To: SAME

Project Mgr.:

Invoice To: SAME

P.O. No.: RQN:

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): KDT

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9= 10=

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= X2= X3=

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	PAH's 8270							Notes:
785087	SPS-1	4/10/03	3:05	G	SO			1			X							
78508	SPS-2		3:15	G	SO			1			X							
785089	SPS-3		3:30	G	SO			1			X							
785109	SPS-4		3:35	G	SO			1			X							
785110	SPS-5		3:40	G	SO			1			X							
785 12	SPS-6		3:50	G	SO			1			X							
785 13	SPS-7		4:00	G	SO			1			X							
785 14	SPS-8		4:10	G	SO			1			X							

Relinquished by:	Received by:	Date:	Time:
[illegible]	E. Henderson	4/11/03	11:10
EMM	[illegible]	4-11-03	1545

☐ Fax results when available to (978) 692-1115
☐ E-mail results when available to
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ 3.5 °C

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Definitions

Equipment Blank: A sample of analyte-free media, which has been used to rinse the sampling equipment. It is collected after completion of decontamination and prior to sampling. This blank is useful in documenting adequate decontamination of sampling equipment.

Field Duplicate: Independent samples, which are collected as close as possible to the same point in space and time. They are two separate samples taken from the same source, stored in separate containers, and analyzed independently. These duplicates are useful in documenting the precision of the sampling process.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Matrix Spike Duplicates: Intra-laboratory split of samples spiked with identical concentrations of target analyte(s). The spiking occurs prior to sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Practical Quantitation Limit (PQL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. The PQL is generally 5 to 10 times the MDL. However, it may be nominally chosen within these guidelines to simplify data reporting. For many analytes the PQL analyte concentration is selected as the lowest non-zero standard in the calibration curve. Sample PQLs are highly matrix-dependent.

Precision: The agreement among a set of replicate measurements without assumption of knowledge of the true value. Precision is estimated by means of duplicate/replicate analyses. These samples should contain concentrations of analyte above the MDL, and may involve the use of matrix spikes. The Relative Percent Difference (%RPD) is used to estimate the precision between two samples.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Trip Blank: A sample of analyte-free media taken from the laboratory to the sampling site and returned to the laboratory unopened. A trip blank is used to document contamination attributable to shipping and field handling procedures. This type of blank is useful in documenting contamination of volatile organic samples.

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Massachusetts Certification # M-MA138
Rhode Island # 98 Maine # MA138
Florida # E87600 / 87562
New Hampshire # 2538
Connecticut # PH-0777
New York # 11393

ACCREDITED IN ACCORDANCE WITH nelac

GeoInsight, Inc.
319 Littleton Road
Westford, MA 01886

Attn: Kevin Trainer

Friday, April 18, 2003

Report Status:
- ☐ Final Report
- ☐ Re-issued Report
- ☐ Revised Report

Client Project Number: 2491

Location: 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD78489	CPS-1	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78490	CPS-2	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78491	CPS-3	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78492	CPS-4	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78493	CPS-5	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78494	CPS-6	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78495	CPS-7	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78496	CPS-8	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78497	CPS-9	Polychlorinated Biphenyls by GC Ultrasonic Extraction

ENVIRONMENTAL ANALYSES
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Client Project Number: 2491 **Location:** 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD78497	CPS-9	% Solids
AD78498	CPS-10	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78499	CPS-11D	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78500	CPS-12	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78501	CPS-13	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78502	CPS-14	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids Duplicate PCBs by GC
AD78503	CPS-15	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78504	CPS-16	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78505	CPS-5D	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD78506	CPS-7D	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids Duplicate PCBs by GC
AD78507	SPS-1	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78508	SPS-2	Ultrasonic Extraction % Solids

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SPECTRUM ANALYTICAL, INC.
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HANIBAL TECHNOLOGY

Client Project Number: 2491 **Location:** 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD78508	SPS-2	PAHs by GC/MS
AD78509	SPS-3	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78510	SPS-4	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78511	SPS-5	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78512	SPS-6	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78513	SPS-7	Ultrasonic Extraction % Solids PAHs by GC/MS
AD78514	SPS-8	Ultrasonic Extraction % Solids PAHs by GC/MS

I attest that all information contained within this report has been reviewed for accuracy and checked against all quality control requirements outlined in each applicable method and meet the requirements of NELAC including any data obtained from a subcontract laboratory. Please note that all solid matrix sample results are calculated on a dry weight basis unless otherwise specified.

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Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

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SPECTRUM ANALYTICAL, INC.

Laboratory Report

Location: 60 Olympia - Woburn, MA
Client: GEOINS

Client Project No: 2491
Submittal Date: 4/11/2003

Lab ID No: AD78489 **Client Id:** CPS-1 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1260	32	ug/Kg	32	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	97	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	70	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	87.3	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78490 **Client Id:** CPS-2 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1260	50	ug/Kg	31	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	79	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	59	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	91.9	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78491 **Client Id:** CPS-3 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1260	40	ug/Kg	28	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	107	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	81	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	92.4	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78492 **Client Id:** CPS-4 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1260	860	ug/Kg	32	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	85	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	86	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	91.5	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78493 **Client Id:** CPS-5 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1260	21,500	ug/Kg	250	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	68	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	90	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	94.1	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78494 **Client Id:** CPS-6 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	7,400	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	88	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	64	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	89.4	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78495 **Client Id:** CPS-7 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	90	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	90	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	92.3	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78496 **Client Id:** CPS-8 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	87	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	88	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	87.2	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78497 **Client Id:** CPS-9 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/15/2003	TG	SW846 8082
PCB-1260	6,900	ug/Kg	250	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	75	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	45	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	88.9	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78498 **Client Id:** CPS-10 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	35	4/15/2003	TG	SW846 8082
PCB-1260	3,900	ug/Kg	35	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	105	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	53	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	85.8	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78499 **Client Id:** CPS-11D **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	34	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	111	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	68	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	88.4	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78500 **Client Id:** CPS-12 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	32	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	62	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	95	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	87.0	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78501 **Client Id:** CPS-13 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	26,500	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	81	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	67	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	92.8	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78502 **Client Id:** CPS-14 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Duplicate PCBs by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	5,000	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	90	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	52	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	3,000	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	81	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	55	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	85.0	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78503 **Client Id:** CPS-15 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	88	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	65	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	88.1	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78504 **Client Id:** CPS-16 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/16/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	89	ug/Kg	0.00	4/16/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	43	ug/Kg	0.00	4/16/2003	TG	SW846 8082
% Solids	85.1	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78505 **Client Id:** CPS-5D **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	28	4/15/2003	TG	SW846 8082
PCB-1260	460	ug/Kg	28	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	74	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	74	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	95.6	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78506 **Client Id:** CPS-7D **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Duplicate PCBs by GC						
PCB-1016	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	30	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	71	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	102	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	31	4/15/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	72	ug/Kg	0.00	4/15/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	51	ug/Kg	0.00	4/15/2003	TG	SW846 8082
% Solids	87.1	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78507 **Client Id:** SPS-1 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Fluoranthene	220	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Pyrene	200	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Chrysene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	130	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	70	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	78	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	81.9	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78508 **Client Id:** SPS-2 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Fluoranthene	370	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Pyrene	300	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	160	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Chrysene	210	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	260	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	150	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	200	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	111	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	77	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	82	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	66.9	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78509 **Client Id:** SPS-3 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Fluoranthene	770	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Pyrene	710	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	410	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Chrysene	460	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	580	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	350	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	420	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	190	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	210	ug/Kg	118	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	68	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	80	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	69.7	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78510 **Client Id:** SPS-4 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Acenaphthylene	380	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Phenanthrene	240	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Anthracene	390	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Fluoranthene	1,700	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Pyrene	1,700	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	930	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Chrysene	1,000	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	1,100	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	750	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	1,000	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	470	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	118	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	490	ug/Kg	118	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	71	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	82	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	71.3	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78511 **Client Id:** SPS-5 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Fluoranthene	310	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Pyrene	250	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	160	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Chrysene	190	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	250	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	170	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	100	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	72	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	81	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	78.0	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78512 **Client Id:** SPS-6 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Fluoranthene	250	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Pyrene	200	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Chrysene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	115	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	69	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	76	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	75.5	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78513 **Client Id:** SPS-7 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	105	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	105	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Acenaphthylene	260	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Phenanthrene	150	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Anthracene	180	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Fluoranthene	1,000	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Pyrene	930	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	520	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Chrysene	610	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	810	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	510	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	510	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	280	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	105	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	280	ug/Kg	105	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	64	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	72	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	77.1	%		4/14/2003	BH	SM2540 B Mod.

Lab ID No: AD78514 **Client Id:** SPS-8 **Collection Date:** 4/10/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/15/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Fluoranthene	280	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Pyrene	230	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Benzo (a) anthracene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Chrysene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Benzo (a) pyrene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	122	4/15/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	69	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	79	ug/Kg	0.000	4/15/2003	MSL	SW846 8270C
% Solids	74.0	%		4/14/2003	BH	SM2540 B Mod.

Reviewed by:

Quality Service/Quality Assurance Depts.

Validated by:

President/Laboratory Director

4/17/2003

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Featuring
HANIBAL TECHNOLOGY

Laboratory Report Supplement
References

SW 846	Test Methods for Evaluating Solid Waste. Third edition, 1998
40 CFR 136	Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act
40 CFR 141	National Primary Drinking Water Regulations
40 CFR 143	National Secondary Drinking Water Regulations
40 CFR 160	Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), Good Laboratory Practice Standards
APHA-AWWA-WPCF	Standard Methods for the Examination of Water and Wastewater. 19th edition, 1995
ASTM D 3328	Standard Methods for the Comparison of Waterborne Petroleum Oils by Gas Chromatography
EPA 540/G-87/003	Data Quality Objectives for Remediation Response Activities, Development Process
EPA 600/4-79-012	Quality Assurance Handbook for Analytical Quality Control in Water and Wastewater Laboratories
EPA 600/4-79-019	Handbook for Analytical Quality Control in Water and Wastewater Laboratories
EPA 600/4-79-020	Method for the Chemical Analysis of Water and Wastes
EPA 600/4-82-057	Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater
EPA 600/4-85/056	Choosing Cost-Effective QA/QC Programs for Chemical Analysis
EPA 600/4-88/039	Method for the Determination of Organic Compounds in Drinking Water
CT ETPH	Analysis of Extractable Total Petroleum Hydrocarbons (ETPH)
MADEP EPH	Method for the Determination of Extractable Petroleum Hydrocarbons (EPH)
MADEP VPH	Method for the Determination of Volatile Petroleum Hydrocarbons (VPH)
QAMS 004/80	Guidelines and Specifications for Preparing Quality Assurance Program Plans, USEPA Office of Monitoring System and Quality Assurance
GC-D-52-77	Oil Spill Identification System

Acronyms & Abbreviations

AA	Atomic Absorption
ASTM	American Society for Testing and Materials
BOD	Biological Oxygen Demand
°C	degree(s) Celsius
COD	Chemical Oxygen Demand
CMR	Code of Massachusetts Regulations
DEP	Department of Environmental Protection
DI	De-ionized
DO	Dissolved Oxygen
EPA	Environmental Protection Agency
EPH	Extractable Petroleum Hydrocarbons
FID	Flame Ionization Detector
GC	Gas Chromatograph
GC / MS	Gas Chromatograph / Mass Spectrometer
ICP	Inductively Coupled Plasma
Id	Identification
MCL	Maximum Contaminant Level
MDL	Minimum Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NTU	Nephelometric Turbidity Units
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PID	Photo Ionization Detector
PQL	Practical Quantitation Limit
R	Recovery (%R: Percent Recovery)
RSD	Relative Standard Deviation
SM	Standard Method
SR	Surrogate Recovery (%SR)
SW	Solid Waste
THM	Trihalomethane(s)
TOC	Total Organic Carbon
TOX	Total Organic Halogen
TPH	Total Petroleum Hydrocarbons
VOC	Volatile Organic Compound
VPH	Volatile Petroleum Hydrocarbons

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CHAIN OF CUSTODY RECORD

Special Handling:
☐ Standard TAT - 7 to 10 business days
☒ Rush TAT - Date Needed: 4/16/03
· All TATs subject to laboratory approval.
· Min. 24-hour notification needed for rushes.
· All samples are disposed of after 60 days unless otherwise instructed.

INO#23040515 Page 1 of 3

Report To: GEOINSIGHT
319 LITTLETON RD
WESTFORD, MA 01886

Project Mgr.: KEVIN TRAINER

Invoice To: GEOINSIGHT
319 LITTLETON RD
WESTFORD, MA 01886

P.O. No.: 2491 RQN: 4054

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): KDT

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=____ 10=____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=____ X2=____ X3=____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		PCB's 8082								Notes:
78489	CPS-1	4/10/03	11:10	G	SO			1				X								
78490	CPS-2		11:22	G	SO			1				X								
78491	CPS-3		11:30	G	SO			1				X								
78492	CPS-4		11:32	G	SO			1				X								
78493	CPS-5		12:00	G	SO			1				X								
78494	CPS-6		12:22	G	SO			1				X								
78495	CPS-7		12:30	G	SO			1				X								
78496	CPS-8		12:35	G	SO			1				X								
78497	CPS-9		12:55	G	SO			1				X								
78498	CPS-10		1:00	G	SO			1				X								

Relinquished by:	Received by:	Date:	Time:
[signature]	E. Gendron	4/11/03	11:10
[signature]	[signature]	4-11-03	1548

☐ Fax results when available to (978) 692-1115
☐ E-mail results when available to ____
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ 3.5°C

Fridge

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041409641

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CHAIN OF CUSTODY RECORD

Special Handling:
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- ☒ Rush TAT - Date Needed: 4/16/03
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Page 2 of 3

Report To: SAME

Project Mgr.:

Invoice To: SAME

P.O. No.: RQN:

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): KDT

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9= 10=

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= X2= X3=

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	PCB's 8082								Notes:
78499	CPS-11D	4/10/03	1:10	G	So			1			X								
78500	CPS-12		1:20	G	So			1			X								
78501	CPS-13		1:30	G	So			1			X								
78502	CPS-14		1:35	G	So			1			X								
78503	CPS-15		1:40	G	So			1			X								
78504	CPS-16		1:43	G	So			1			X								
78505	CPS-5D		1:50	G	So			1			X								
78506	CPS-7D		2:00	G	So			1			X								

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	4/11/03	11:10
[signature]	[signature]	4-11-03	1540

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Condition upon Receipt: ☐ Iced ☐ Ambient ☐ 3.9°C

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04140944

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CHAIN OF CUSTODY RECORD

Page 3 of 3

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☒ Rush TAT - Date Needed: 4/10/03
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Report To: SAME

Project Mgr.:

Invoice To: SAME

P.O. No.: RQN:

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): KDT

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9= 10=

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= X2= X3=

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	PAH'S 8270								Notes:
AND 785067	SPS-1	4/10/03	3:05	6	SO			1			X								
78508	SPS-2		3:15	6	SO			1			X								
715089	SPS-3		3:30	6	SO			1			X								
785109	SPS-4		3:35	6	SO			1			X								
785110	SPS-5		3:40	6	SO			1			X								
785 12	SPS-6		3:50	6	SO			1			X								
785 13	SPS-7		4:00	6	SO			1			X								
785 14	SPS-8		4:10	6	SO			1			X								

Relinquished by:	Received by:	Date:	Time:
[signature]	E. Gendron	4/11/03	11:10
EMM	MTW	4-11-03	1545

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☐ E-mail results when available to
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ 3.5 °C

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Massachusetts Certification # M-MA138
Rhode Island # 98 Maine # MA138
Florida # E87600 / 87562
New Hampshire # 2538
Connecticut # PH-0777
New York # 11393

GeoInsight, Inc.
319 Littleton Road
Westford, MA 01886

Attn: Kevin Trainer

Monday, April 28, 2003

Report Status:
- ☑ Final Report
- ☐ Re-issued Report
- ☐ Revised Report

Client Project Number: 2491 **Location:** 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD80955	CPS-23	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD80956	CPS-20	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD80957	CPS-24	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD80958	CPS-19	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD80959	CPS-21	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD80960	CPS-17	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD80961	CPS-18	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD80962	CPS-22	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids Duplicate PCBs by GC

ENVIRONMENTAL ANALYSES

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SPECTRUM ANALYTICAL, INC.
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Client Project Number: 2491 **Location:** 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested

I attest that all information contained within this report has been reviewed for accuracy and checked against all quality control requirements outlined in each applicable method and meet the requirements of NELAC including any data obtained from a subcontract laboratory. Please note that all solid matrix sample results are calculated on a dry weight basis unless otherwise specified.

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Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

ENVIRONMENTAL ANALYSES

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SPECTRUM ANALYTICAL, INC.

Laboratory Report

Location: 60 Olympia - Woburn, MA
Client: GEOINSIGHT

Client Project No: 2491
Submittal Date: 4/23/2003

Lab ID No: AD80955 **Client Id:** CPS-23 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	66	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	102	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	87.7	%		4/24/2003	BH	SM2540 B Mod.

Lab ID No: AD80956 **Client Id:** CPS-20 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	41	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	111	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	74.5	%		4/24/2003	BH	SM2540 B Mod.

Lab ID No: AD80957 **Client Id:** CPS-24 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	61	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	62	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	96.2	%		4/24/2003	BH	SM2540 B Mod.

Lab ID No: AD80958 **Client Id:** CPS-19 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	55	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	55	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	77.3	%		4/24/2003	BH	SM2540 B Mod.

Lab ID No: AD80959 **Client Id:** CPS-21 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	62	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	72	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	80.6	%		4/24/2003	BH	SM2540 B Mod.

Lab ID No: AD80960 **Client Id:** CPS-17 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	63	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	54	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	83.3	%		4/24/2003	BH	SM2540 B Mod.

Lab ID No: AD80961 **Client Id:** CPS-18 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	67	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	57	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	84.5	%		4/24/2003	BH	SM2540 B Mod.

Lab ID No: AD80962 **Client Id:** CPS-22 **Collection Date:** 4/22/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			4/25/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Duplicate PCBs by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	66	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	55	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	4/25/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	58	ug/Kg	0.00	4/25/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	56	ug/Kg	0.00	4/25/2003	TG	SW846 8082
% Solids	79.5	%		4/24/2003	BH	SM2540 B Mod.

Reviewed by:

Quality Service/Quality Assurance Depts.

Validated by:

President/Laboratory Director

4/28/2003

04240917

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Report To: GEOINSIGHT INC.
319 LITTLETON RD
WESTFORD MA 01886

Project Mgr.: KEVIN TRAINER

Invoice To: SAME
23041022

P.O. No.: 2491 RQN: 4054

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): KT

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		PCB 8082								Notes:
80955	CPS-23	4/22/03	10:40	G	SO			1				X								see attached approval
80956	CPS-20		10:10	G	SO			1				X								
80957	CPS-24		10:45	G	SO			1				X								
80958	CPS-19		10:00	G	SO			1				X								
80959	CPS-21		10:25	G	SO			1				X								
80960	CPS-17		9:40	G	SO			1				X								
80961	CPS-18		9:50	G	SO			1				X								
80962	CPS-22		10:35	G	SO			1				X								

☑ Fax results when available to (978) 692-1115
☐ E-mail results when available to _____
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ 5 °C

Relinquished by:	Received by:	Date:	Time:
Jared Sherman	Bergeron	4-23-03	11:30 AM
Bergeron	Jeremy Lunt	4/23/03	15:21

Ref.

Definitions

Equipment Blank: A sample of analyte-free media, which has been used to rinse the sampling equipment. It is collected after completion of decontamination and prior to sampling. This blank is useful in documenting adequate decontamination of sampling equipment.

Field Duplicate: Independent samples, which are collected as close as possible to the same point in space and time. They are two separate samples taken from the same source, stored in separate containers, and analyzed independently. These duplicates are useful in documenting the precision of the sampling process.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Matrix Spike Duplicates: Intra-laboratory split of samples spiked with identical concentrations of target analyte(s). The spiking occurs prior to sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Practical Quantitation Limit (PQL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. The PQL is generally 5 to 10 times the MDL. However, it may be nominally chosen within these guidelines to simplify data reporting. For many analytes the PQL analyte concentration is selected as the lowest non-zero standard in the calibration curve. Sample PQLs are highly matrix-dependent.

Precision: The agreement among a set of replicate measurements without assumption of knowledge of the true value. Precision is estimated by means of duplicate/replicate analyses. These samples should contain concentrations of analyte above the MDL, and may involve the use of matrix spikes. The Relative Percent Difference (%RPD) is used to estimate the precision between two samples.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Trip Blank: A sample of analyte-free media taken from the laboratory to the sampling site and returned to the laboratory unopened. A trip blank is used to document contamination attributable to shipping and field handling procedures. This type of blank is useful in documenting contamination of volatile organic samples.

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Massachusetts Certification # M-MA138
Rhode Island # 98 Maine # MA138
Florida # E87600 / 87562
New Hampshire # 2538
Connecticut # PH-0777
New York # 11393

GeoInsight, Inc.
319 Littleton Road
Westford, MA 01886

Attn: Mike Webster

Monday, June 09, 2003

Report Status:
- [x] Final Report
- [ ] Re-issued Report
- [ ] Revised Report

Client Project Number: 2491 **Location:** 60 Olympia-Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD90559	CPE-1	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90560	CPE-2	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90561	CPE-3	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90562	CPE-4	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids Duplicate PCBs by GC
AD90563	CPE-5	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90564	CPE-6	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90565	CPE-7	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90566	CPE-8	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90567	CPE-9	Polychlorinated Biphenyls by GC

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Client Project Number: 2491 **Location:** 60 Olympia-Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD90567	CPE-9	Ultrasonic Extraction % Solids
AD90568	CPE-10	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90569	CPE-11	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90570	CPE-12	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90571	CPE-13	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90572	CPE-14	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90573	CPE-15	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90574	CPE-16	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90575	CPE-17	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90576	CPE-18	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90577	CPE-19	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90578	CPE-9D	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids

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Client Project Number: 2491 **Location:** 60 Olympia-Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD90579	CPE-19D	Polychlorinated Biphenyls by GC
		Ultrasonic Extraction
		% Solids
AD90580	SPE-1	Ultrasonic Extraction
		% Solids
		PAHs by GC/MS
AD90581	SPE-2	Ultrasonic Extraction
		% Solids
		PAHs by GC/MS
AD90582	SPE-3	Ultrasonic Extraction
		% Solids
		PAHs by GC/MS
AD90583	SPE-4	Ultrasonic Extraction
		% Solids
		PAHs by GC/MS
		SW846 8270 Matrix Spike
		SW846 8270 Matrix Spike Dupli
AD90584	SPE-5	Ultrasonic Extraction
		% Solids
		PAHs by GC/MS
AD90585	SPE-6	Ultrasonic Extraction
		% Solids
		PAHs by GC/MS
AD90586	SPE-7	Ultrasonic Extraction
		% Solids
		PAHs by GC/MS
AD90587	SPE-7D	Ultrasonic Extraction
		% Solids
		PAHs by GC/MS
AD90588	SPE-8	Ultrasonic Extraction
		% Solids
		PAHs by GC/MS

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Client Project Number: 2491 **Location:** 60 Olympia-Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested

I attest that all information contained within this report has been reviewed for accuracy and checked against all quality control requirements outlined in each applicable method and meet the requirements of NELAC including any data obtained from a subcontract laboratory. Please note that all solid matrix sample results are calculated on a dry weight basis unless otherwise specified.

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Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

11 Almgren Drive • Agawam, Massachusetts 01001 • 1-800-789-9115 • 413-789-9018 • Fax 413-789-4076

SPECTRUM ANALYTICAL, INC.

Laboratory Report

Location: 60 Olympia-Woburn, MA
Client: GEOINSIGHT

Client Project No: 2491
Submittal Date: 6/4/2003

Lab ID No: AD90559 **Client Id:** CPE-1 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	39	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	39	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	39	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	39	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	39	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	39	6/6/2003	TG	SW846 8082
PCB-1260	220	ug/Kg	39	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	104	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	85	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	82.1	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90560 **Client Id:** CPE-2 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1260	3,800	ug/Kg	32	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	127	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	127	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	85.8	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90561 **Client Id:** CPE-3 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1260	26,200	ug/Kg	32	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	117	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	124	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	90.4	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90562 **Client Id:** CPE-4 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Duplicate PCBs by GC						
PCB-1016	Below det lim	ug/Kg	34	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	34	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	34	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	34	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	34	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	34	6/6/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	34	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	125	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	76	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	126	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	111	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	91.9	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90563 **Client Id:** CPE-5 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	129	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	114	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	95.0	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90564 **Client Id:** CPE-6 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	71	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	76	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	91.5	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90565 **Client Id:** CPE-7 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1260	250	ug/Kg	32	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	97	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	100	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	86.4	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90566 **Client Id:** CPE-8 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	104	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	75	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	88.2	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90567 **Client Id:** CPE-9 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1260	870	ug/Kg	31	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	73	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	94	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	90.3	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90568 **Client Id:** CPE-10 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1260	270	ug/Kg	29	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	98	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	100	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	94.6	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90569 **Client Id:** CPE-11 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	33	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	33	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	33	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	33	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	33	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	33	6/6/2003	TG	SW846 8082
PCB-1260	310	ug/Kg	33	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	91	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	68	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	90.1	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90570 **Client Id:** CPE-12 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1260	1,200	ug/Kg	30	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	65	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	91	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	89.0	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90571 **Client Id:** CPE-13 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1260	19,600	ug/Kg	250	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	122	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	101	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	90.1	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90572 **Client Id:** CPE-14 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1260	22,700	ug/Kg	250	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	129	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	76	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	95.2	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90573 **Client Id:** CPE-15 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1260	1,800	ug/Kg	250	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	115	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	118	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	92.1	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90574 **Client Id:** CPE-16 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1260	2,800	ug/Kg	250	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	103	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	87	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	92.0	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90575 **Client Id:** CPE-17 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1260	270	ug/Kg	32	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	103	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	63	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	93.6	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90576 **Client Id:** CPE-18 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1260	620	ug/Kg	30	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	94	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	75	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	92.1	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90577 **Client Id:** CPE-19 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1260	580	ug/Kg	32	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	91	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	94	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	91.6	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90578 **Client Id:** CPE-9D **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1260	980	ug/Kg	31	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	85	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	116	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	89.9	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90579 **Client Id:** CPE-19D **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1260	440	ug/Kg	30	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	79	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	89	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	91.9	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90588 **Client Id:** SPE-8 **Collection Date:** 6/4/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	am	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Fluoranthene	1,100	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Pyrene	1,100	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Benzo (a) anthracene	700	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Chrysene	820	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	920	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	580	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Benzo (a) pyrene	720	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	340	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	340	ug/Kg	160	6/9/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	70	ug/Kg	0.000	6/9/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	89	ug/Kg	0.000	6/9/2003	MSL	SW846 8270C
% Solids	83.2	%		6/5/2003	BH	SM2540 B Mod.

Reviewed by:

Quality Service/Quality Assurance Depts.

Validated by:

President/Laboratory Director

6/9/2003

SPECTRUM ANALYTICAL, INC.

Laboratory QC Report

Matrix Spike

Lab ID No: AD90583 **Matrix** Soil

Parameter	% Recovery	Start Date	End Date	Analyst	Method
Semivolatile Organic Compounds					
SW846 8270 Matrix Spike					
Acenapthene	70	6/6/2003	6/6/2003	MSL	SW846 8270C
1,4-Dichlorobenzene	58	6/6/2003	6/6/2003	MSL	SW846 8270C
2,4-Dinitrotoluene	66	6/6/2003	6/6/2003	MSL	SW846 8270C
N-nitrosodi-n-propylamine	64	6/6/2003	6/6/2003	MSL	SW846 8270C
Pyrene	82	6/6/2003	6/6/2003	MSL	SW846 8270C
1,2,4-Trichlorobenzene	60	6/6/2003	6/6/2003	MSL	SW846 8270C
4-Chloro-3-Methylphenol	81	6/6/2003	6/6/2003	MSL	SW846 8270C
2-Chlorophenol	65	6/6/2003	6/6/2003	MSL	SW846 8270C
4-Nitrophenol	81	6/6/2003	6/6/2003	MSL	SW846 8270C
Pentachlorophenol	72	6/6/2003	6/6/2003	MSL	SW846 8270C
Phenol	65	6/6/2003	6/6/2003	MSL	SW846 8270C

Reviewed by:

Quality Service/Quality Assurance Depts.

Validated by:

President/Laboratory Director

6/10/2003

SPECTRUM ANALYTICAL, INC.

Laboratory QC Report

Matrix Spike Duplicate

Location:
Client:
Lab ID No: AD90583
Client Id:

Client Project No:
Submittal Date: 6/4/2003
Collection Date: 6/4/2003
Matrix Soil

Parameter	% Recovery	% Difference	Start Date	End Date	Analyst	Method
Semivolatile Organic Compounds						
SW846 8270 Matrix Spike Duplicate						
Acenapthene	71	2	6/6/2003	6/6/2003	MSL	SW846 8270C
1,4-Dichlorobenzene	59	2	6/6/2003	6/6/2003	MSL	SW846 8270C
2,4-Dinitrotoluene	66	0	6/6/2003	6/6/2003	MSL	SW846 8270C
N-nitrosodi-n-propylamine	65	1	6/6/2003	6/6/2003	MSL	SW846 8270C
Pyrene	84	3	6/6/2003	6/6/2003	MSL	SW846 8270C
1,2,4-Trichlorobenzene	62	4	6/6/2003	6/6/2003	MSL	SW846 8270C
4-Chloro-3-Methylphenol	82	2	6/6/2003	6/6/2003	MSL	SW846 8270C
2-Chlorophenol	65	1	6/6/2003	6/6/2003	MSL	SW846 8270C
4-Nitrophenol	81	1	6/6/2003	6/6/2003	MSL	SW846 8270C
Pentachlorophenol	72	0	6/6/2003	6/6/2003	MSL	SW846 8270C
Phenol	69	6	6/6/2003	6/6/2003	MSL	SW846 8270C

Reviewed by:

Quality Service/Quality Assurance Depts.

Validated by:

President/Laboratory Director

6/10/2003

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Laboratory Report Supplement
References

SW 846	Test Methods for Evaluating Solid Waste. Third edition, 1998
40 CFR 136	Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act
40 CFR 141	National Primary Drinking Water Regulations
40 CFR 143	National Secondary Drinking Water Regulations
40 CFR 160	Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), Good Laboratory Practice Standards
APHA-AWWA-WPCF	Standard Methods for the Examination of Water and Wastewater. 19th edition, 1995
ASTM D 3328	Standard Methods for the Comparison of Waterborne Petroleum Oils by Gas Chromatography
EPA 540/G-87/003	Data Quality Objectives for Remediation Response Activities, Development Process
EPA 600/4-79-012	Quality Assurance Handbook for Analytical Quality Control in Water and Wastewater Laboratories
EPA 600/4-79-019	Handbook for Analytical Quality Control in Water and Wastewater Laboratories
EPA 600/4-79-020	Method for the Chemical Analysis of Water and Wastes
EPA 600/4-82-057	Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater
EPA 600/4-85/056	Choosing Cost-Effective QA/QC Programs for Chemical Analysis
EPA 600/4-88/039	Method for the Determination of Organic Compounds in Drinking Water
CT ETPH	Analysis of Extractable Total Petroleum Hydrocarbons (ETPH)
MADEP EPH	Method for the Determination of Extractable Petroleum Hydrocarbons (EPH)
MADEP VPH	Method for the Determination of Volatile Petroleum Hydrocarbons (VPH)
QAMS 004/80	Guidelines and Specifications for Preparing Quality Assurance Program Plans, USEPA Office of Monitoring System and Quality Assurance
GC-D-52-77	Oil Spill Identification System

Acronyms & Abbreviations

AA	Atomic Absorption	MS	Matrix Spike
ASTM	American Society for Testing and Materials	MSD	Matrix Spike Duplicate
BOD	Biological Oxygen Demand	NTU	Nephelometric Turbidity Units
°C	degree(s) Celsius	PAHs	Polynuclear Aromatic Hydrocarbons
COD	Chemical Oxygen Demand	PCBs	Polychlorinated Biphenyls
CMR	Code of Massachusetts Regulations	PID	Photo Ionization Detector
DEP	Department of Environmental Protection	PQL	Practical Quantitation Limit
DI	De-ionized	R	Recovery (%R: Percent Recovery)
DO	Dissolved Oxygen	RSD	Relative Standard Deviation
EPA	Environmental Protection Agency	SM	Standard Method
EPH	Extractable Petroleum Hydrocarbons	SR	Surrogate Recovery (%SR)
FID	Flame Ionization Detector	SW	Solid Waste
GC	Gas Chromatograph	THM	Trihalomethane(s)
GC / MS	Gas Chromatograph / Mass Spectrometer	TOC	Total Organic Carbon
ICP	Inductively Coupled Plasma	TOX	Total Organic Halogen
Id	Identification	TPH	Total Petroleum Hydrocarbons
MCL	Maximum Contaminant Level	VOC	Volatile Organic Compound
MDL	Minimum Detection Limit	VPH	Volatile Petroleum Hydrocarbons

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Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 3

Special Handling: (TCW) 6

☐ Standard TAT - 7 to 10 business days
☒ Rush TAT - Date Needed: 6/9
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Report To: GEOINSIGHT
319 LITTLETON RD
WESTFORD MA
01886
Project Mgr.: MIKE WEBSTER

Invoice To: GEOINSIGHT
INV#23060290
P.O. No.: RQN:

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): JS

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=____ 10=____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=____ X2=____ X3=____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		PCBs 8082								Notes:
90559	CPE-1	6/3/03	3:10	G	SO			1				X								
90560	CPE-2	↓	3:15	G	SO			1				X								
90561	CPE-3		3:20	G	SO			1				X								
90562	CPE-4		3:25	G	SO			1				X								run MS/MSD [illegible]
90563	CPE-5		3:30	G	SO			1				X								
90564	CPE-6		3:50	G	SO			1				X								
90565	CPE-7		4:00	G	SO			1				X								
90566	CPE-8		4:05	G	SO			1				X								
90567	CPE-9		4:10	G	SO			1				X								
90568	CPE-10	↓	4:15	G	SO			1				X								

☐ Fax results when available to (978) 692-1115
☐ E-mail results when available to ____
Condition upon Receipt: ☒ Iced ☐ Ambient ☐ 8 °C

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	6-4-03	11:55
[signature]	[signature]	6-4-03	13:05
[signature]	[signature]	6-4-03	15:30

Cooler

060050840

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Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 2 of 3

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☒ Rush TAT - Date Needed: 6/9
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Report To: GEOINSIGHT
319 LITTLETON RD
WESTFORD MA 01886
Project Mgr.: MIKE WEBSTER

Invoice To: SAME
P.O. No.: RQN:

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): JS

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9= 10=

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= X2= X3=

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	PCBs 8082	Notes:
90569	CPE-11	6/3/03	4:20	G	SO			1			X	
90570	CPE-12		4:23	G	SO			1			X	
90571	CPE-13		4:23	G	SO			1			X	
90572	CPE-14		4:35	G	SO			1			X	
90573	CPE-15		4:40	G	SO			1			X	
90574	CPE-16		4:45	G	SO			1			X	
90575	CPE-17		4:50	G	SO			1			X	
90576	CPE-18		4:55	G	SO			1			X	
90577	CPE-19		5:00	G	SO			1			X	
90578	CPE-9D		4:10	G	SO			1			X	

☐ Fax results when available to (978) 692-1115
☐ E-mail results when available to
Condition upon Receipt: ☑ Iced ☐ Ambient ☐ 8 °C

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	6-4-03	11:55
[signature]	[signature]	6-4-03	13:05
[signature]	[signature]	6-4-03	15:30

cooler

06050840

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HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 3 of 3

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☒ Rush TAT - Date Needed: 6/9
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Report To: GEOINSIGHT

Invoice To: SAME

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): JS

Project Mgr.:

P.O. No.: RQN:

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9= 10=

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= X2= X3=

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	PCBs 8082	PAHs 8270							Notes:
90579	CPE-19D	6/3/03	5:00	G	SO			1			X								
90580	SPE-1	6/4/03	10:45	G	SO			1				X							
90581	SPE-2		10:53	G	SO			1				X							
90582	SPE-3		10:57	G	SO			1				X							
90583	SPE-4		11:00	G	SO			1				X							Run MS/MSD per fc
90584	SPE-5		11:03	G	SO			1				X							
90585	SPE-6		11:07	G	SO			1				X							
90586	SPE-7		11:10	G	SO			1				X							
90587	SPE-7D		11:10	G	SO			1				X							
90588	SPE-8		11:15	G	SO			1				X							

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	6-4-03	11:55
[signature]	[signature]	6-4-03	13:05
[signature]	[signature]	6-4-03	1530

☐ Fax results when available to (978) - 692-1115
☐ E-mail results when available to
Condition upon Receipt: ☑ Iced ☐ Ambient ☐ 6 °C

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Massachusetts Certification # M-MA138
Rhode Island # 98 Maine # MA138
Florida # E87600 / 87562
New Hampshire # 2538
Connecticut # PH-0777
New York # 11393

ACCREDITED IN ACCORDANCE WITH

GeoInsight, Inc.
319 Littleton Road
Westford, MA 01886

Attn: Mike Webster

Monday, June 09, 2003

Report Status:
- [x] Final Report
- [ ] Re-issued Report
- [ ] Revised Report

Client Project Number: 2491

Location: 60 Olympia-Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD90559	CPE-1	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90560	CPE-2	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90561	CPE-3	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90562	CPE-4	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90563	CPE-5	Duplicate PCBs by GC Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90564	CPE-6	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90565	CPE-7	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90566	CPE-8	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90567	CPE-9	Polychlorinated Biphenyls by GC

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Client Project Number: 2491 **Location:** 60 Olympia-Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD90567	CPE-9	Ultrasonic Extraction % Solids Polychlorinated Biphenyls by GC
AD90568	CPE-10	Ultrasonic Extraction % Solids Polychlorinated Biphenyls by GC
AD90569	CPE-11	Ultrasonic Extraction % Solids Polychlorinated Biphenyls by GC
AD90570	CPE-12	Ultrasonic Extraction % Solids Polychlorinated Biphenyls by GC
AD90571	CPE-13	Ultrasonic Extraction % Solids Polychlorinated Biphenyls by GC
AD90572	CPE-14	Ultrasonic Extraction % Solids Polychlorinated Biphenyls by GC
AD90573	CPE-15	Ultrasonic Extraction % Solids Polychlorinated Biphenyls by GC
AD90574	CPE-16	Ultrasonic Extraction % Solids Polychlorinated Biphenyls by GC
AD90575	CPE-17	Ultrasonic Extraction % Solids Polychlorinated Biphenyls by GC
AD90576	CPE-18	Ultrasonic Extraction % Solids Polychlorinated Biphenyls by GC
AD90577	CPE-19	Ultrasonic Extraction % Solids Polychlorinated Biphenyls by GC
AD90578	CPE-9D	Ultrasonic Extraction % Solids Polychlorinated Biphenyls by GC

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Client Project Number: 2491 **Location:** 60 Olympia-Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD90579	CPE-19D	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD90580	SPE-1	Ultrasonic Extraction % Solids PAHs by GC/MS
AD90581	SPE-2	Ultrasonic Extraction % Solids PAHs by GC/MS
AD90582	SPE-3	Ultrasonic Extraction % Solids PAHs by GC/MS
AD90583	SPE-4	Ultrasonic Extraction % Solids PAHs by GC/MS SW846 8270 Matrix Spike SW846 8270 Matrix Spike Dupli
AD90584	SPE-5	Ultrasonic Extraction % Solids PAHs by GC/MS
AD90585	SPE-6	Ultrasonic Extraction % Solids PAHs by GC/MS
AD90586	SPE-7	Ultrasonic Extraction % Solids PAHs by GC/MS
AD90587	SPE-7D	Ultrasonic Extraction % Solids PAHs by GC/MS
AD90588	SPE-8	Ultrasonic Extraction % Solids PAHs by GC/MS

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SPECTRUM ANALYTICAL, INC.
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HANIBAL TECHNOLOGY

Client Project Number: 2491 **Location:** 60 Olympia-Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested

I attest that all information contained within this report has been reviewed for accuracy and checked against all quality control requirements outlined in each applicable method and meet the requirements of NELAC including any data obtained from a subcontract laboratory. Please note that all solid matrix sample results are calculated on a dry weight basis unless otherwise specified.

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Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

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SPECTRUM ANALYTICAL, INC.

Laboratory Report

Location: 60 Olympia-Woburn, MA
Client: GEOINSIGHT

Client Project No: 2491
Submittal Date: 6/4/2003

Lab ID No: AD90559 **Client Id:** CPE-1 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	39	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	39	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	39	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	39	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	39	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	39	6/6/2003	TG	SW846 8082
PCB-1260	220	ug/Kg	39	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	104	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	85	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	82.1	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90560 **Client Id:** CPE-2 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1260	3,800	ug/Kg	32	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	127	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	127	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	85.8	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90561 Client Id: CPE-3 **Collection Date: 6/3/2003 Matrix: Soil**

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1260	26,200	ug/Kg	32	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	117	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	124	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	90.4	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90562 Client Id: CPE-4 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Duplicate PCBs by GC						
PCB-1016	Below det lim	ug/Kg	34	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	34	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	34	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	34	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	34	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	34	6/6/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	34	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	125	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	76	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	126	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	111	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	91.9	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90563 **Client Id:** CPE-5 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	129	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	114	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	95.0	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90564 **Client Id:** CPE-6 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	71	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	76	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	91.5	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90565 **Client Id:** CPE-7 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1260	250	ug/Kg	32	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	97	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	100	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	86.4	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90566 **Client Id:** CPE-8 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	104	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	75	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	88.2	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90567 **Client Id:** CPE-9 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1260	870	ug/Kg	31	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	73	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	94	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	90.3	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90568 **Client Id:** CPE-10 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	29	6/6/2003	TG	SW846 8082
PCB-1260	270	ug/Kg	29	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	98	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	100	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	94.6	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90569 **Client Id:** CPE-11 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	33	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	33	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	33	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	33	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	33	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	33	6/6/2003	TG	SW846 8082
PCB-1260	310	ug/Kg	33	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	91	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	68	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	90.1	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90570 **Client Id:** CPE-12 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1260	1,200	ug/Kg	30	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	65	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	91	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	89.0	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90571 **Client Id:** CPE-13 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1260	19,600	ug/Kg	250	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	122	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	101	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	90.1	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90572 **Client Id:** CPE-14 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1260	22,700	ug/Kg	250	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	129	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	76	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	95.2	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90573 **Client Id:** CPE-15 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1260	1,800	ug/Kg	250	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	115	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	118	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	92.1	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90574 **Client Id:** CPE-16 **Collection Date:** 6/3/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/6/2003	TG	SW846 8082
PCB-1260	2,800	ug/Kg	250	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	103	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	87	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	92.0	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90575 Client Id: CPE-17 **Collection Date: 6/3/2003 Matrix: Soil**

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1260	270	ug/Kg	32	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	103	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	63	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	93.6	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90576 Client Id: CPE-18 **Collection Date: 6/3/2003 Matrix: Soil**

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1260	620	ug/Kg	30	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	94	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	75	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	92.1	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90577 Client Id: CPE-19 **Collection Date: 6/3/2003 Matrix: Soil**

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	32	6/6/2003	TG	SW846 8082
PCB-1260	580	ug/Kg	32	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	91	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	94	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	91.6	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90578 Client Id: CPE-9D **Collection Date: 6/3/2003 Matrix: Soil**

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	31	6/6/2003	TG	SW846 8082
PCB-1260	980	ug/Kg	31	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	85	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	116	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	89.9	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90579 Client Id: CPE-19D **Collection Date: 6/3/2003 Matrix: Soil**

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	30	6/6/2003	TG	SW846 8082
PCB-1260	440	ug/Kg	30	6/6/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	79	ug/Kg	0.00	6/6/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	89	ug/Kg	0.00	6/6/2003	TG	SW846 8082
% Solids	91.9	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90580 **Client Id:** SPE-1 **Collection Date:** 6/4/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	am	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	181	6/9/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	181	6/9/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Acenaphthylene	910	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Anthracene	690	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Fluoranthene	2,200	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Pyrene	2,900	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Benzo (a) anthracene	1,300	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Chrysene	1,500	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	1,600	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	1,000	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Benzo (a) pyrene	1,500	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	780	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	181	6/9/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	780	ug/Kg	181	6/9/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	74	ug/Kg	0.000	6/9/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	91	ug/Kg	0.000	6/9/2003	MSL	SW846 8270C
% Solids	78.1	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90581 **Client Id:** SPE-2 **Collection Date:** 6/4/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	am	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Fluoranthene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Pyrene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Benzo (a) anthracene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Chrysene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Benzo (a) pyrene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	199	6/6/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	40	ug/Kg	0.000	6/6/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	50	ug/Kg	0.000	6/6/2003	MSL	SW846 8270C
% Solids	80.9	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90582 **Client Id:** SPE-3 **Collection Date:** 6/4/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	am	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Fluoranthene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Pyrene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Benzo (a) anthracene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Chrysene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Benzo (a) pyrene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	192	6/6/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	73	ug/Kg	0.000	6/6/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	89	ug/Kg	0.000	6/6/2003	MSL	SW846 8270C
% Solids	84.3	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90583 **Client Id:** SPE-4 **Collection Date:** 6/4/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	am	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Fluoranthene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Pyrene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Benzo (a) anthracene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Chrysene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Benzo (a) pyrene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	91.0	6/6/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	68	ug/Kg	0.000	6/6/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	87	ug/Kg	0.000	6/6/2003	MSL	SW846 8270C
% Solids	91.8	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90584 **Client Id:** SPE-5 **Collection Date:** 6/4/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	am	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	168	6/6/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	168	6/6/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Fluoranthene	370	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Pyrene	370	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Benzo (a) anthracene	Below det lim	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Chrysene	260	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	290	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	Below det lim	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Benzo (a) pyrene	Below det lim	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	168	6/6/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	168	6/6/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	70	ug/Kg	0.000	6/6/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	89	ug/Kg	0.000	6/6/2003	MSL	SW846 8270C
% Solids	82.0	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90585 Client Id: SPE-6 **Collection Date: 6/4/2003 Matrix: Soil**

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	am	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	170	6/6/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	170	6/6/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Acenaphthylene	680	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Phenanthrene	390	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Anthracene	700	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Fluoranthene	3,500	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Pyrene	3,500	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Benzo (a) anthracene	1,800	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Chrysene	1,900	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	1,900	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	1,200	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Benzo (a) pyrene	1,500	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	700	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	170	6/6/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	710	ug/Kg	170	6/6/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	65	ug/Kg	0.000	6/6/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	84	ug/Kg	0.000	6/6/2003	MSL	SW846 8270C
% Solids	81.8	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90586 **Client Id:** SPE-7 **Collection Date:** 6/4/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	am	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Fluoranthene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Pyrene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Benzo (a) anthracene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Chrysene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Benzo (a) pyrene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	160	6/6/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	70	ug/Kg	0.000	6/6/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	89	ug/Kg	0.000	6/6/2003	MSL	SW846 8270C
% Solids	79.5	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90587 Client Id: SPE-7D **Collection Date: 6/4/2003 Matrix: Soil**

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	am	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Fluoranthene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Pyrene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Benzo (a) anthracene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Chrysene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Benzo (a) pyrene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	Below det lim	ug/Kg	167	6/9/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	68	ug/Kg	0.000	6/9/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	88	ug/Kg	0.000	6/9/2003	MSL	SW846 8270C
% Solids	79.6	%		6/5/2003	BH	SM2540 B Mod.

Lab ID No: AD90588 **Client Id:** SPE-8 **Collection Date:** 6/4/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/6/2003	am	SW846 3550B
Semivolatile Organic Compounds						
PAHs by GC/MS						
Naphthalene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
2-Methylnaphthalene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
1-Methylnaphthalene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Acenaphthylene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Acenaphthene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Fluorene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Phenanthrene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Anthracene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Fluoranthene	1,100	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Pyrene	1,100	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Benzo (a) anthracene	700	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Chrysene	820	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Benzo (b) fluoranthene	920	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Benzo (k) fluoranthene	580	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Benzo (a) pyrene	720	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Indeno (1,2,3-cd) pyrene	340	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Dibenzo (a,h) anthracene	Below det lim	ug/Kg	160	6/9/2003	MSL	SW846 8270C
Benzo (g,h,i) perylene	340	ug/Kg	160	6/9/2003	MSL	SW846 8270C
2-Fluorobiphenyl (%SR)	70	ug/Kg	0.000	6/9/2003	MSL	SW846 8270C
Terphenyl-d14 (%SR)	89	ug/Kg	0.000	6/9/2003	MSL	SW846 8270C
% Solids	83.2	%		6/5/2003	BH	SM2540 B Mod.

Reviewed by:

Quality Service/Quality Assurance Depts.

Validated by:

President/Laboratory Director

6/9/2003

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Laboratory Report Supplement

References

SW 846	Test Methods for Evaluating Solid Waste. Third edition, 1998
40 CFR 136	Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act
40 CFR 141	National Primary Drinking Water Regulations
40 CFR 143	National Secondary Drinking Water Regulations
40 CFR 160	Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), Good Laboratory Practice Standards
APHA-AWWA-WPCF	Standard Methods for the Examination of Water and Wastewater. 19th edition, 1995
ASTM D 3328	Standard Methods for the Comparison of Waterborne Petroleum Oils by Gas Chromatography
EPA 540/G-87/003	Data Quality Objectives for Remediation Response Activities, Development Process
EPA 600/4-79-012	Quality Assurance Handbook for Analytical Quality Control in Water and Wastewater Laboratories
EPA 600/4-79-019	Handbook for Analytical Quality Control in Water and Wastewater Laboratories
EPA 600/4-79-020	Method for the Chemical Analysis of Water and Wastes
EPA 600/4-82-057	Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater
EPA 600/4-85/056	Choosing Cost-Effective QA/QC Programs for Chemical Analysis
EPA 600/4-88/039	Method for the Determination of Organic Compounds in Drinking Water
CT ETPH	Analysis of Extractable Total Petroleum Hydrocarbons (ETPH)
MADEP EPH	Method for the Determination of Extractable Petroleum Hydrocarbons (EPH)
MADEP VPH	Method for the Determination of Volatile Petroleum Hydrocarbons (VPH)
QAMS 004/80	Guidelines and Specifications for Preparing Quality Assurance Program Plans, USEPA Office of Monitoring System and Quality Assurance
GC-D-52-77	Oil Spill Identification System

Acronyms & Abbreviations

AA	Atomic Absorption
ASTM	American Society for Testing and Materials
BOD	Biological Oxygen Demand
°C	degree(s) Celsius
COD	Chemical Oxygen Demand
CMR	Code of Massachusetts Regulations
DEP	Department of Environmental Protection
DI	De-ionized
DO	Dissolved Oxygen
EPA	Environmental Protection Agency
EPH	Extractable Petroleum Hydrocarbons
FID	Flame Ionization Detector
GC	Gas Chromatograph
GC / MS	Gas Chromatograph / Mass Spectrometer
ICP	Inductively Coupled Plasma
Id	Identification
MCL	Maximum Contaminant Level
MDL	Minimum Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NTU	Nephelometric Turbidity Units
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PID	Photo Ionization Detector
PQL	Practical Quantitation Limit
R	Recovery (%R: Percent Recovery)
RSD	Relative Standard Deviation
SM	Standard Method
SR	Surrogate Recovery (%SR)
SW	Solid Waste
THM	Trihalomethane(s)
TOC	Total Organic Carbon
TOX	Total Organic Halogen
TPH	Total Petroleum Hydrocarbons
VOC	Volatile Organic Compound
VPH	Volatile Petroleum Hydrocarbons

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CHAIN OF CUSTODY RECORD

Page 1 of 3

Special Handling: (tcw) 6

☐ Standard TAT - 7 to 10 business days
☒ Rush TAT - Date Needed: 6/9
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Report To: GEOINSIGHT
319 LITTLETON RD
WESTFORD MA
01886

Project Mgr.: MIKE WEBSTER

Invoice To: GEOINSIGHT
INV#23060290

P.O. No.: RQN:

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): JS

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8=$NaHSO_4$ 9= 10=

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1= X2= X3=

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	PCBs 8082	Notes:
90559	CPE-1	6/3/03	3:10	G	SO			1			X	
90560	CPE-2	↓	3:15	G	SO			1			X	
90561	CPE-3		3:20	G	SO			1			X	
90562	CPE-4		3:25	G	SO			1			X	run MS/MSD per fax
90563	CPE-5		3:30	G	SO			1			X	
90564	CPE-6		3:50	G	SO			1			X	
90565	CPE-7		4:00	G	SO			1			X	
90566	CPE-8		4:05	G	SO			1			X	
90567	CPE-9		4:10	G	SO			1			X	
90568	CPE-10	↓	4:15	G	SO			1			X	

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	6-4-03	11:55
[signature]	[signature]	6-4-03	13:05
[signature]	[signature]	6-4-03	15:30

☐ Fax results when available to (978) 692-1115
☐ E-mail results when available to
Condition upon Receipt: ☒ Iced ☐ Ambient ☐ 8 °C

Cooler

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CHAIN OF CUSTODY RECORD

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Page 2 of 3

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☒ Rush TAT - Date Needed: 6/9
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Report To: GEOINSIGHT
319 LITTLETON RD
WESTFORD MA 01886
Project Mgr.: MIKE WEBSTER

Invoice To: SAME
P.O. No.: RQN:

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): JS

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8=$NaHSO_4$ 9= 10=

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1= X2= X3=

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: PCBs 8082	Notes:
90569	CPE-11	6/3/03	4:20	G	SO			1			X	
90570	CPE-12		4:23	G	SO			1			X	
90571	CPE-13		4:23	G	SO			1			X	
90572	CPE-14		4:35	G	SO			1			X	
90573	CPE-15		4:40	G	SO			1			X	
90574	CPE-16		4:45	G	SO			1			X	
90575	CPE-17		4:50	G	SO			1			X	
90576	CPE-18		4:55	G	SO			1			X	
90577	CPE-19		5:00	G	SO			1			X	
90578	CPE-9D		4:10	G	SO			1			X	

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	6-4-03	11:55
[signature]	[signature]	6-4-03	13:05
[signature]	[signature]	6-4-03	15:30

☐ Fax results when available to (978) 692-1115
☐ E-mail results when available to
Condition upon Receipt: ☒ Iced ☐ Ambient ☐ 2 °C

Cooler

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CHAIN OF CUSTODY RECORD

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Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☒ Rush TAT - Date Needed: 6/9
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Report To: GEOINSIGHT

Project Mgr.:

Invoice To: SAME

P.O. No.: RQN:

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): JS

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8=$NaHSO_4$ 9= 10=

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1= X2= X3=

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		PCBs 8082	PAHs 8270							Notes:
90579	CPE-19D	6/3/03	5:00	6	SO			1				X								
90580	SPE-1	6/4/03	10:45	6	SO			1					X							
90581	SPE-2		10:53	6	SO			1					X							
90582	SPE-3		10:57	6	SO			1					X							
90583	SPE-4		11:00	6	SO			1					X							Run MS/MSD per fax
90584	SPE-5		11:03	6	SO			1					X							
90585	SPE-6		11:07	6	SO			1					X							
90586	SPE-7		11:10	6	SO			1					X							
90587	SPE-7D		11:10	6	SO			1					X							
90588	SPE-8		11:15	6	SO			1					X							

☐ Fax results when available to (978) -692-1115
☐ E-mail results when available to
Condition upon Receipt: ☒ Iced ☐ Ambient ☐ 0 °C

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	6-4-03	11:55
[signature]	[signature]	6-4-03	13:05
[signature]	[signature]	6-4-03	1570

cooler

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HANIBAL TECHNOLOGY

Massachusetts Certification # M-MA138
Rhode Island # 98 Maine # MA138
Florida # E87600 / 87562
New Hampshire # 2538
Connecticut # PH-0777
New York # 11393

ACCREDITED IN ACCORDANCE WITH nelac

GeoInsight, Inc.
319 Littleton Rd
Westford, MA 01886

Attn: Mike Webster

Tuesday, June 17, 2003

Report Status:
☑ Final Report
☐ Re-issued Report
☐ Revised Report

Client Project Number: 2491 **Location:** 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested
AD92533	CPE-20-6in	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD92534	CPE-20-12in	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD92535	CPE-20-18in	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD92536	CPE-20-24in	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD92537	CPE-21-6in	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD92538	CPE-21-12in	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD92539	CPE-21-18in	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD92540	CPE-21-24in	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids

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Client Project Number: 2491 **Location:** 60 Olympia - Woburn, MA

Laboratory ID	Client Sample ID	Analyses Requested

I attest that all information contained within this report has been reviewed for accuracy and checked against all quality control requirements outlined in each applicable method and meet the requirements of NELAC including any data obtained from a subcontract laboratory. Please note that all solid matrix sample results are calculated on a dry weight basis unless otherwise specified.

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Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

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SPECTRUM ANALYTICAL, INC.

Laboratory Report

Location: 60 Olympia - Woburn, MA
Client: GEOINS

Client Project No: 2491
Submittal Date: 6/12/2003

Lab ID No: AD92533 **Client Id:** CPE-20-6in **Collection Date:** 6/11/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/13/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1260	10,600	ug/Kg	250	6/13/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	124	ug/Kg	0.00	6/13/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	121	ug/Kg	0.00	6/13/2003	TG	SW846 8082
% Solids	91.6	%		6/13/2003	BH	SM2540 B Mod.

Lab ID No: AD92534 **Client Id:** CPE-20-12in **Collection Date:** 6/11/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/13/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1260	2,300	ug/Kg	250	6/13/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	91	ug/Kg	0.00	6/13/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	63	ug/Kg	0.00	6/13/2003	TG	SW846 8082
% Solids	85.6	%		6/13/2003	BH	SM2540 B Mod.

Lab ID No: AD92535 **Client Id:** CPE-20-18in **Collection Date:** 6/11/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/13/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1260	1,100	ug/Kg	250	6/13/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	107	ug/Kg	0.00	6/13/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	85	ug/Kg	0.00	6/13/2003	TG	SW846 8082
% Solids	86.7	%		6/13/2003	BH	SM2540 B Mod.

Lab ID No: AD92536 **Client Id:** CPE-20-24in **Collection Date:** 6/11/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/13/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	125	ug/Kg	0.00	6/13/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	116	ug/Kg	0.00	6/13/2003	TG	SW846 8082
% Solids	81.9	%		6/13/2003	BH	SM2540 B Mod.

Lab ID No: AD92537 **Client Id:** CPE-21-6in **Collection Date:** 6/11/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/13/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1260	7,800	ug/Kg	250	6/13/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	96	ug/Kg	0.00	6/13/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	99	ug/Kg	0.00	6/13/2003	TG	SW846 8082
% Solids	81.2	%		6/13/2003	BH	SM2540 B Mod.

Lab ID No: AD92538 **Client Id:** CPE-21-12in **Collection Date:** 6/11/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/13/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	98	ug/Kg	0.00	6/13/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	99	ug/Kg	0.00	6/13/2003	TG	SW846 8082
% Solids	81.9	%		6/13/2003	BH	SM2540 B Mod.

Lab ID No: AD92539 **Client Id:** CPE-21-18in **Collection Date:** 6/11/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/13/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	110	ug/Kg	0.00	6/13/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	82	ug/Kg	0.00	6/13/2003	TG	SW846 8082
% Solids	85.9	%		6/13/2003	BH	SM2540 B Mod.

Lab ID No: AD92540 **Client Id:** CPE-21-24in **Collection Date:** 6/11/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/13/2003	AM	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	250	6/13/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	89	ug/Kg	0.00	6/13/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	108	ug/Kg	0.00	6/13/2003	TG	SW846 8082
% Solids	82.8	%		6/13/2003	BH	SM2540 B Mod.

Reviewed by:

Quality Service/Quality Assurance Depts.

Validated by:

President/Laboratory Director

6/17/2003

06121024 TS

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CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☒ Rush TAT - Date Needed: 6/16/03
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Report To: GEOINSIGHT, INC
319 LITTLETON RD
WESTFORD, MA 01886

Project Mgr.: MIKE WEBSTER

Invoice To: SAME
23060666

P.O. No.: _____ RQN: _____

Project No.: 2491
Site Name: 60 OLYMPIA
Location: WOBURN State: MA
Sampler(s): JS

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		PCB's 8082								Notes:
92533	CPE-20-6"	6/11/03	3:30	G	SO			1				X								
92534	CPE-20-12"	↓	3:30	G	SO			1				X								
92535	CPE-20-18"	↓	3:30	G	SO			1				X								
92536	CPE-20-24"	↓	3:30	G	SO			1				X								
92537	CPE-21-6"	↓	3:45	G	SO			1				X								
92538	CPE-21-12"	↓	3:45	G	SO			1				X								
92539	CPE-21-18"	↓	3:45	G	SO			1				X								
92540	CPE-21-24"	↓	3:45	G	SO			1				X								

☐ Fax results when available to (978) 692-1115
☐ E-mail results when available to _____
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ 5 °C

Relinquished by:	Received by:	Date:	Time:
Jared Sheehan	[signature]	6/12/03	1:00
[signature]	[signature]	6/12/03	15:40

Rattus - 5°C

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Laboratory Report Supplement
References

SW 846	Test Methods for Evaluating Solid Waste. Third edition, 1998
40 CFR 136	Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act
40 CFR 141	National Primary Drinking Water Regulations
40 CFR 143	National Secondary Drinking Water Regulations
40 CFR 160	Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), Good Laboratory Practice Standards
APHA-AWWA-WPCF	Standard Methods for the Examination of Water and Wastewater. 19th edition, 1995
ASTM D 3328	Standard Methods for the Comparison of Waterborne Petroleum Oils by Gas Chromatography
EPA 540/G-87/003	Data Quality Objectives for Remediation Response Activities, Development Process
EPA 600/4-79-012	Quality Assurance Handbook for Analytical Quality Control in Water and Wastewater Laboratories
EPA 600/4-79-019	Handbook for Analytical Quality Control in Water and Wastewater Laboratories
EPA 600/4-79-020	Method for the Chemical Analysis of Water and Wastes
EPA 600/4-82-057	Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater
EPA 600/4-85/056	Choosing Cost-Effective QA/QC Programs for Chemical Analysis
EPA 600/4-88/039	Method for the Determination of Organic Compounds in Drinking Water
CT ETPH	Analysis of Extractable Total Petroleum Hydrocarbons (ETPH)
MADEP EPH	Method for the Determination of Extractable Petroleum Hydrocarbons (EPH)
MADEP VPH	Method for the Determination of Volatile Petroleum Hydrocarbons (VPH)
QAMS 004/80	Guidelines and Specifications for Preparing Quality Assurance Program Plans, USEPA Office of Monitoring System and Quality Assurance
GC-D-52-77	Oil Spill Identification System

Acronyms & Abbreviations

AA	Atomic Absorption
ASTM	American Society for Testing and Materials
BOD	Biological Oxygen Demand
°C	degree(s) Celsius
COD	Chemical Oxygen Demand
CMR	Code of Massachusetts Regulations
DEP	Department of Environmental Protection
DI	De-ionized
DO	Dissolved Oxygen
EPA	Environmental Protection Agency
EPH	Extractable Petroleum Hydrocarbons
FID	Flame Ionization Detector
GC	Gas Chromatograph
GC / MS	Gas Chromatograph / Mass Spectrometer
ICP	Inductively Coupled Plasma
Id	Identification
MCL	Maximum Contaminant Level
MDL	Minimum Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NTU	Nephelometric Turbidity Units
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PID	Photo Ionization Detector
PQL	Practical Quantitation Limit
R	Recovery (%R: Percent Recovery)
RSD	Relative Standard Deviation
SM	Standard Method
SR	Surrogate Recovery (%SR)
SW	Solid Waste
THM	Trihalomethane(s)
TOC	Total Organic Carbon
TOX	Total Organic Halogen
TPH	Total Petroleum Hydrocarbons
VOC	Volatile Organic Compound
VPH	Volatile Petroleum Hydrocarbons

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Client Project Number: 2491 **Location:** 60 Olympia - Woburn

Laboratory ID	Client Sample ID	Analyses Requested
AD95765	CPX 9	% Solids
AD95766	CPX 10	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD95767	CPX 11	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD95768	CPX 12	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD95769	CPX 13	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD95770	CPX 14	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD95771	CPX 15	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD95772	CPX 16	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD95773	CPX 17	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD95774	CPX 18	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD95775	CPX 19	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids
AD95776	CPX 20	Polychlorinated Biphenyls by GC Ultrasonic Extraction % Solids

ENVIRONMENTAL ANALYSES

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SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Client Project Number: 2491 **Location:** 60 Olympia - Woburn

Laboratory ID	Client Sample ID	Analyses Requested

I attest that all information contained within this report has been reviewed for accuracy and checked against all quality control requirements outlined in each applicable method and meet the requirements of NELAC including any data obtained from a subcontract laboratory. Please note that all solid matrix sample results are calculated on a dry weight basis unless otherwise specified.

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Authorized by

Hanibal G. Tayeh, Ph.D.
President/Laboratory Director

ENVIRONMENTAL ANALYSES

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SPECTRUM ANALYTICAL, INC.

Laboratory Report

Location: 60 Olympia - Woburn
Client: GEOINSIGHT

Client Project No: 2491
Submittal Date: 6/26/2003

Lab ID No: AD95757 **Client Id:** CPX 1 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	100	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	75	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	92.8	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95758 **Client Id:** CPX 2 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	510	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	105	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	76	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	87.1	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95759 **Client Id:** CPX 3 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	124	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	112	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	82.9	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95760 **Client Id:** CPX 4 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	12,300	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	122	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	75	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	86.0	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95761 **Client Id:** CPX 5 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	550	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	123	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	99	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	95.3	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95762 **Client Id:** CPX 6 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	1,400	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	101	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	121	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	79.9	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95763 **Client Id:** CPX 7 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	590	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	101	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	59	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	83.2	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95764 **Client Id:** CPX 8 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	1,200	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	124	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	95	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	87.4	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95765 **Client Id:** CPX 9 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	7,600	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	126	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	119	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	74.8	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95766 **Client Id:** CPX 10 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	370	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	116	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	122	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	82.8	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95767 **Client Id:** CPX 11 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	690	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	119	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	65	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	70.6	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95768 **Client Id:** CPX 12 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	3,500	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	126	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	99	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	81.2	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95769 **Client Id:** CPX 13 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	118	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	80	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	96.9	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95770 **Client Id:** CPX 14 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	129	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	61	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	94.7	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95771 **Client Id:** CPX 15 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	140	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	115	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	44	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	92.0	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95772 **Client Id:** CPX 16 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	114	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	56	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	96.3	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95773 **Client Id:** CPX 17 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	124	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	76	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	94.2	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95774 **Client Id:** CPX 18 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	119	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	64	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	91.1	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95775 **Client Id:** CPX 19 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	110	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	130	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	87	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	79.3	%		6/27/2003	BH	SM2540 B Mod.

Lab ID No: AD95776 **Client Id:** CPX 20 **Collection Date:** 6/25/2003 **Matrix:** Soil

Parameter	Results	Units	PQL	Start Date	Analyst	Method
SVOC Preparation						
Ultrasonic Extraction	Completed			6/27/2003	RT	SW846 3550B
Semivolatile Organic Compounds						
Polychlorinated Biphenyls by GC						
PCB-1016	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1221	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1232	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1242	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1248	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1254	Below det lim	ug/Kg	100	6/27/2003	TG	SW846 8082
PCB-1260	180	ug/Kg	100	6/27/2003	TG	SW846 8082
4,4'-DB-OF-Biphenyl (%SR)	114	ug/Kg	0.00	6/27/2003	TG	SW846 8082
Decachlorobiphenyl (%SR)	72	ug/Kg	0.00	6/27/2003	TG	SW846 8082
% Solids	96.4	%		6/27/2003	BH	SM2540 B Mod.

Reviewed by:

Quality Service/Quality Assurance Depts.

Validated by:

President/Laboratory Director

6/30/2003

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References

SW 846	Test Methods for Evaluating Solid Waste. Third edition, 1998
40 CFR 136	Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act
40 CFR 141	National Primary Drinking Water Regulations
40 CFR 143	National Secondary Drinking Water Regulations
40 CFR 160	Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), Good Laboratory Practice Standards
APHA-AWWA-WPCF	Standard Methods for the Examination of Water and Wastewater. 19th edition, 1995
ASTM D 3328	Standard Methods for the Comparison of Waterborne Petroleum Oils by Gas Chromatography
EPA 540/G-87/003	Data Quality Objectives for Remediation Response Activities, Development Process
EPA 600/4-79-012	Quality Assurance Handbook for Analytical Quality Control in Water and Wastewater Laboratories
EPA 600/4-79-019	Handbook for Analytical Quality Control in Water and Wastewater Laboratories
EPA 600/4-79-020	Method for the Chemical Analysis of Water and Wastes
EPA 600/4-82-057	Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater
EPA 600/4-85/056	Choosing Cost-Effective QA/QC Programs for Chemical Analysis
EPA 600/4-88/039	Method for the Determination of Organic Compounds in Drinking Water
CT ETPH	Analysis of Extractable Total Petroleum Hydrocarbons (ETPH)
MADEP EPH	Method for the Determination of Extractable Petroleum Hydrocarbons (EPH)
MADEP VPH	Method for the Determination of Volatile Petroleum Hydrocarbons (VPH)
QAMS 004/80	Guidelines and Specifications for Preparing Quality Assurance Program Plans, USEPA Office of Monitoring System and Quality Assurance
GC-D-52-77	Oil Spill Identification System

Acronyms & Abbreviations

AA	Atomic Absorption	MS	Matrix Spike
ASTM	American Society for Testing and Materials	MSD	Matrix Spike Duplicate
BOD	Biological Oxygen Demand	NTU	Nephelometric Turbidity Units
°C	degree(s) Celsius	PAHs	Polynuclear Aromatic Hydrocarbons
COD	Chemical Oxygen Demand	PCBs	Polychlorinated Biphenyls
CMR	Code of Massachusetts Regulations	PID	Photo Ionization Detector
DEP	Department of Environmental Protection	PQL	Practical Quantitation Limit
DI	De-ionized	R	Recovery (%R: Percent Recovery)
DO	Dissolved Oxygen	RSD	Relative Standard Deviation
EPA	Environmental Protection Agency	SM	Standard Method
EPH	Extractable Petroleum Hydrocarbons	SR	Surrogate Recovery (%SR)
FID	Flame Ionization Detector	SW	Solid Waste
GC	Gas Chromatograph	THM	Trihalomethane(s)
GC / MS	Gas Chromatograph / Mass Spectrometer	TOC	Total Organic Carbon
ICP	Inductively Coupled Plasma	TOX	Total Organic Halogen
Id	Identification	TPH	Total Petroleum Hydrocarbons
MCL	Maximum Contaminant Level	VOC	Volatile Organic Compound
MDL	Minimum Detection Limit	VPH	Volatile Petroleum Hydrocarbons

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MARLBOROUGH, MA 01752
TEL: 508-481-6200 • FAX: 508-481-7753

ACCUTEST JOB #: 06261557
ACCUTEST QUOTE #: (KP)

CLIENT INFORMATION

NAME: Geoinsight
ADDRESS: 319 Littleton Rd
CITY, STATE: Westfor MA ZIP: 01886
SEND REPORT TO:
PHONE #: 978-692-1114

FACILITY INFORMATION

PROJECT NAME: 60 Olympia
LOCATION: Woburn
PROJECT NO.: 2491
FAX #: 978-692-1115

ANALYTICAL INFORMATION

8082

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	8082	LAB USE ONLY
CPX 1		6/25/03	6:45	JS.	SO	1					X		95757
CPX 2			6:55		SO	1					X		95758
CPX 3			6:57		SO	1					X		95759
CPX 4			7:00		SO	1					X	X	95760
CPX 5			7:03		SO	1					X	X	95761
CPX 6			7:07		SO	1					X	X	95762
CPX 7			7:08		SO	1					X	X	95763
CPX 8			7:10		SO	1					X	X	95764
CPX 9			7:13		SO	1					X	X	95765
CPX 10			7:16		SO	1					X	X	95766
													~~95767~~

DATA TURNAROUND INFORMATION

- ☐ 14 DAYS STANDARD
- ☐ 7 DAYS *RUSH*
- ☐ 48 HOUR EMERGENCY
- ☐ OTHER _____

APPROVED BY: _____

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- ☐ STANDARD
- ☐ COMMERCIAL "B"
- ☐ DISK DELIVERABLE
- ☐ STATE FORMS
- ☐ OTHER (SPECIFY) _____

COMMENTS/REMARKS

4° 2219

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1. [signature]	6/26/03 1121	1. [signature]	2. [signature]	6/26/03 1530	2. [signature] 6/26/03 1555
RELINQUISHED BY: 3.	DATE TIME:	RECEIVED BY: 3.	RELINQUISHED BY: 4.	DATE TIME:	RECEIVED BY: 4.
RELINQUISHED BY: 5.	DATE TIME:	RECEIVED BY: 5.	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐ TEMPERATURE _____ C

Stratum
ACCUTEST®

CHAIN OF CUSTODY

495 TECHNOLOGY CENTER WEST • BUILDING ONE
MARLBOROUGH, MA 01752
TEL: 508-481-6200 • FAX: 508-481-7753

ACCUTEST JOB #: 0606 1557
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: Geotwight
ADDRESS: 319 Littleton Rd #105
CITY, STATE, ZIP: Westford MA 01886
SEND REPORT TO:
PHONE #: 978-692-1114

FACILITY INFORMATION

PROJECT NAME: 60 Olympia Lowell
LOCATION: 2491
PROJECT NO.:
FAX #: 978-692-1115

ANALYTICAL INFORMATION: 8082

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	HCl	NaOH	HNO3	H2SO4	NONE	8082	LAB USE ONLY
CPX 11		6/25/03	7:18	J.S.	SO	1					X	X	AD95767
CPX 12			7:16		SO	1					X	X	95768
CPX 13			7:16		SO	1					X	X	95769
CPX 14			7:18		SO	1					X	X	95770
CPX 15			7:20		SO	1					X	X	95771
CPX 16			7:22		SO	1					X	X	95772
CPX 17			7:24		SO	1					X	X	95773
CPX 18			7:28		SO	1					X	X	95774
CPX 19			7:28		SO	1					X	X	95775
CPX 20			7:30		SO	1					X	X	95776

DATA TURNAROUND INFORMATION

- ☐ 14 DAYS STANDARD
- ☐ 7 DAYS *RUSH*
- ☐ 48 HOUR EMERGENCY
- ☐ OTHER _____

APPROVED BY: _____

14 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- ☐ STANDARD
- ☐ COMMERCIAL "B"
- ☐ DISK DELIVERABLE
- ☐ STATE FORMS
- ☐ OTHER (SPECIFY) _____

COMMENTS/REMARKS

40 FRIG

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1. [signature]	6-26-03 1121	1. [signature]	2. [signature]	6-26-03 1550	2. [signature] 6/26/03 1553
RELINQUISHED BY: 3.	DATE TIME:	RECEIVED BY: 3.	RELINQUISHED BY: 4.	DATE TIME:	RECEIVED BY: 4.
RELINQUISHED BY: 5.	DATE TIME:	RECEIVED BY: 5.	SEAL #	PRESERVE WHERE APPLICABLE ☐	ON ICE ☐ TEMPERATURE _____ C

Report Date:
06-Aug-03 16:19

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

GeoInsight, Inc.
319 Littleton Road; Suite 100
Westford MA, 01886
Attn: Mike Webster

Project:60 Olympia (2491) - Woburn, MA
Project #:60 Olympia (2491)

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SA00454-01	PCB-X-1	Soil	31-Jul-03 09:45	01-Aug-03 11:20
SA00454-02	PCB-X-2	Soil	31-Jul-03 09:48	01-Aug-03 11:20
SA00454-03	PCB-X-3	Soil	31-Jul-03 09:50	01-Aug-03 11:20
SA00454-04	PCB-X-4	Soil	31-Jul-03 09:53	01-Aug-03 11:20
SA00454-05	PCB-X-5	Soil	31-Jul-03 09:56	01-Aug-03 11:20
SA00454-06	PCB-X-6	Soil	31-Jul-03 09:59	01-Aug-03 11:20
SA00454-07	PCB-X-7	Soil	31-Jul-03 10:06	01-Aug-03 11:20
SA00454-08	PCB-X-8	Soil	31-Jul-03 10:10	01-Aug-03 11:20

I attest that all information contained within this report has been reviewed for accuracy and checked against all quality control requirements outlined in each applicable method and meet the requirements of NELAC.
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Florida # E87600
Maine # MA138
New Hampshire # 2538
New York # 11393
Rhode Island # 98
USDA # S-51435

ACCREDITED IN ACCORDANCE WITH nelac

Authorized by:

Hanibal C. Tayeh, PhD.
President/Laboratory Director

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
PCB-X-1 SA00454-01	60 Olympia (2491)	Soil	31-Jul-03 09:45	01-Aug-03

Analyte(s)	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Semivolatile Organic Compounds by GC									
Polychlorinated Biphenyls by SW846 8082		Prepared by method SW846 3550B SVOC							
PCB 1016	BRL	2.90 ug/kg dry	1	SW846 8082	05-Aug-03	06-Aug-03	3080165	TG	
PCB 1221	BRL	2.90 ug/kg dry	1	"	"	"	"	"	
PCB 1232	BRL	2.90 ug/kg dry	1	"	"	"	"	"	
PCB 1242	BRL	2.90 ug/kg dry	1	"	"	"	"	"	
PCB 1248	BRL	2.90 ug/kg dry	1	"	"	"	"	"	
PCB 1254	BRL	2.90 ug/kg dry	1	"	"	"	"	"	
PCB 1260	213	2.90 ug/kg dry	1	"	"	"	"	"	
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*126*	*40-140 %*		"	"	"	"	"	
Surrogate: Decachlorobiphenyl (Sr)	*106*	*40-140 %*		"	"	"	"	"	
General Chemistry Parameters									
% Solids	96.3	%	1	SM2540 G Mod.	05-Aug-03	05-Aug-03	3080265	AW	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
PCB-X-2	60 Olympia (2491)	Soil	31-Jul-03 09:48	01-Aug-03
SA00454-02				

Analyte(s)	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Semivolatile Organic Compounds by GC									
Polychlorinated Biphenyls by SW846 8082		Prepared by method SW846 3550B SVOC							
PCB 1016	BRL	2.83 ug/kg dry	1	SW846 8082	05-Aug-03	06-Aug-03	3080165	TG	
PCB 1221	BRL	2.83 ug/kg dry	1	"	"	"	"	"	
PCB 1232	BRL	2.83 ug/kg dry	1	"	"	"	"	"	
PCB 1242	BRL	2.83 ug/kg dry	1	"	"	"	"	"	
PCB 1248	BRL	2.83 ug/kg dry	1	"	"	"	"	"	
PCB 1254	BRL	2.83 ug/kg dry	1	"	"	"	"	"	
PCB 1260	BRL	2.83 ug/kg dry	1	"	"	"	"	"	
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*125*	*40-140 %*		"	"	"	"	"	
Surrogate: Decachlorobiphenyl (Sr)	*76.3*	*40-140 %*		"	"	"	"	"	
General Chemistry Parameters									
% Solids	81.6	%	1	SM2540 G Mod.	05-Aug-03	05-Aug-03	3080265	AW	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
PCB-X-3 SA00454-03	60 Olympia (2491)	Soil	31-Jul-03 09:50	01-Aug-03

Analyte(s)	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst Flag*
Semivolatile Organic Compounds by GC								
Polychlorinated Biphenyls by SW846 8082		Prepared by method SW846 3550B SVOC						
PCB 1016	BRL	3.28 ug/kg dry	1	SW846 8082	05-Aug-03	06-Aug-03	3080165	TG
PCB 1221	BRL	3.28 ug/kg dry	1	"	"	"	"	"
PCB 1232	BRL	3.28 ug/kg dry	1	"	"	"	"	"
PCB 1242	BRL	3.28 ug/kg dry	1	"	"	"	"	"
PCB 1248	BRL	3.28 ug/kg dry	1	"	"	"	"	"
PCB 1254	BRL	3.28 ug/kg dry	1	"	"	"	"	"
PCB 1260	BRL	3.28 ug/kg dry	1	"	"	"	"	"
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*109*	*40-140 %*		"	"	"	"	"
Surrogate: Decachlorobiphenyl (Sr)	*57.9*	*40-140 %*		"	"	"	"	"
General Chemistry Parameters								
% Solids	78.0	%	1	SM2540 G Mod.	05-Aug-03	05-Aug-03	3080265	AW

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
PCB-X-4	60 Olympia (2491)	Soil	31-Jul-03 09:53	01-Aug-03
SA00454-04				

Analyte(s)	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst Flag*
Semivolatile Organic Compounds by GC								
Polychlorinated Biphenyls by SW846 8082		Prepared by method SW846 3550B SVOC						
PCB 1016	BRL	2.89 ug/kg dry	1	SW846 8082	05-Aug-03	06-Aug-03	3080165	TG
PCB 1221	BRL	2.89 ug/kg dry	1	"	"	"	"	"
PCB 1232	BRL	2.89 ug/kg dry	1	"	"	"	"	"
PCB 1242	BRL	2.89 ug/kg dry	1	"	"	"	"	"
PCB 1248	BRL	2.89 ug/kg dry	1	"	"	"	"	"
PCB 1254	BRL	2.89 ug/kg dry	1	"	"	"	"	"
PCB 1260	373	2.89 ug/kg dry	1	"	"	"	"	"
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*122*	*40-140 %*		"	"	"	"	"
Surrogate: Decachlorobiphenyl (Sr)	*82.7*	*40-140 %*		"	"	"	"	"
General Chemistry Parameters								
% Solids	81.3	%	1	SM2540 G Mod.	05-Aug-03	05-Aug-03	3080265	AW

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
PCB-X-5 SA00454-05	60 Olympia (2491)	Soil	31-Jul-03 09:56	01-Aug-03

Analyte(s)	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Semivolatile Organic Compounds by GC									
Polychlorinated Biphenyls by SW846 8082		Prepared by method SW846 3550B SVOC							
PCB 1016	BRL	3.12 ug/kg dry	1	SW846 8082	05-Aug-03	06-Aug-03	3080165	TG	
PCB 1221	BRL	3.12 ug/kg dry	1	"	"	"	"	"	
PCB 1232	BRL	3.12 ug/kg dry	1	"	"	"	"	"	
PCB 1242	BRL	3.12 ug/kg dry	1	"	"	"	"	"	
PCB 1248	BRL	3.12 ug/kg dry	1	"	"	"	"	"	
PCB 1254	BRL	3.12 ug/kg dry	1	"	"	"	"	"	
PCB 1260	50.9	3.12 ug/kg dry	1	"	"	"	"	"	
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*122*	*40-140 %*		"	"	"	"	"	
Surrogate: Decachlorobiphenyl (Sr)	*91.0*	*40-140 %*		"	"	"	"	"	
General Chemistry Parameters									
% Solids	77.7	%	1	SM2540 G Mod.	05-Aug-03	05-Aug-03	3080265	AW	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
PCB-X-6	60 Olympia (2491)	Soil	31-Jul-03 09:59	01-Aug-03
SA00454-06				

Analyte(s)	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst Flag*
Semivolatile Organic Compounds by GC								
Polychlorinated Biphenyls by SW846 8082		Prepared by method SW846 3550B SVOC						
PCB 1016	BRL	3.04 ug/kg dry	1	SW846 8082	05-Aug-03	06-Aug-03	3080165	TG
PCB 1221	BRL	3.04 ug/kg dry	1	"	"	"	"	"
PCB 1232	BRL	3.04 ug/kg dry	1	"	"	"	"	"
PCB 1242	BRL	3.04 ug/kg dry	1	"	"	"	"	"
PCB 1248	BRL	3.04 ug/kg dry	1	"	"	"	"	"
PCB 1254	BRL	3.04 ug/kg dry	1	"	"	"	"	"
PCB 1260	3,530	3.04 ug/kg dry	1	"	"	"	"	"
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*106*	*40-140 %*		"	"	"	"	"
Surrogate: Decachlorobiphenyl (Sr)	*98.0*	*40-140 %*		"	"	"	"	"
General Chemistry Parameters								
% Solids	90.1	%	1	SM2540 G Mod.	05-Aug-03	05-Aug-03	3080265	AW

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
PCB-X-7 SA00454-07	60 Olympia (2491)	Soil	31-Jul-03 10:06	01-Aug-03

Analyte(s)	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Semivolatile Organic Compounds by GC									
Polychlorinated Biphenyls by SW846 8082		Prepared by method SW846 3550B SVOC							
PCB 1016	BRL	2.99 ug/kg dry	1	SW846 8082	05-Aug-03	06-Aug-03	3080165	TG	
PCB 1221	BRL	2.99 ug/kg dry	1	"	"	"	"	"	
PCB 1232	BRL	2.99 ug/kg dry	1	"	"	"	"	"	
PCB 1242	BRL	2.99 ug/kg dry	1	"	"	"	"	"	
PCB 1248	BRL	2.99 ug/kg dry	1	"	"	"	"	"	
PCB 1254	BRL	2.99 ug/kg dry	1	"	"	"	"	"	
PCB 1260	3,150	2.99 ug/kg dry	1	"	"	"	"	"	
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*115*	*40-140 %*		"	"	"	"	"	
Surrogate: Decachlorobiphenyl (Sr)	*102*	*40-140 %*		"	"	"	"	"	
General Chemistry Parameters									
% Solids	83.6	%	1	SM2540 G Mod.	05-Aug-03	05-Aug-03	3080265	AW	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
PCB-X-8 SA00454-08	60 Olympia (2491)	Soil	31-Jul-03 10:10	01-Aug-03

Analyte(s)	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst Flag*
Semivolatile Organic Compounds by GC								
Polychlorinated Biphenyls by SW846 8082		Prepared by method SW846 3550B SVOC						
PCB 1016	BRL	3.29 ug/kg dry	1	SW846 8082	05-Aug-03	06-Aug-03	3080165	TG
PCB 1221	BRL	3.29 ug/kg dry	1	"	"	"	"	"
PCB 1232	BRL	3.29 ug/kg dry	1	"	"	"	"	"
PCB 1242	BRL	3.29 ug/kg dry	1	"	"	"	"	"
PCB 1248	BRL	3.29 ug/kg dry	1	"	"	"	"	"
PCB 1254	BRL	3.29 ug/kg dry	1	"	"	"	"	"
PCB 1260	BRL	3.29 ug/kg dry	1	"	"	"	"	"
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*117*	*40-140 %*		"	"	"	"	"
Surrogate: Decachlorobiphenyl (Sr)	*64.7*	*40-140 %*		"	"	"	"	"
General Chemistry Parameters								
% Solids	75.7	%	1	SM2540 G Mod.	05-Aug-03	05-Aug-03	3080265	AW

Semivolatile Organic Compounds by GC - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 3080165 - SW846 3550B SVOC										
Blank (3080165-BLK1)				Prepared: 05-Aug-03 Analyzed: 06-Aug-03						
PCB 1016	BRL	2.93	ug/kg wet							
PCB 1221	BRL	2.93	ug/kg wet							
PCB 1232	BRL	2.93	ug/kg wet							
PCB 1242	BRL	2.93	ug/kg wet							
PCB 1248	BRL	2.93	ug/kg wet							
PCB 1254	BRL	2.93	ug/kg wet							
PCB 1260	BRL	2.93	ug/kg wet							
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*25.1*		ug/kg wet	*29.2*		*86.0*	*40-140*			
Surrogate: Decachlorobiphenyl (Sr)	*16.2*		ug/kg wet	*29.2*		*55.5*	*40-140*			
Duplicate (3080165-DUP1)		**Source: SA00453-01**		Prepared: 05-Aug-03 Analyzed: 06-Aug-03						
PCB 1016	BRL	3.17	ug/kg dry		BRL				40	
PCB 1221	BRL	3.17	ug/kg dry		BRL				40	
PCB 1232	BRL	3.17	ug/kg dry		BRL				40	
PCB 1242	BRL	3.17	ug/kg dry		BRL				40	
PCB 1248	BRL	3.17	ug/kg dry		BRL				40	
PCB 1254	BRL	3.17	ug/kg dry		BRL				40	
PCB 1260	BRL	3.17	ug/kg dry		BRL				40	
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*31.6*		ug/kg dry	*31.7*		*99.7*	*40-140*			
Surrogate: Decachlorobiphenyl (Sr)	*29.8*		ug/kg dry	*31.7*		*94.0*	*40-140*			
Matrix Spike (3080165-MS1)		**Source: SA00453-01**		Prepared: 05-Aug-03 Analyzed: 06-Aug-03						
PCB 1016	408	3.27	ug/kg dry	408	BRL	100	40-140			
PCB 1260	401	3.27	ug/kg dry	408	BRL	98.3	40-140			
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*31.7*		ug/kg dry	*32.7*		*96.9*	*40-140*			
Surrogate: Decachlorobiphenyl (Sr)	*15.7*		ug/kg dry	*32.7*		*48.0*	*40-140*			

Semivolatile Organic Compounds by GC - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 3080165 - SW846 3550B SVOC										
Matrix Spike Dup (3080165-MSD1)		**Source: SA00453-01**		Prepared: 05-Aug-03 Analyzed: 06-Aug-03						
PCB 1016	402	3.25	ug/kg dry	406	BRL	99.0	40-140	1.01	200	
PCB 1260	435	3.25	ug/kg dry	406	BRL	107	40-140	8.48	200	
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*36.4*		ug/kg dry	*32.5*		*112*	*40-140*			
Surrogate: Decachlorobiphenyl (Sr)	*23.2*		ug/kg dry	*32.5*		*71.4*	*40-140*			

General Chemistry Parameters - Quality Control

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 3080265 - General Preparation										
Duplicate (3080265-DUP1)		**Source: SA00375-23**		Prepared: 05-Aug-03 Analyzed: 06-Aug-03						
% Solids	81.1		%		81.1			0.00	20	
Duplicate (3080265-DUP2)		**Source: SA00391-05**		Prepared: 05-Aug-03 Analyzed: 06-Aug-03						
% Solids	81.1		%		82.2			1.35	20	
Duplicate (3080265-DUP3)		**Source: SA00391-12**		Prepared: 05-Aug-03 Analyzed: 06-Aug-03						
% Solids	74.4		%		75.2			1.07	20	
Duplicate (3080265-DUP4)		**Source: SA00397-19**		Prepared: 05-Aug-03 Analyzed: 06-Aug-03						
% Solids	80.4		%		82.7			2.82	20	
Duplicate (3080265-DUP5)		**Source: SA00157-02**		Prepared: 05-Aug-03 Analyzed: 06-Aug-03						
% Solids	42.0		%		43.4			3.28	20	
Duplicate (3080265-DUP6)		**Source: SA00375-03**		Prepared: 05-Aug-03 Analyzed: 06-Aug-03						
% Solids	87.4		%		84.5			3.37	20	

Notes and Definitions

BRL Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. The RDL is generally 5 to 10 times the MDL. However, it may be nominally chosen within these guidelines to simplify data reporting. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

SA00454

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☒ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- All samples are disposed of after 60 days unless otherwise instructed.

Page 1 of 1

Report To: Geoinsight
319 Littleton Rd #105
Westford MA 01886

Project Mgr.: Mike Webster

Invoice To: Geoinsight
319 Littleton Rd #105
Westford MA 01886
INV#2308 6/05

P.O. No.: _____ RQN: _____

Project No.: 60 Olympia (2491)
Site Name: 60 olympia
Location: Woburn State: MA
Sampler(s): J.F.

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	8082							Notes:
SA00454-01	PCB-X-1	7/31/03	9:45		SO			1			X							PCB Analysis
-02	PCB-X-2	7/31/03	9:48		SO			1			X							
-03	PCB-X-3	7/31/03	9:50		SO			1			X							
-04	PCB-X-4	7/31/03	9:53		SO			1			X							
-05	PCB-X-5	7/31/03	9:56		SO			1			X							
-06	PCB-X-6	7/31/03	9:59		SO			1			X							
-07	PCB-X-7	7/31/03	10:06		SO			1			X							
-08	PCB-X-8	7/31/03	10:10		SO			1			X							

☒ Fax results when available to (978) 692-1115
☐ E-mail results when available to _____
Condition upon Receipt: ☐ Iced ☐ Ambient ☐ 6 °C

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	8/1/03	1047
Bill H	[signature]	8/1/03	1540

Ref

ANALYTICAL REPORT

Lab Number:	L2227216
Client:	Verdantas, LLC One Monarch Drive Littleton, MA 01460
ATTN:	Christene Binger
Phone:	(978) 679-1600
Project Name:	OLYMPIA
Project Number:	2491010
Report Date:	05/31/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2227216-01	COMP-SS-05-20-22	SOIL	60 OLYMPIA WOBURN	05/20/22 14:40	05/23/22
L2227216-02	SS-03- 05-20-22	SOIL	60 OLYMPIA WOBURN	05/20/22 15:00	05/23/22

Project Name: OLYMPIA **Lab Number:** L2227216

Project Number: 2491010 **Report Date:** 05/31/22

MADEP MCP Response Action Analytical Report Certification

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

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

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

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

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

Project Name:	OLYMPIA	**Lab Number:**	L2227216
Project Number:	2491010	**Report Date:**	05/31/22

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

Please contact Project Management at 800-624-9220 with any questions.

Project Name: OLYMPIA **Lab Number:** L2227216
Project Number: 2491010 **Report Date:** 05/31/22

Case Narrative (continued)

MCP Related Narratives

Sample Receipt

The analyses performed were specified by the client.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Total Metals.

Volatile Organics

L2227216-02: Initial calibration utilized a quadratic fit for: toluene

In reference to question G:

L2227216-02: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question H:

L2227216-02: Initial Calibration did not meet:

Lowest Calibration Standard Minimum Response Factor: cis-1,2-dichloroethene (0.1992), bromochloromethane (0.0940), trichloroethene (0.1657), 1,2-dichloropropane (0.1962), bromodichloromethane (0.2646), 1,1,2-trichloroethane (0.1817), 1,2-dibromoethane (0.1793)

L2227216-02: The associated continuing calibration standard is outside the acceptance criteria for several compounds; however, it is within overall method allowances. Associated results are considered to be biased high if the %D is negative and biased low if the %D is positive. A copy of the continuing calibration standard is included as an addendum to this report.

Total Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

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

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 05/31/22

QC OUTLIER SUMMARY REPORT

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
MCP Volatile Organics by EPA 5035 High - Westborough Lab								
8260D	Batch QC	WG1644520-3	Bromomethane	LCS	138	70-130	02	potential high bias
8260D	Batch QC	WG1644520-4	Bromomethane	LCSD	141	70-130	02	potential high bias

ORGANICS

VOLATILES

Project Name: OLYMPIA
Project Number: 2491010
Lab Number: L2227216
Report Date: 05/31/22

SAMPLE RESULTS

Lab ID: L2227216-02
Client ID: SS-03- 05-20-22
Sample Location: 60 OLYMPIA WOBURN
Date Collected: 05/20/22 15:00
Date Received: 05/23/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8260D
Analytical Date: 05/26/22 12:21
Analyst: NLK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	460	--	1
1,1-Dichloroethane	ND		ug/kg	92	--	1
Chloroform	ND		ug/kg	140	--	1
Carbon tetrachloride	ND		ug/kg	92	--	1
1,2-Dichloropropane	ND		ug/kg	92	--	1
Dibromochloromethane	ND		ug/kg	92	--	1
1,1,2-Trichloroethane	ND		ug/kg	92	--	1
Tetrachloroethene	ND		ug/kg	46	--	1
Chlorobenzene	ND		ug/kg	46	--	1
Trichlorofluoromethane	ND		ug/kg	370	--	1
1,2-Dichloroethane	ND		ug/kg	92	--	1
1,1,1-Trichloroethane	ND		ug/kg	46	--	1
Bromodichloromethane	ND		ug/kg	46	--	1
trans-1,3-Dichloropropene	ND		ug/kg	92	--	1
cis-1,3-Dichloropropene	ND		ug/kg	46	--	1
1,3-Dichloropropene, Total	ND		ug/kg	46	--	1
1,1-Dichloropropene	ND		ug/kg	46	--	1
Bromoform	ND		ug/kg	370	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	46	--	1
Benzene	ND		ug/kg	46	--	1
Toluene	ND		ug/kg	92	--	1
Ethylbenzene	ND		ug/kg	92	--	1
Chloromethane	ND		ug/kg	370	--	1
Bromomethane	ND		ug/kg	180	--	1
Vinyl chloride	ND		ug/kg	92	--	1
Chloroethane	ND		ug/kg	180	--	1
1,1-Dichloroethene	ND		ug/kg	92	--	1
trans-1,2-Dichloroethene	ND		ug/kg	140	--	1

Project Name: OLYMPIA **Lab Number:** L2227216

Project Number: 2491010 **Report Date:** 05/31/22

SAMPLE RESULTS

Lab ID: L2227216-02 Date Collected: 05/20/22 15:00

Client ID: SS-03- 05-20-22 Date Received: 05/23/22

Sample Location: 60 OLYMPIA WOBURN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 High - Westborough Lab						
Trichloroethene	ND		ug/kg	46	--	1
1,2-Dichlorobenzene	ND		ug/kg	180	--	1
1,3-Dichlorobenzene	ND		ug/kg	180	--	1
1,4-Dichlorobenzene	ND		ug/kg	180	--	1
Methyl tert butyl ether	ND		ug/kg	180	--	1
p/m-Xylene	ND		ug/kg	180	--	1
o-Xylene	ND		ug/kg	92	--	1
Xylenes, Total	ND		ug/kg	92	--	1
cis-1,2-Dichloroethene	ND		ug/kg	92	--	1
1,2-Dichloroethene, Total	ND		ug/kg	92	--	1
Dibromomethane	ND		ug/kg	180	--	1
1,2,3-Trichloropropane	ND		ug/kg	180	--	1
Styrene	ND		ug/kg	92	--	1
Dichlorodifluoromethane	ND		ug/kg	920	--	1
Acetone	ND		ug/kg	920	--	1
Carbon disulfide	ND		ug/kg	920	--	1
Methyl ethyl ketone	ND		ug/kg	920	--	1
Methyl isobutyl ketone	ND		ug/kg	920	--	1
2-Hexanone	ND		ug/kg	920	--	1
Bromochloromethane	ND		ug/kg	180	--	1
Tetrahydrofuran	ND		ug/kg	370	--	1
2,2-Dichloropropane	ND		ug/kg	180	--	1
1,2-Dibromoethane	ND		ug/kg	92	--	1
1,3-Dichloropropane	ND		ug/kg	180	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	46	--	1
Bromobenzene	ND		ug/kg	180	--	1
n-Butylbenzene	ND		ug/kg	92	--	1
sec-Butylbenzene	ND		ug/kg	92	--	1
tert-Butylbenzene	ND		ug/kg	180	--	1
o-Chlorotoluene	ND		ug/kg	180	--	1
p-Chlorotoluene	ND		ug/kg	180	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	280	--	1
Hexachlorobutadiene	ND		ug/kg	370	--	1
Isopropylbenzene	ND		ug/kg	92	--	1
p-Isopropyltoluene	ND		ug/kg	92	--	1
Naphthalene	ND		ug/kg	370	--	1
n-Propylbenzene	ND		ug/kg	92	--	1

Project Name: OLYMPIA **Lab Number:** L2227216

Project Number: 2491010 **Report Date:** 05/31/22

SAMPLE RESULTS

Lab ID: L2227216-02 Date Collected: 05/20/22 15:00

Client ID: SS-03- 05-20-22 Date Received: 05/23/22

Sample Location: 60 OLYMPIA WOBURN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by EPA 5035 High - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/kg	180	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	180	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	180	--	1
Diethyl ether	ND		ug/kg	180	--	1
Diisopropyl Ether	ND		ug/kg	180	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	180	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	180	--	1
1,4-Dioxane	ND		ug/kg	7400	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	94		70-130

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 05/26/22 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 02 Batch: WG1644520-5					
Methylene chloride	ND		ug/kg	250	--
1,1-Dichloroethane	ND		ug/kg	50	--
Chloroform	ND		ug/kg	75	--
Carbon tetrachloride	ND		ug/kg	50	--
1,2-Dichloropropane	ND		ug/kg	50	--
Dibromochloromethane	ND		ug/kg	50	--
1,1,2-Trichloroethane	ND		ug/kg	50	--
Tetrachloroethene	ND		ug/kg	25	--
Chlorobenzene	ND		ug/kg	25	--
Trichlorofluoromethane	ND		ug/kg	200	--
1,2-Dichloroethane	ND		ug/kg	50	--
1,1,1-Trichloroethane	ND		ug/kg	25	--
Bromodichloromethane	ND		ug/kg	25	--
trans-1,3-Dichloropropene	ND		ug/kg	50	--
cis-1,3-Dichloropropene	ND		ug/kg	25	--
1,3-Dichloropropene, Total	ND		ug/kg	25	--
1,1-Dichloropropene	ND		ug/kg	25	--
Bromoform	ND		ug/kg	200	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	25	--
Benzene	ND		ug/kg	25	--
Toluene	ND		ug/kg	50	--
Ethylbenzene	ND		ug/kg	50	--
Chloromethane	ND		ug/kg	200	--
Bromomethane	ND		ug/kg	100	--
Vinyl chloride	ND		ug/kg	50	--
Chloroethane	ND		ug/kg	100	--
1,1-Dichloroethene	ND		ug/kg	50	--
trans-1,2-Dichloroethene	ND		ug/kg	75	--
Trichloroethene	ND		ug/kg	25	--

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 05/26/22 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 02 Batch: WG1644520-5					
1,2-Dichlorobenzene	ND		ug/kg	100	--
1,3-Dichlorobenzene	ND		ug/kg	100	--
1,4-Dichlorobenzene	ND		ug/kg	100	--
Methyl tert butyl ether	ND		ug/kg	100	--
p/m-Xylene	ND		ug/kg	100	--
o-Xylene	ND		ug/kg	50	--
Xylenes, Total	ND		ug/kg	50	--
cis-1,2-Dichloroethene	ND		ug/kg	50	--
1,2-Dichloroethene, Total	ND		ug/kg	50	--
Dibromomethane	ND		ug/kg	100	--
1,2,3-Trichloropropane	ND		ug/kg	100	--
Styrene	ND		ug/kg	50	--
Dichlorodifluoromethane	ND		ug/kg	500	--
Acetone	ND		ug/kg	500	--
Carbon disulfide	ND		ug/kg	500	--
Methyl ethyl ketone	ND		ug/kg	500	--
Methyl isobutyl ketone	ND		ug/kg	500	--
2-Hexanone	ND		ug/kg	500	--
Bromochloromethane	ND		ug/kg	100	--
Tetrahydrofuran	ND		ug/kg	200	--
2,2-Dichloropropane	ND		ug/kg	100	--
1,2-Dibromoethane	ND		ug/kg	50	--
1,3-Dichloropropane	ND		ug/kg	100	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	25	--
Bromobenzene	ND		ug/kg	100	--
n-Butylbenzene	ND		ug/kg	50	--
sec-Butylbenzene	ND		ug/kg	50	--
tert-Butylbenzene	ND		ug/kg	100	--
o-Chlorotoluene	ND		ug/kg	100	--

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8260D
Analytical Date: 05/26/22 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 02 Batch: WG1644520-5					
p-Chlorotoluene	ND		ug/kg	100	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	150	--
Hexachlorobutadiene	ND		ug/kg	200	--
Isopropylbenzene	ND		ug/kg	50	--
p-Isopropyltoluene	ND		ug/kg	50	--
Naphthalene	ND		ug/kg	200	--
n-Propylbenzene	ND		ug/kg	50	--
1,2,3-Trichlorobenzene	ND		ug/kg	100	--
1,2,4-Trichlorobenzene	ND		ug/kg	100	--
1,3,5-Trimethylbenzene	ND		ug/kg	100	--
1,2,4-Trimethylbenzene	ND		ug/kg	100	--
Diethyl ether	ND		ug/kg	100	--
Diisopropyl Ether	ND		ug/kg	100	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	100	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	100	--
1,4-Dioxane	ND		ug/kg	4000	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	97		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

MCP Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 02 Batch: WG1644520-3 WG1644520-4

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Methylene chloride	100		99		70-130	1		20
1,1-Dichloroethane	108		108		70-130	0		20
Chloroform	102		100		70-130	2		20
Carbon tetrachloride	97		96		70-130	1		20
1,2-Dichloropropane	109		109		70-130	0		20
Dibromochloromethane	104		105		70-130	1		20
1,1,2-Trichloroethane	111		111		70-130	0		20
Tetrachloroethene	100		96		70-130	4		20
Chlorobenzene	104		103		70-130	1		20
Trichlorofluoromethane	108		106		70-130	2		20
1,2-Dichloroethane	105		105		70-130	0		20
1,1,1-Trichloroethane	104		101		70-130	3		20
Bromodichloromethane	104		105		70-130	1		20
trans-1,3-Dichloropropene	107		107		70-130	0		20
cis-1,3-Dichloropropene	106		106		70-130	0		20
1,1-Dichloropropene	100		99		70-130	1		20
Bromoform	103		103		70-130	0		20
1,1,2,2-Tetrachloroethane	115		112		70-130	3		20
Benzene	107		106		70-130	1		20
Toluene	101		99		70-130	2		20
Ethylbenzene	104		103		70-130	1		20
Chloromethane	114		111		70-130	3		20
Bromomethane	**138**	Q	**141**	Q	70-130	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 02 Batch: WG1644520-3 WG1644520-4								
Vinyl chloride	124		124		70-130	0		20
Chloroethane	120		116		70-130	3		20
1,1-Dichloroethene	102		101		70-130	1		20
trans-1,2-Dichloroethene	104		102		70-130	2		20
Trichloroethene	106		105		70-130	1		20
1,2-Dichlorobenzene	104		102		70-130	2		20
1,3-Dichlorobenzene	105		104		70-130	1		20
1,4-Dichlorobenzene	105		104		70-130	1		20
Methyl tert butyl ether	106		105		70-130	1		20
p/m-Xylene	106		105		70-130	1		20
o-Xylene	107		107		70-130	0		20
cis-1,2-Dichloroethene	105		104		70-130	1		20
Dibromomethane	103		104		70-130	1		20
1,2,3-Trichloropropane	113		113		70-130	0		20
Styrene	105		105		70-130	0		20
Dichlorodifluoromethane	103		99		70-130	4		20
Acetone	98		101		70-130	3		20
Carbon disulfide	98		96		70-130	2		20
Methyl ethyl ketone	101		100		70-130	1		20
Methyl isobutyl ketone	116		116		70-130	0		20
2-Hexanone	96		94		70-130	2		20
Bromochloromethane	102		102		70-130	0		20
Tetrahydrofuran	105		106		70-130	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 02 Batch: WG1644520-3 WG1644520-4								
2,2-Dichloropropane	101		98		70-130	3		20
1,2-Dibromoethane	107		108		70-130	1		20
1,3-Dichloropropane	110		109		70-130	1		20
1,1,1,2-Tetrachloroethane	105		104		70-130	1		20
Bromobenzene	102		100		70-130	2		20
n-Butylbenzene	111		109		70-130	2		20
sec-Butylbenzene	108		106		70-130	2		20
tert-Butylbenzene	104		101		70-130	3		20
o-Chlorotoluene	107		107		70-130	0		20
p-Chlorotoluene	109		107		70-130	2		20
1,2-Dibromo-3-chloropropane	95		97		70-130	2		20
Hexachlorobutadiene	95		91		70-130	4		20
Isopropylbenzene	107		104		70-130	3		20
p-Isopropyltoluene	105		104		70-130	1		20
Naphthalene	100		99		70-130	1		20
n-Propylbenzene	110		108		70-130	2		20
1,2,3-Trichlorobenzene	100		100		70-130	0		20
1,2,4-Trichlorobenzene	100		98		70-130	2		20
1,3,5-Trimethylbenzene	108		106		70-130	2		20
1,2,4-Trimethylbenzene	108		106		70-130	2		20
Diethyl ether	112		112		70-130	0		20
Diisopropyl Ether	112		111		70-130	1		20
Ethyl-Tert-Butyl-Ether	109		108		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: OLYMPIA

Project Number: 2491010

Lab Number: L2227216

Report Date: 05/31/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 02 Batch: WG1644520-3 WG1644520-4								
Tertiary-Amyl Methyl Ether	106		104		70-130	2		20
1,4-Dioxane	101		105		70-130	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		101		70-130
Toluene-d8	102		101		70-130
4-Bromofluorobenzene	101		101		70-130
Dibromofluoromethane	96		96		70-130

SEMIVOLATILES

Project Name: OLYMPIA
Project Number: 2491010
Lab Number: L2227216
Report Date: 05/31/22

SAMPLE RESULTS

Lab ID: L2227216-01
Client ID: COMP-SS-05-20-22
Sample Location: 60 OLYMPIA WOBURN

Date Collected: 05/20/22 14:40
Date Received: 05/23/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 05/26/22 16:38
Analyst: CMM
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 05/26/22 05:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	84	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	84	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	84	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	84	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	890		ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	84	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	84	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	84	--	1
Benzo(a)anthracene	470		ug/kg	120	--	1

Project Name: OLYMPIA **Lab Number:** L2227216

Project Number: 2491010 **Report Date:** 05/31/22

SAMPLE RESULTS

Lab ID: L2227216-01 Date Collected: 05/20/22 14:40

Client ID: COMP-SS-05-20-22 Date Received: 05/23/22

Sample Location: 60 OLYMPIA WOBURN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Benzo(a)pyrene	370		ug/kg	160	--	1
Benzo(b)fluoranthene	640		ug/kg	120	--	1
Benzo(k)fluoranthene	160		ug/kg	120	--	1
Chrysene	440		ug/kg	120	--	1
Acenaphthylene	170		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	230		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	120		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	84	--	1
Indeno(1,2,3-cd)pyrene	290		ug/kg	160	--	1
Pyrene	840		ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	ND		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	84	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	84	--	1
2-Chlorophenol	ND		ug/kg	84	--	1
2,4-Dichlorophenol	ND		ug/kg	84	--	1
2,4-Dimethylphenol	ND		ug/kg	84	--	1
2-Nitrophenol	ND		ug/kg	430	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	960	--	1
Pentachlorophenol	ND		ug/kg	400	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1
Biphenyl	ND		ug/kg	40	--	1

Project Name: OLYMPIA **Lab Number:** L2227216

Project Number: 2491010 **Report Date:** 05/31/22

SAMPLE RESULTS

Lab ID: L2227216-01 Date Collected: 05/20/22 14:40

Client ID: COMP-SS-05-20-22 Date Received: 05/23/22

Sample Location: 60 OLYMPIA WOBURN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	82		30-130
Phenol-d6	84		30-130
Nitrobenzene-d5	84		30-130
2-Fluorobiphenyl	70		30-130
2,4,6-Tribromophenol	81		30-130
4-Terphenyl-d14	55		30-130

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8270E
Analytical Date: 05/26/22 12:28
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 05/25/22 21:28

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG1642995-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	69	--
Bis(2-chloroethyl)ether	ND		ug/kg	69	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	69	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	69	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	99	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	69	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	69	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	69	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8270E
Analytical Date: 05/26/22 12:28
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 05/25/22 21:28

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG1642995-1					
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	69	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	69	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	69	--
2-Chlorophenol	ND		ug/kg	69	--
2,4-Dichlorophenol	ND		ug/kg	69	--
2,4-Dimethylphenol	ND		ug/kg	69	--
2-Nitrophenol	ND		ug/kg	360	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	790	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Biphenyl	ND		ug/kg	33	--

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8270E
Analytical Date: 05/26/22 12:28
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 05/25/22 21:28

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG1642995-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	83		30-130
Phenol-d6	87		30-130
Nitrobenzene-d5	81		30-130
2-Fluorobiphenyl	85		30-130
2,4,6-Tribromophenol	88		30-130
4-Terphenyl-d14	86		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1642995-2 WG1642995-3								
Acenaphthene	82		70		40-140	16		30
1,2,4-Trichlorobenzene	83		71		40-140	16		30
Hexachlorobenzene	85		74		40-140	14		30
Bis(2-chloroethyl)ether	85		73		40-140	15		30
2-Chloronaphthalene	86		76		40-140	12		30
1,2-Dichlorobenzene	80		68		40-140	16		30
1,3-Dichlorobenzene	80		67		40-140	18		30
1,4-Dichlorobenzene	81		69		40-140	16		30
3,3'-Dichlorobenzidine	72		59		40-140	20		30
2,4-Dinitrotoluene	92		77		40-140	18		30
2,6-Dinitrotoluene	93		82		40-140	13		30
Azobenzene	79		70		40-140	12		30
Fluoranthene	89		76		40-140	16		30
4-Bromophenyl phenyl ether	84		73		40-140	14		30
Bis(2-chloroisopropyl)ether	91		77		40-140	17		30
Bis(2-chloroethoxy)methane	84		74		40-140	13		30
Hexachlorobutadiene	80		69		40-140	15		30
Hexachloroethane	77		66		40-140	15		30
Isophorone	82		71		40-140	14		30
Naphthalene	84		72		40-140	15		30
Nitrobenzene	78		69		40-140	12		30
Bis(2-ethylhexyl)phthalate	88		75		40-140	16		30
Butyl benzyl phthalate	90		75		40-140	18		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1642995-2 WG1642995-3								
Di-n-butylphthalate	89		77		40-140	14		30
Di-n-octylphthalate	92		78		40-140	16		30
Diethyl phthalate	86		74		40-140	15		30
Dimethyl phthalate	89		79		40-140	12		30
Benzo(a)anthracene	90		77		40-140	16		30
Benzo(a)pyrene	98		83		40-140	17		30
Benzo(b)fluoranthene	92		74		40-140	22		30
Benzo(k)fluoranthene	92		82		40-140	11		30
Chrysene	90		77		40-140	16		30
Acenaphthylene	92		81		40-140	13		30
Anthracene	89		76		40-140	16		30
Benzo(ghi)perylene	93		82		40-140	13		30
Fluorene	87		74		40-140	16		30
Phenanthrene	88		75		40-140	16		30
Dibenzo(a,h)anthracene	94		81		40-140	15		30
Indeno(1,2,3-cd)pyrene	98		84		40-140	15		30
Pyrene	90		76		40-140	17		30
Aniline	73		59		40-140	21		30
4-Chloroaniline	74		62		40-140	18		30
Dibenzofuran	85		73		40-140	15		30
2-Methylnaphthalene	89		77		40-140	14		30
Acetophenone	82		70		40-140	16		30
2,4,6-Trichlorophenol	95		85		30-130	11		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1642995-2 WG1642995-3								
2-Chlorophenol	89		78		30-130	13		30
2,4-Dichlorophenol	92		81		30-130	13		30
2,4-Dimethylphenol	90		78		30-130	14		30
2-Nitrophenol	88		80		30-130	10		30
4-Nitrophenol	78		69		30-130	12		30
2,4-Dinitrophenol	79		74		30-130	7		30
Pentachlorophenol	84		73		30-130	14		30
Phenol	100		86		30-130	15		30
2-Methylphenol	89		78		30-130	13		30
3-Methylphenol/4-Methylphenol	91		80		30-130	13		30
2,4,5-Trichlorophenol	97		86		30-130	12		30
Biphenyl	87		77		40-140	12		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	100		83		30-130
Phenol-d6	97		84		30-130
Nitrobenzene-d5	83		74		30-130
2-Fluorobiphenyl	91		80		30-130
2,4,6-Tribromophenol	94		81		30-130
4-Terphenyl-d14	94		81		30-130

PETROLEUM HYDROCARBONS

Project Name: OLYMPIA
Project Number: 2491010
Lab Number: L2227216
Report Date: 05/31/22

SAMPLE RESULTS

Lab ID: L2227216-01
Client ID: COMP-SS-05-20-22
Sample Location: 60 OLYMPIA WOBURN

Date Collected: 05/20/22 14:40
Date Received: 05/23/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8015D(M)
Analytical Date: 05/26/22 16:33
Analyst: JB
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 05/26/22 05:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH (C10-C36)	387000		ug/kg	39400	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	83		40-140

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 05/26/22 09:08
Analyst: SC

Extraction Method: EPA 3546
Extraction Date: 05/25/22 13:56

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01 Batch: WG1642879-1					
TPH (C10-C36)	ND		ug/kg	32100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	76		40-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01 Batch: WG1642879-2								
TPH (C10-C36)	79		-		40-140	-		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
o-Terphenyl	72				40-140

PCBS

Project Name: OLYMPIA
Project Number: 2491010
Lab Number: L2227216
Report Date: 05/31/22

SAMPLE RESULTS

Lab ID: L2227216-01
Client ID: COMP-SS-05-20-22
Sample Location: 60 OLYMPIA WOBURN

Date Collected: 05/20/22 14:40
Date Received: 05/23/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 97,8082A
Analytical Date: 05/27/22 07:24
Analyst: AD
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 05/26/22 10:22
Cleanup Method: EPA 3665A
Cleanup Date: 05/26/22
Cleanup Method: EPA 3660B
Cleanup Date: 05/26/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	39.0	--	1	A
Aroclor 1221	ND		ug/kg	39.0	--	1	A
Aroclor 1232	ND		ug/kg	39.0	--	1	A
Aroclor 1242	ND		ug/kg	39.0	--	1	A
Aroclor 1248	ND		ug/kg	39.0	--	1	A
Aroclor 1254	ND		ug/kg	39.0	--	1	B
Aroclor 1260	ND		ug/kg	39.0	--	1	A
Aroclor 1262	ND		ug/kg	39.0	--	1	A
Aroclor 1268	ND		ug/kg	39.0	--	1	A
PCBs, Total	ND		ug/kg	39.0	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	55		30-150	B
Decachlorobiphenyl	86		30-150	B
2,4,5,6-Tetrachloro-m-xylene	53		30-150	A
Decachlorobiphenyl	54		30-150	A

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8082A
Analytical Date: 05/26/22 12:09
Analyst: JM

Extraction Method: EPA 3546
Extraction Date: 05/25/22 11:12
Cleanup Method: EPA 3665A
Cleanup Date: 05/25/22
Cleanup Method: EPA 3660B
Cleanup Date: 05/26/22

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01 Batch: WG1642781-1						
Aroclor 1016	ND		ug/kg	32.7	--	A
Aroclor 1221	ND		ug/kg	32.7	--	A
Aroclor 1232	ND		ug/kg	32.7	--	A
Aroclor 1242	ND		ug/kg	32.7	--	A
Aroclor 1248	ND		ug/kg	32.7	--	A
Aroclor 1254	ND		ug/kg	32.7	--	A
Aroclor 1260	ND		ug/kg	32.7	--	A
Aroclor 1262	ND		ug/kg	32.7	--	A
Aroclor 1268	ND		ug/kg	32.7	--	A
PCBs, Total	ND		ug/kg	32.7	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	62		30-150	B
Decachlorobiphenyl	56		30-150	B
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	47		30-150	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01 Batch: WG1642781-2 WG1642781-3									
Aroclor 1016	58		61		40-140	5		30	A
Aroclor 1260	43		45		40-140	5		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	62		64		30-150	B
Decachlorobiphenyl	57		60		30-150	B
2,4,5,6-Tetrachloro-m-xylene	62		64		30-150	A
Decachlorobiphenyl	49		51		30-150	A

METALS

Project Name: OLYMPIA
Project Number: 2491010
Lab Number: L2227216
Report Date: 05/31/22

SAMPLE RESULTS

Lab ID: L2227216-01
Client ID: COMP-SS-05-20-22
Sample Location: 60 OLYMPIA WOBURN

Date Collected: 05/20/22 14:40
Date Received: 05/23/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab											
Arsenic, Total	12.9		mg/kg	0.477	--	1	05/28/22 07:55	05/31/22 11:11	EPA 3050B	97,6010D	SB
Barium, Total	878		mg/kg	4.77	--	10	05/28/22 07:55	05/31/22 14:11	EPA 3050B	97,6010D	MC
Cadmium, Total	ND		mg/kg	0.477	--	1	05/28/22 07:55	05/31/22 11:11	EPA 3050B	97,6010D	SB
Chromium, Total	558		mg/kg	0.477	--	1	05/28/22 07:55	05/31/22 11:11	EPA 3050B	97,6010D	SB
Lead, Total	36.1		mg/kg	2.38	--	1	05/28/22 07:55	05/31/22 11:11	EPA 3050B	97,6010D	SB
Mercury, Total	0.233		mg/kg	0.078	--	1	05/28/22 12:00	05/29/22 10:13	EPA 7471B	97,7471B	AW
Selenium, Total	ND		mg/kg	2.38	--	1	05/28/22 07:55	05/31/22 11:11	EPA 3050B	97,6010D	SB
Silver, Total	ND		mg/kg	0.477	--	1	05/28/22 07:55	05/31/22 11:11	EPA 3050B	97,6010D	SB

Project Name: OLYMPIA **Lab Number:** L2227216

Project Number: 2491010 **Report Date:** 05/31/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1644045-1										
Arsenic, Total	ND		mg/kg	0.400	--	1	05/28/22 07:55	05/31/22 09:30	97,6010D	SB
Barium, Total	ND		mg/kg	0.400	--	1	05/28/22 07:55	05/31/22 09:30	97,6010D	SB
Cadmium, Total	ND		mg/kg	0.400	--	1	05/28/22 07:55	05/31/22 09:30	97,6010D	SB
Chromium, Total	ND		mg/kg	0.400	--	1	05/28/22 07:55	05/31/22 09:30	97,6010D	SB
Lead, Total	ND		mg/kg	2.00	--	1	05/28/22 07:55	05/31/22 09:30	97,6010D	SB
Selenium, Total	ND		mg/kg	2.00	--	1	05/28/22 07:55	05/31/22 09:30	97,6010D	SB
Silver, Total	ND		mg/kg	0.400	--	1	05/28/22 07:55	05/31/22 09:30	97,6010D	SB

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1644048-1										
Mercury, Total	ND		mg/kg	0.083	--	1	05/28/22 12:00	05/29/22 09:47	97,7471B	AW

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1644045-2 WG1644045-3 SRM Lot Number: D113-540								
Arsenic, Total	84		85		70-130	1		30
Barium, Total	82		80		75-125	2		30
Cadmium, Total	80		78		75-125	3		30
Chromium, Total	80		82		70-130	2		30
Lead, Total	81		81		72-128	0		30
Selenium, Total	84		84		66-134	0		30
Silver, Total	82		83		70-131	1		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1644048-2 WG1644048-3 SRM Lot Number: D113-540								
Mercury, Total	89		94		60-140	5		30

INORGANICS
&
MISCELLANEOUS

Project Name:	OLYMPIA	**Lab Number:**	L2227216
Project Number:	2491010	**Report Date:**	05/31/22

SAMPLE RESULTS

Lab ID:	L2227216-01	Date Collected:	05/20/22 14:40
Client ID:	COMP-SS-05-20-22	Date Received:	05/23/22
Sample Location:	60 OLYMPIA WOBURN	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Soil		

Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Medium
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	05/24/22 13:05	1,1030	PA

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

SAMPLE RESULTS

Lab ID: L2227216-01
Client ID: COMP-SS-05-20-22
Sample Location: 60 OLYMPIA WOBURN

Date Collected: 05/20/22 14:40
Date Received: 05/23/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Specific Conductance @ 25 C	44		umhos/cm	10	--	1	-	05/23/22 22:23	1,9050A	AS
Solids, Total	83.0		%	0.100	NA	1	-	05/23/22 22:05	121,2540G	TR
pH (H)	7.4		SU	-	NA	1	-	05/23/22 21:02	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	05/26/22 12:20	05/26/22 15:12	125,7.3	MJ
Sulfide, Reactive	ND		mg/kg	10	--	1	05/26/22 12:20	05/26/22 14:39	125,7.3	MJ

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

SAMPLE RESULTS

Lab ID: L2227216-02
Client ID: SS-03- 05-20-22
Sample Location: 60 OLYMPIA WOBURN

Date Collected: 05/20/22 15:00
Date Received: 05/23/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.6		%	0.100	NA	1	-	05/23/22 22:05	121,2540G	TR

Project Name: OLYMPIA **Lab Number:** L2227216

Project Number: 2491010 **Report Date:** 05/31/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1643110-1										
Cyanide, Reactive	ND		mg/kg	10	--	1	05/26/22 12:20	05/26/22 15:08	125,7.3	MJ
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1643114-1										
Sulfide, Reactive	ND		mg/kg	10	--	1	05/26/22 12:20	05/26/22 14:35	125,7.3	MJ

Lab Control Sample Analysis
Batch Quality Control

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
Report Date: 05/31/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1641945-1								
pH	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1641972-1								
Specific Conductance	100		-		99-101	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1643110-2								
Cyanide, Reactive	94		-		30-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1643114-2								
Sulfide, Reactive	69		-		60-125	-		40

Lab Duplicate Analysis

Batch Quality Control

Project Name: OLYMPIA

Project Number: 2491010

Lab Number: L2227216

Report Date: 05/31/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1641945-2 QC Sample: L2227216-01 Client ID: COMP-SS-05-20-22						
pH (H)	7.4	7.3	SU	1		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1641972-2 QC Sample: L2227216-01 Client ID: COMP-SS-05-20-22						
Specific Conductance @ 25 C	44	43	umhos/cm	2		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1643110-3 QC Sample: L2227216-01 Client ID: COMP-SS-05-20-22						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1643114-3 QC Sample: L2227216-01 Client ID: COMP-SS-05-20-22						
Sulfide, Reactive	ND	ND	mg/kg	NC		40

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2227216
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Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2227216-01A	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L2227216-01B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L2227216-01C	Glass 500ml/16oz unpreserved	A	NA		3.1	Y	Absent		MCP-8082-10(365),IGNIT-1030(14),REACTS(14),PH-9045(1),MCP-8270-21(14),REACTCN(14),TPH-DRO-D(14),COND-9050(28)
L2227216-02A	Vial MeOH preserved	A	NA		3.1	Y	Absent		MCP-8260H-21(14)
L2227216-02B	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: OLYMPIA **Lab Number:** L2227216

Project Number: 2491010 **Report Date:** 05/31/22

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	OLYMPIA	**Lab Number:**	L2227216
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Footnotes

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

Terms

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

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

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

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

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

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

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

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Project Name:	OLYMPIA	**Lab Number:**	L2227216
Project Number:	2491010	**Report Date:**	05/31/22

Data Qualifiers

the identification is based on a mass spectral library search.

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	OLYMPIA	**Lab Number:**	L2227216
Project Number:	2491010	**Report Date:**	05/31/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

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

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

125 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates IIIA, April 1998.

141 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA and IIB, November 2021.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 5/23/22

ALPHA Job #: L2227216

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

Project Information

Project Name: Olympia
Project Location: 60 Olympia Woburn
Project #: 2491010
Project Manager: CABinger
ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Client Information

Client: Verdantas
Address: One Monarch Drive, Littleton, MA
Phone:
Email: cabinger@~~verdantas.com~~ verdantas.com

Turn-Around Time

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

Date Due:

Regulatory Requirements & Project Information Requirements

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

Additional Project Information:

If metals (RCRA 8) exceed, run TCLP

ANALYSIS: VOC: ☑ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☑ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☑ PCB ☐ PEST; TPH: ☑ Quant Only ☐ Fingerprint 8082A; Dry Weight % solids; SpecCond 9050A; pH 9045D; Ignite 1030; Read Cyn + Sulfide 125; TCLP metals - if needed

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Dry Weight	SpecCond	pH	Ignite	Read Cyn + Sulfide	TCLP metals	Sample Comments	TOTAL # BOTTLES
27216-01	Comp-SS-05-20-22	5/20	2:40	Soil	CAB		✓		✓				✓	✓	✓	✓	✓	✓			3
02	SS-03-05-20-22	5/20	3:00pm	Soil	CAB	✓								✓							2

Container Type
Preservative

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
CABinger	5/20/22 4:50	MCM AAL	5/23/22 1415
MCM	5/23/22 1548	[signature]	5/23/22 15:48

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

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

Method Blank Summary
Form 4
Volatiles

Client	: Verdantas, LLC	**Lab Number**	: L2227216
Project Name	: OLYMPIA	**Project Number**	: 2491010
Lab Sample ID	: WG1644520-5	**Lab File ID**	: V11220526B05
Instrument ID	: VOA111		
Matrix	: SOIL	**Analysis Date**	: 05/26/22 08:37

Client Sample No.	Lab Sample ID	Analysis Date
WG1644520-3LCS	WG1644520-3	05/26/22 06:58
WG1644520-4LCSD	WG1644520-4	05/26/22 07:48
SS-03- 05-20-22	L2227216-02	05/26/22 12:21

Calibration Verification Summary
Form 7
Volatiles

Client	: Verdantas, LLC	Lab Number	: L2227216
Project Name	: OLYMPIA	Project Number	: 2491010
Instrument ID	: VOA111	Calibration Date	: 05/26/22 06:58
Lab File ID	: V11220526B01	Init. Calib. Date(s)	: 04/19/22 04/19/22
Sample No	: WG1644520-2	Init. Calib. Times	: 19:49 23:08
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	107	-.01
Dichlorodifluoromethane	0.234	0.242	-	-3.4	20	110	0
Chloromethane	0.249	0.283	-	-13.7	20	124	0
Vinyl chloride	0.247	0.307	-	-24.3*	20	132	0
Bromomethane	0.149	0.205	-	-37.6*	20	159	-.01
Chloroethane	0.142	0.17	-	-19.7	20	131	0
Trichlorofluoromethane	0.308	0.332	-	-7.8	20	114	0
Ethyl ether	0.104	0.117	-	-12.5	20	118	-.01
1,1-Dichloroethene	0.181	0.185	-	-2.2	20	109	0
Carbon disulfide	0.561	0.55	-	2	20	108	-.01
Freon-113	0.187	0.196	-	-4.8	20	110	-.01
Acrolein	0.034	0.034	-	0	20	114	-.01
Methylene chloride	0.243	0.243	-	0	20	116	-.01
Acetone	40	39.032	-	2.4	20	102	-.01
trans-1,2-Dichloroethene	0.212	0.219	-	-3.3	20	112	-.01
Methyl acetate	0.145	0.153	-	-5.5	20	124	-.01
Methyl tert-butyl ether	0.578	0.611	-	-5.7	20	114	-.02
tert-Butyl alcohol	0.023	0.026	-	-13	20	114	-.02
Diisopropyl ether	0.764	0.852	-	-11.5	20	120	-.01
1,1-Dichloroethane	0.396	0.429	-	-8.3	20	116	-.01
Halothane	0.168	0.16	-	4.8	20	107	0
Acrylonitrile	0.065	0.073	-	-12.3	20	117	-.01
Ethyl tert-butyl ether	0.756	0.826	-	-9.3	20	118	-.01
Vinyl acetate	0.58	0.623	-	-7.4	20	116	-.02
cis-1,2-Dichloroethene	0.243	0.255	-	-4.9	20	113	-.01
2,2-Dichloropropane	0.344	0.348	-	-1.2	20	110	-.01
Bromochloromethane	0.116	0.119	-	-2.6	20	109	-.01
Cyclohexane	0.363	0.383	-	-5.5	20	114	-.01
Chloroform	0.419	0.426	-	-1.7	20	114	-.02
Ethyl acetate	0.217	0.228	-	-5.1	20	115	-.01
Carbon tetrachloride	0.304	0.296	-	2.6	20	105	-.01
Tetrahydrofuran	0.062	0.065	-	-4.8	20	115	-.02
Dibromofluoromethane	0.254	0.245	-	3.5	20	103	-.02
1,1,1-Trichloroethane	0.317	0.329	-	-3.8	20	108	-.01
2-Butanone	0.104	0.105	-	-1	20	120	-.02
1,1-Dichloropropene	40	39.948	-	0.1	20	110	-.01
Benzene	0.856	0.916	-	-7	20	115	-.01
tert-Amyl methyl ether	0.658	0.696	-	-5.8	20	114	-.01
1,2-Dichloroethane-d4	0.26	0.259	-	0.4	20	108	-.02
1,2-Dichloroethane	0.317	0.333	-	-5	20	114	-.01
Methyl cyclohexane	0.37	0.369	-	0.3	20	107	-.01
Trichloroethene	0.221	0.233	-	-5.4	20	112	-.02
Dibromomethane	0.141	0.145	-	-2.8	20	111	-.02

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: Verdantas, LLC	Lab Number	: L2227216
Project Name	: OLYMPIA	Project Number	: 2491010
Instrument ID	: VOA111	Calibration Date	: 05/26/22 06:58
Lab File ID	: V11220526B01	Init. Calib. Date(s)	: 04/19/22 04/19/22
Sample No	: WG1644520-2	Init. Calib. Times	: 19:49 23:08
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dichloropropane	0.238	0.261	-	-9.7	20	118	-.02
2-Chloroethyl vinyl ether	0.123	0.13	-	-5.7	20	109	-.02
Bromodichloromethane	0.323	0.336	-	-4	20	111	-.01
1,4-Dioxane	2000	2013.324	-	-0.7	20	107	-.02
cis-1,3-Dichloropropene	0.386	0.409	-	-6	20	113	-.02
Chlorobenzene-d5	1	1	-	0	20	104	-.01
Toluene-d8	1.287	1.311	-	-1.9	20	106	0
Toluene	40	40.364	-	-0.9	20	110	-.01
4-Methyl-2-pentanone	0.097	0.112	-	-15.5	20	112	-.01
Tetrachloroethene	0.291	0.291	-	0	20	101	0
trans-1,3-Dichloropropene	0.467	0.499	-	-6.9	20	111	-.01
Ethyl methacrylate	0.366	0.381	-	-4.1	20	109	-.01
1,1,2-Trichloroethane	0.21	0.233	-	-11	20	116	-.02
Chlorodibromomethane	0.309	0.322	-	-4.2	20	106	-.01
1,3-Dichloropropane	0.435	0.48	-	-10.3	20	114	-.01
1,2-Dibromoethane	0.252	0.271	-	-7.5	20	109	-.01
2-Hexanone	0.215	0.207	-	3.7	20	108	-.02
Chlorobenzene	0.833	0.868	-	-4.2	20	110	-.01
Ethylbenzene	1.403	1.463	-	-4.3	20	111	0
1,1,1,2-Tetrachloroethane	0.302	0.318	-	-5.3	20	106	-.01
p/m Xylene	0.537	0.568	-	-5.8	20	109	-.01
o Xylene	0.526	0.561	-	-6.7	20	110	-.01
Styrene	0.914	0.957	-	-4.7	20	110	-.01
1,4-Dichlorobenzene-d4	1	1	-	0	20	102	-.01
Bromoform	0.367	0.377	-	-2.7	20	105	-.01
Isopropylbenzene	2.583	2.762	-	-6.9	20	109	-.01
4-Bromofluorobenzene	0.889	0.9	-	-1.2	20	102	-.01
Bromobenzene	0.678	0.69	-	-1.8	20	105	0
n-Propylbenzene	3.067	3.385	-	-10.4	20	112	-.01
1,4-Dichlorobutane	0.878	0.973	-	-10.8	20	115	0
1,1,2,2-Tetrachloroethane	0.589	0.675	-	-14.6	20	115	-.01
4-Ethyltoluene	2.568	2.786	-	-8.5	20	110	-.01
2-Chlorotoluene	1.845	1.983	-	-7.5	20	111	0
1,3,5-Trimethylbenzene	2.227	2.409	-	-8.2	20	110	-.01
1,2,3-Trichloropropane	0.484	0.547	-	-13	20	115	-.01
trans-1,4-Dichloro-2-buten	0.211	0.234	-	-10.9	20	113	-.01
4-Chlorotoluene	1.957	2.136	-	-9.1	20	113	-.01
tert-Butylbenzene	1.909	1.992	-	-4.3	20	106	0
1,2,4-Trimethylbenzene	2.257	2.432	-	-7.8	20	110	-.01
sec-Butylbenzene	2.833	3.063	-	-8.1	20	109	0
p-Isopropyltoluene	2.479	2.612	-	-5.4	20	107	-.01
1,3-Dichlorobenzene	1.33	1.395	-	-4.9	20	109	-.01
1,4-Dichlorobenzene	1.347	1.41	-	-4.7	20	109	-.01

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: Verdantas, LLC	Lab Number	: L2227216
Project Name	: OLYMPIA	Project Number	: 2491010
Instrument ID	: VOA111	Calibration Date	: 05/26/22 06:58
Lab File ID	: V11220526B01	Init. Calib. Date(s)	: 04/19/22 04/19/22
Sample No	: WG1644520-2	Init. Calib. Times	: 19:49 23:08
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
p-Diethylbenzene	1.487	1.592	-	-7.1	20	109	0
n-Butylbenzene	2.221	2.474	-	-11.4	20	113	0
1,2-Dichlorobenzene	1.269	1.32	-	-4	20	108	-.01
1,2,4,5-Tetramethylbenzene	2.425	2.511	-	-3.5	20	106	0
1,2-Dibromo-3-chloropropan	0.104	0.099	-	4.8	20	97	0
1,3,5-Trichlorobenzene	0.947	0.959	-	-1.3	20	105	-.01
Hexachlorobutadiene	0.412	0.391	-	5.1	20	97	0
1,2,4-Trichlorobenzene	0.854	0.852	-	0.2	20	103	0
Naphthalene	1.992	1.994	-	-0.1	20	105	0
1,2,3-Trichlorobenzene	0.732	0.73	-	0.3	20	103	0

* Value outside of QC limits.

ANALYTICAL REPORT

Lab Number:	L2228447
Client:	Verdantas, LLC One Monarch Drive Littleton, MA 01460
ATTN:	Christene Binger
Phone:	(978) 679-1600
Project Name:	OLYMPIA
Project Number:	2491010
Report Date:	06/07/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2228447
Report Date: 06/07/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2228447-01	COMP-SS-05-20-22	SOIL	60 OLYMPIA WOBURN	05/20/22 14:40	05/23/22

Project Name:	OLYMPIA	**Lab Number:**	L2228447
Project Number:	2491010	**Report Date:**	06/07/22

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

Please contact Project Management at 800-624-9220 with any questions.

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2228447
Report Date: 06/07/22

Case Narrative (continued)

Sample Receipt

The analysis performed was specified by the client.

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

Authorized Signature: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative

Date: 06/07/22

METALS

Project Name: OLYMPIA
Project Number: 2491010
Lab Number: L2228447
Report Date: 06/07/22

SAMPLE RESULTS

Lab ID: L2228447-01
Client ID: COMP-SS-05-20-22
Sample Location: 60 OLYMPIA WOBURN
Sample Depth:
Matrix: Soil

Date Collected: 05/20/22 14:40
Date Received: 05/23/22
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 06/01/22 22:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Chromium, TCLP	ND		mg/l	0.200	--	1	06/04/22 10:58	06/07/22 12:51	EPA 3015	1,6010D	SB

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2228447
Report Date: 06/07/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab for sample(s): 01 Batch: WG1646382-1										
Chromium, TCLP	ND		mg/l	0.200	--	1	06/04/22 10:58	06/07/22 12:33	1,6010D	SB

Prep Information

Digestion Method: EPA 3015

TCLP/SPLP Extraction Date: 05/31/22 15:23

Lab Control Sample Analysis
Batch Quality Control

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2228447
Report Date: 06/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01 Batch: WG1646382-2								
Chromium, TCLP	89		-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2228447
Report Date: 06/07/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1646382-3 QC Sample: L2228447-01 Client ID: COMP-SS-05-20-22												
Chromium, TCLP	ND	2	1.86	93		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: OLYMPIA

Project Number: 2491010

Lab Number: L2228447

Report Date: 06/07/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1646382-4 QC Sample: L2228447-01 Client ID: COMP-SS-05-20-22						
Chromium, TCLP	ND	ND	mg/l	NC		20

Project Name: OLYMPIA
Project Number: 2491010

Lab Number: L2228447
Report Date: 06/07/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2228447-01A	Glass 500ml/16oz unpreserved	A	NA		3.1	Y	Absent		-
L2228447-01X	Plastic 120ml HNO3 preserved Extracts	A	NA		3.1	Y	Absent		CR-CI(180)
L2228447-01X9	Tumble Vessel	A	NA		3.1	Y	Absent		-

*Values in parentheses indicate holding time in days

Project Name:	OLYMPIA	**Lab Number:**	L2228447
Project Number:	2491010	**Report Date:**	06/07/22

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	OLYMPIA	**Lab Number:**	L2228447
Project Number:	2491010	**Report Date:**	06/07/22

Footnotes

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

Terms

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

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

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

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

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

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

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

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Project Name:	OLYMPIA	**Lab Number:**	L2228447
Project Number:	2491010	**Report Date:**	06/07/22

Data Qualifiers

the identification is based on a mass spectral library search.

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: OLYMPIA
Project Number: 2491010
Lab Number: L2228447
Report Date: 06/07/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

L2228447 6/1/22

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA

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

Date Rec'd In Lab: 5/23/22

ALPHA Job #: ~~L2227216~~

Project Information

Project Name: Olympia
Project Location: 60 Olympia Woburn
Project #: 2491010
Project Manager: CABinger
ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☑ EMAIL

Billing Information

☐ Same as Client info PO #:

Client Information

Client: Verdantas
Address: One Monach Drive, Littleton, MA
Phone:
Email: cabinger@~~verdantas.com~~ verdantas.com

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

Regulatory Requirements & Project Information Requirements

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

Additional Project Information:

If metals (RCRA 8) exceed, run TCLP

ANALYSIS: ~~VOC: ☐ 8260 ☐ 624 ☐ 524.2~~ ~~SVOC: ☐ ABN ☐ PAH~~ METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15 ~~METALS: ☐ RCRA5 ☑ RCRA8 ☐ PP13~~ EPH: ☐ Ranges & Targets ☐ Ranges Only VPH: ☐ Ranges & Targets ☐ Ranges Only ~~☑ PCB ☐ PEST~~ 8082A ~~TPH: ☑ Quant Only ☐ Fingerprint~~ Dry weight % solids Specford 9050A pH 9045D Ignite 1030 Read Cyn + Sulfide 125 TCLP-metals + Ignite

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	~~VOC~~	~~SVOC~~	METALS	~~METALS~~	EPH	VPH	~~PCB~~	~~TPH~~	Dry weight % solids	Specford 9050A	pH 9045D	Ignite 1030	Read Cyn + Sulfide 125	TCLP-metals + Ignite	Sample Comments	TOTAL # BOTTLES
66 ~~27216~~-01	Comp-SS-05-20-22	5/20	2:40	Soil	CAB	✓	✓		✓				✓	✓	✓	✓	✓	✓	X		3
28417-02	SS-03-05-20-22	5/20	3:00pm	Soil	CAB	✓								✓							2

Container Type
Preservative

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
CABinger	5/20/22 4:50	MCM AR	5/23/22 1415
MCM	5/23/22 1548	[signature]	5/23/22 15:48

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

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

ANALYTICAL REPORT

Lab Number:	L2232050
Client:	Verdantas, LLC One Monarch Drive Littleton, MA 01460
ATTN:	Christene Binger
Phone:	(978) 679-1600
Project Name:	60 OLYMPIA
Project Number:	2491
Report Date:	06/23/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2232050-01	SS-1-SIDEWALL	SOIL	WOBURN, MA	06/16/22 10:15	06/16/22
L2232050-02	SS-2-SIDEWALL	SOIL	WOBURN, MA	06/16/22 10:16	06/16/22
L2232050-03	SS-3-BOT	SOIL	WOBURN, MA	06/16/22 10:17	06/16/22
L2232050-04	SS-3-BOT-DUP	SOIL	WOBURN, MA	06/16/22 10:18	06/16/22
L2232050-05	SS-4-SIDEWALL	SOIL	WOBURN, MA	06/16/22 10:19	06/16/22
L2232050-06	SS-5-BOT	SOIL	WOBURN, MA	06/16/22 10:20	06/16/22
L2232050-07	SS-6-SIDEWALL	SOIL	WOBURN, MA	06/16/22 10:21	06/16/22
L2232050-08	SS-7-BOT	SOIL	WOBURN, MA	06/16/22 10:22	06/16/22
L2232050-09	SS-8-SIDEWALL	SOIL	WOBURN, MA	06/16/22 10:23	06/16/22
L2232050-10	SS-9-BOT	SOIL	WOBURN, MA	06/16/22 10:24	06/16/22
L2232050-11	SS-10-SIDEWALL	SOIL	WOBURN, MA	06/16/22 10:25	06/16/22

Project Name: 60 OLYMPIA **Lab Number:** L2232050

Project Number: 2491 **Report Date:** 06/23/22

MADEP MCP Response Action Analytical Report Certification

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

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

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

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

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

Project Name:	60 OLYMPIA	**Lab Number:**	L2232050
Project Number:	2491	**Report Date:**	06/23/22

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

Please contact Project Management at 800-624-9220 with any questions.

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

Case Narrative (continued)

MCP Related Narratives

Semivolatile Organics

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

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

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative

Date: 06/23/22

QC OUTLIER SUMMARY REPORT

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment

There are no QC Outliers associated with this report.

ORGANICS

SEMIVOLATILES

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-01
Client ID: SS-1-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:15
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/19/22 17:29
Analyst: ALS
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/18/22 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	160	--	1
Fluoranthene	510		ug/kg	120	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	270		ug/kg	120	--	1
Benzo(a)pyrene	280		ug/kg	160	--	1
Benzo(b)fluoranthene	390		ug/kg	120	--	1
Benzo(k)fluoranthene	140		ug/kg	120	--	1
Chrysene	280		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	82	--	1
Indeno(1,2,3-cd)pyrene	200		ug/kg	160	--	1
Pyrene	430		ug/kg	120	--	1
2-Methylnaphthalene	ND		ug/kg	82	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		30-130
2-Fluorobiphenyl	65		30-130
4-Terphenyl-d14	51		30-130

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-02
Client ID: SS-2-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:16
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/23/22 06:11
Analyst: IM
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 06/18/22 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	160	--	1
Fluoranthene	310		ug/kg	120	--	1
Naphthalene	ND		ug/kg	200	--	1
Benzo(a)anthracene	150		ug/kg	120	--	1
Benzo(a)pyrene	170		ug/kg	160	--	1
Benzo(b)fluoranthene	270		ug/kg	120	--	1
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	160		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	84	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	--	1
Pyrene	250		ug/kg	120	--	1
2-Methylnaphthalene	ND		ug/kg	84	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		30-130
2-Fluorobiphenyl	70		30-130
4-Terphenyl-d14	66		30-130

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-03
Client ID: SS-3-BOT
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:17
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/19/22 18:17
Analyst: ALS
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/18/22 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	160	--	1
Fluoranthene	ND		ug/kg	120	--	1
Naphthalene	ND		ug/kg	200	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	82	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
2-Methylnaphthalene	ND		ug/kg	82	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	68		30-130
2-Fluorobiphenyl	62		30-130
4-Terphenyl-d14	51		30-130

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-04
Client ID: SS-3-BOT-DUP
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:18
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/19/22 18:41
Analyst: ALS
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 06/18/22 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	160	--	1
Fluoranthene	ND		ug/kg	120	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	ND		ug/kg	120	--	1
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	ND		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	81	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	--	1
Pyrene	ND		ug/kg	120	--	1
2-Methylnaphthalene	ND		ug/kg	81	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	51		30-130
2-Fluorobiphenyl	49		30-130
4-Terphenyl-d14	36		30-130

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-05
Client ID: SS-4-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:19
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/19/22 19:04
Analyst: ALS
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 06/18/22 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	870		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	460		ug/kg	110	--	1
Benzo(a)pyrene	500		ug/kg	140	--	1
Benzo(b)fluoranthene	750		ug/kg	110	--	1
Benzo(k)fluoranthene	280		ug/kg	110	--	1
Chrysene	500		ug/kg	110	--	1
Acenaphthylene	350		ug/kg	140	--	1
Anthracene	260		ug/kg	110	--	1
Benzo(ghi)perylene	290		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	97		ug/kg	75	--	1
Indeno(1,2,3-cd)pyrene	400		ug/kg	140	--	1
Pyrene	880		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	75	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	58		30-130
2-Fluorobiphenyl	59		30-130
4-Terphenyl-d14	55		30-130

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-06
Client ID: SS-5-BOT
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:20
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/19/22 19:28
Analyst: ALS
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 06/18/22 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	79	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	79	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	58		30-130
2-Fluorobiphenyl	57		30-130
4-Terphenyl-d14	49		30-130

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-07
Client ID: SS-6-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:21
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/19/22 19:52
Analyst: ALS
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 06/18/22 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	160	--	1
Fluoranthene	250		ug/kg	120	--	1
Naphthalene	ND		ug/kg	210	--	1
Benzo(a)anthracene	120		ug/kg	120	--	1
Benzo(a)pyrene	ND		ug/kg	160	--	1
Benzo(b)fluoranthene	190		ug/kg	120	--	1
Benzo(k)fluoranthene	ND		ug/kg	120	--	1
Chrysene	130		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	ND		ug/kg	120	--	1
Benzo(ghi)perylene	ND		ug/kg	160	--	1
Fluorene	ND		ug/kg	210	--	1
Phenanthrene	ND		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	86	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	--	1
Pyrene	210		ug/kg	120	--	1
2-Methylnaphthalene	ND		ug/kg	86	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	70		30-130
2-Fluorobiphenyl	72		30-130
4-Terphenyl-d14	61		30-130

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-08
Client ID: SS-7-BOT
Sample Location: WOBURN, MA

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/23/22 06:34
Analyst: IM
Percent Solids: 76%

Date Collected: 06/16/22 10:22
Date Received: 06/16/22
Field Prep: Not Specified

Extraction Method: EPA 3546
Extraction Date: 06/18/22 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	170	--	1
Fluoranthene	960		ug/kg	130	--	1
Naphthalene	2700		ug/kg	220	--	1
Benzo(a)anthracene	570		ug/kg	130	--	1
Benzo(a)pyrene	760		ug/kg	170	--	1
Benzo(b)fluoranthene	1000		ug/kg	130	--	1
Benzo(k)fluoranthene	260		ug/kg	130	--	1
Chrysene	630		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	170	--	1
Anthracene	180		ug/kg	130	--	1
Benzo(ghi)perylene	490		ug/kg	170	--	1
Fluorene	ND		ug/kg	220	--	1
Phenanthrene	590		ug/kg	130	--	1
Dibenzo(a,h)anthracene	140		ug/kg	90	--	1
Indeno(1,2,3-cd)pyrene	550		ug/kg	170	--	1
Pyrene	770		ug/kg	130	--	1
2-Methylnaphthalene	120		ug/kg	90	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	77		30-130
2-Fluorobiphenyl	72		30-130
4-Terphenyl-d14	72		30-130

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-09
Client ID: SS-8-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:23
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/19/22 20:39
Analyst: ALS
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 06/18/22 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	840		ug/kg	110	--	1
Naphthalene	930		ug/kg	190	--	1
Benzo(a)anthracene	440		ug/kg	110	--	1
Benzo(a)pyrene	470		ug/kg	150	--	1
Benzo(b)fluoranthene	580		ug/kg	110	--	1
Benzo(k)fluoranthene	200		ug/kg	110	--	1
Chrysene	400		ug/kg	110	--	1
Acenaphthylene	160		ug/kg	150	--	1
Anthracene	170		ug/kg	110	--	1
Benzo(ghi)perylene	270		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	340		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	80	--	1
Indeno(1,2,3-cd)pyrene	340		ug/kg	150	--	1
Pyrene	700		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	80	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		30-130
2-Fluorobiphenyl	65		30-130
4-Terphenyl-d14	61		30-130

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-10
Client ID: SS-9-BOT
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:24
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/23/22 05:49
Analyst: IM
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 06/18/22 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	180	--	1
Fluoranthene	1700		ug/kg	130	--	1
Naphthalene	1500		ug/kg	220	--	1
Benzo(a)anthracene	930		ug/kg	130	--	1
Benzo(a)pyrene	1100		ug/kg	180	--	1
Benzo(b)fluoranthene	1400		ug/kg	130	--	1
Benzo(k)fluoranthene	460		ug/kg	130	--	1
Chrysene	960		ug/kg	130	--	1
Acenaphthylene	ND		ug/kg	180	--	1
Anthracene	320		ug/kg	130	--	1
Benzo(ghi)perylene	730		ug/kg	180	--	1
Fluorene	ND		ug/kg	220	--	1
Phenanthrene	1400		ug/kg	130	--	1
Dibenzo(a,h)anthracene	160		ug/kg	94	--	1
Indeno(1,2,3-cd)pyrene	840		ug/kg	180	--	1
Pyrene	1400		ug/kg	130	--	1
2-Methylnaphthalene	95		ug/kg	94	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	83		30-130
2-Fluorobiphenyl	76		30-130
4-Terphenyl-d14	71		30-130

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-11
Client ID: SS-10-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:25
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/23/22 05:26
Analyst: IM
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 06/18/22 16:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	160	--	1
Fluoranthene	1000		ug/kg	120	--	1
Naphthalene	2400		ug/kg	200	--	1
Benzo(a)anthracene	530		ug/kg	120	--	1
Benzo(a)pyrene	630		ug/kg	160	--	1
Benzo(b)fluoranthene	850		ug/kg	120	--	1
Benzo(k)fluoranthene	210		ug/kg	120	--	1
Chrysene	530		ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	160		ug/kg	120	--	1
Benzo(ghi)perylene	360		ug/kg	160	--	1
Fluorene	ND		ug/kg	200	--	1
Phenanthrene	460		ug/kg	120	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	85	--	1
Indeno(1,2,3-cd)pyrene	420		ug/kg	160	--	1
Pyrene	830		ug/kg	120	--	1
2-Methylnaphthalene	ND		ug/kg	85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	80		30-130
2-Fluorobiphenyl	74		30-130
4-Terphenyl-d14	79		30-130

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8270E
Analytical Date: 06/18/22 15:50
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 06/17/22 21:14

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-11 Batch: WG1652246-1					
Acenaphthene	ND		ug/kg	130	--
Fluoranthene	ND		ug/kg	98	--
Naphthalene	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	69	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
2-Methylnaphthalene	ND		ug/kg	69	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		30-130
Phenol-d6	76		30-130
Nitrobenzene-d5	69		30-130
2-Fluorobiphenyl	72		30-130
2,4,6-Tribromophenol	77		30-130
4-Terphenyl-d14	76		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2232050
Report Date: 06/23/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-11 Batch: WG1652246-2 WG1652246-3								
Acenaphthene	74		77		40-140	4		30
Fluoranthene	77		78		40-140	1		30
Naphthalene	76		78		40-140	3		30
Benzo(a)anthracene	76		78		40-140	3		30
Benzo(a)pyrene	82		85		40-140	4		30
Benzo(b)fluoranthene	74		77		40-140	4		30
Benzo(k)fluoranthene	78		80		40-140	3		30
Chrysene	76		78		40-140	3		30
Acenaphthylene	80		81		40-140	1		30
Anthracene	77		79		40-140	3		30
Benzo(ghi)perylene	77		79		40-140	3		30
Fluorene	77		78		40-140	1		30
Phenanthrene	77		78		40-140	1		30
Dibenzo(a,h)anthracene	76		78		40-140	3		30
Indeno(1,2,3-cd)pyrene	78		81		40-140	4		30
Pyrene	76		77		40-140	1		30
2-Methylnaphthalene	78		80		40-140	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 60 OLYMPIA

Project Number: 2491

Lab Number: L2232050

Report Date: 06/23/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-11 Batch: WG1652246-2 WG1652246-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	83		87		30-130
Phenol-d6	83		86		30-130
Nitrobenzene-d5	75		79		30-130
2-Fluorobiphenyl	78		78		30-130
2,4,6-Tribromophenol	80		80		30-130
4-Terphenyl-d14	77		76		30-130

INORGANICS
&
MISCELLANEOUS

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-01
Client ID: SS-1-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:15
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.4		%	0.100	NA	1	-	06/18/22 10:48	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-02
Client ID: SS-2-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:16
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.5		%	0.100	NA	1	-	06/18/22 10:48	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-03
Client ID: SS-3-BOT
Sample Location: WOBURN, MA

Sample Depth:
Matrix: Soil

Date Collected: 06/16/22 10:17
Date Received: 06/16/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.6		%	0.100	NA	1	-	06/18/22 10:48	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-04
Client ID: SS-3-BOT-DUP
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:18
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.1		%	0.100	NA	1	-	06/18/22 10:48	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-05
Client ID: SS-4-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:19
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.0		%	0.100	NA	1	-	06/18/22 10:48	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-06
Client ID: SS-5-BOT
Sample Location: WOBURN, MA

Sample Depth:
Matrix: Soil

Date Collected: 06/16/22 10:20
Date Received: 06/16/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.7		%	0.100	NA	1	-	06/18/22 10:48	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-07
Client ID: SS-6-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:21
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.2		%	0.100	NA	1	-	06/18/22 10:48	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-08
Client ID: SS-7-BOT
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:22
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.8		%	0.100	NA	1	-	06/18/22 10:48	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-09
Client ID: SS-8-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:23
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.4		%	0.100	NA	1	-	06/18/22 10:48	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-10
Client ID: SS-9-BOT
Sample Location: WOBURN, MA

Sample Depth:
Matrix: Soil

Date Collected: 06/16/22 10:24
Date Received: 06/16/22
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.5		%	0.100	NA	1	-	06/18/22 10:48	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

SAMPLE RESULTS

Lab ID: L2232050-11
Client ID: SS-10-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/16/22 10:25
Date Received: 06/16/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.7		%	0.100	NA	1	-	06/18/22 10:48	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: 60 OLYMPIA

Project Number: 2491

Lab Number: L2232050

Report Date: 06/23/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-11 QC Batch ID: WG1652413-1 QC Sample: L2232050-01 Client ID: SS-1-SIDEWALL						
Solids, Total	84.4	83.7	%	1		20

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2232050
Report Date: 06/23/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2232050-01A	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		TS(7),MCP-8270-21(14)
L2232050-02A	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		TS(7),MCP-8270-21(14)
L2232050-03A	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		TS(7),MCP-8270-21(14)
L2232050-04A	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		TS(7),MCP-8270-21(14)
L2232050-05A	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		TS(7),MCP-8270-21(14)
L2232050-06A	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		TS(7),MCP-8270-21(14)
L2232050-07A	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		TS(7),MCP-8270-21(14)
L2232050-08A	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		TS(7),MCP-8270-21(14)
L2232050-09A	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		TS(7),MCP-8270-21(14)
L2232050-10A	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		TS(7),MCP-8270-21(14)
L2232050-11A	Glass 120ml/4oz unpreserved	A	NA		5.1	Y	Absent		TS(7),MCP-8270-21(14)

*Values in parentheses indicate holding time in days

Project Name: 60 OLYMPIA **Lab Number:** L2232050

Project Number: 2491 **Report Date:** 06/23/22

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	60 OLYMPIA	**Lab Number:**	L2232050
Project Number:	2491	**Report Date:**	06/23/22

Footnotes

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

Terms

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

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

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

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

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

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

Report Format: Data Usability Report

Project Name:	60 OLYMPIA	**Lab Number:**	L2232050
Project Number:	2491	**Report Date:**	06/23/22

Data Qualifiers

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

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

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	60 OLYMPIA	**Lab Number:**	L2232050
Project Number:	2491	**Report Date:**	06/23/22

REFERENCES

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

141 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA and IIB, November 2021.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 6/16/22

ALPHA Job #: L2232050

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: Verdantas
Address: One Monarch Dr
Littleton, MA
Phone: 978-679-1600
Email: CABinger@verdantas.com

Project Information

Project Name: 60 Olympia
Project Location: Woburn, MA
Project #: 2491
Project Manager: Christene Binger
ALPHA Quote #:

Turn-Around Time

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

Date Due: 5 day TAT

Additional Project Information:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

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

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☒ PAH 8270D; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	PAH 8270D	Sample Comments	Total # Bottles
32050-01	SS-1-SIDEWALL	6/16/22	10:15	S	ARP	X		1
-02	SS-2-SIDEWALL		10:16					
-03	SS-3-BOT		10:17					
-04	SS-3-BOT-DUP ~~SS-4-SIDEWALL~~ ARP		10:18					
-05	~~SS-5-BOT~~ ARP SS-4-SIDEWALL		10:19					
-06	ARP ~~SS-6-SIDEWALL~~ SS-5-BOT		10:20					
-07	ARP ~~SS-7-BOT~~ SS-6-SIDEWALL		10:21					
-08	SS-7-BOT		10:22					
-09	SS-8-SIDEWALL		10:23					
-10	SS-9-BOT		10:24					
-11	SS-10-SIDEWALL		10:25					

Container Type	A	A
Preservative	X	4

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	6-16-22 13:11	[illegible]	6/16/22 13:11

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

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

ANALYTICAL REPORT

Lab Number:	L2234343
Client:	Verdantas, LLC One Monarch Drive Littleton, MA 01460
ATTN:	Christene Binger
Phone:	(978) 679-1600
Project Name:	60 OLYMPIA
Project Number:	2491
Report Date:	07/01/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

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

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2234343
Report Date: 07/01/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2234343-01	SS-11-SIDEWALL	SOIL	WOBURN, MA	06/28/22 12:55	06/28/22
L2234343-02	SS-12-BOT	SOIL	WOBURN, MA	06/28/22 13:05	06/28/22
L2234343-03	SS-13-SIDEWALL	SOIL	WOBURN, MA	06/28/22 13:15	06/28/22
L2234343-04	SS-14-SIDEWALL	SOIL	WOBURN, MA	06/28/22 13:25	06/28/22
L2234343-05	SS-15-SIDEWALL	SOIL	WOBURN, MA	06/28/22 13:35	06/28/22
L2234343-06	SS-16-BOT	SOIL	WOBURN, MA	06/28/22 13:45	06/28/22

Project Name: 60 OLYMPIA **Lab Number:** L2234343

Project Number: 2491 **Report Date:** 07/01/22

MADEP MCP Response Action Analytical Report Certification

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

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

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

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

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

Project Name:	60 OLYMPIA	**Lab Number:**	L2234343
Project Number:	2491	**Report Date:**	07/01/22

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	60 OLYMPIA	**Lab Number:**	L2234343
Project Number:	2491	**Report Date:**	07/01/22

Case Narrative (continued)

MCP Related Narratives

Sample Receipt

L2234343-06: The Client ID was specified by the client.

Semivolatile Organics

L2234343-06: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

In reference to question I:

All samples were analyzed for a subset of MCP analytes per client request.

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

Authorized Signature: Caitlin Walukevich

Title: Technical Director/Representative

Date: 07/01/22

QC OUTLIER SUMMARY REPORT

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2234343
Report Date: 07/01/22

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment

There are no QC Outliers associated with this report.

ORGANICS

SEMIVOLATILES

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2234343
Report Date: 07/01/22

SAMPLE RESULTS

Lab ID: L2234343-01
Client ID: SS-11-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/28/22 12:55
Date Received: 06/28/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 07/01/22 05:28
Analyst: IM
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 06/28/22 19:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	800		ug/kg	100	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	410		ug/kg	100	--	1
Benzo(a)pyrene	420		ug/kg	140	--	1
Benzo(b)fluoranthene	630		ug/kg	100	--	1
Benzo(k)fluoranthene	240		ug/kg	100	--	1
Chrysene	430		ug/kg	100	--	1
Acenaphthylene	280		ug/kg	140	--	1
Anthracene	220		ug/kg	100	--	1
Benzo(ghi)perylene	250		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	100	--	1
Dibenzo(a,h)anthracene	79		ug/kg	74	--	1
Indeno(1,2,3-cd)pyrene	340		ug/kg	140	--	1
Pyrene	740		ug/kg	100	--	1
2-Methylnaphthalene	ND		ug/kg	74	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	92		30-130
2-Fluorobiphenyl	87		30-130
4-Terphenyl-d14	92		30-130

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2234343
Report Date: 07/01/22

SAMPLE RESULTS

Lab ID: L2234343-02
Client ID: SS-12-BOT
Sample Location: WOBURN, MA

Date Collected: 06/28/22 13:05
Date Received: 06/28/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/29/22 13:04
Analyst: IM
Percent Solids: 68%

Extraction Method: EPA 3546
Extraction Date: 06/28/22 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	190	--	1
Fluoranthene	ND		ug/kg	140	--	1
Naphthalene	ND		ug/kg	240	--	1
Benzo(a)anthracene	ND		ug/kg	140	--	1
Benzo(a)pyrene	ND		ug/kg	190	--	1
Benzo(b)fluoranthene	ND		ug/kg	140	--	1
Benzo(k)fluoranthene	ND		ug/kg	140	--	1
Chrysene	ND		ug/kg	140	--	1
Acenaphthylene	ND		ug/kg	190	--	1
Anthracene	ND		ug/kg	140	--	1
Benzo(ghi)perylene	ND		ug/kg	190	--	1
Fluorene	ND		ug/kg	240	--	1
Phenanthrene	ND		ug/kg	140	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	190	--	1
Pyrene	ND		ug/kg	140	--	1
2-Methylnaphthalene	ND		ug/kg	100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	69		30-130
2-Fluorobiphenyl	79		30-130
4-Terphenyl-d14	70		30-130

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2234343
Report Date: 07/01/22

SAMPLE RESULTS

Lab ID: L2234343-03
Client ID: SS-13-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/28/22 13:15
Date Received: 06/28/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 07/01/22 02:20
Analyst: IM
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 06/28/22 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	79	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	79	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	72		30-130
2-Fluorobiphenyl	72		30-130
4-Terphenyl-d14	70		30-130

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2234343
Report Date: 07/01/22

SAMPLE RESULTS

Lab ID: L2234343-04
Client ID: SS-14-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/28/22 13:25
Date Received: 06/28/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/29/22 13:52
Analyst: IM
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 06/28/22 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	140	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	180	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	140	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	140	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	140	--	1
Fluorene	ND		ug/kg	180	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	75	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	75	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	58		30-130
2-Fluorobiphenyl	66		30-130
4-Terphenyl-d14	61		30-130

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2234343
Report Date: 07/01/22

SAMPLE RESULTS

Lab ID: L2234343-05
Client ID: SS-15-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/28/22 13:35
Date Received: 06/28/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/29/22 14:16
Analyst: IM
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 06/28/22 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	150	--	1
Fluoranthene	ND		ug/kg	110	--	1
Naphthalene	ND		ug/kg	190	--	1
Benzo(a)anthracene	ND		ug/kg	110	--	1
Benzo(a)pyrene	ND		ug/kg	150	--	1
Benzo(b)fluoranthene	ND		ug/kg	110	--	1
Benzo(k)fluoranthene	ND		ug/kg	110	--	1
Chrysene	ND		ug/kg	110	--	1
Acenaphthylene	ND		ug/kg	150	--	1
Anthracene	ND		ug/kg	110	--	1
Benzo(ghi)perylene	ND		ug/kg	150	--	1
Fluorene	ND		ug/kg	190	--	1
Phenanthrene	ND		ug/kg	110	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	78	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	--	1
Pyrene	ND		ug/kg	110	--	1
2-Methylnaphthalene	ND		ug/kg	78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	74		30-130
2-Fluorobiphenyl	86		30-130
4-Terphenyl-d14	81		30-130

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2234343
Report Date: 07/01/22

SAMPLE RESULTS

Lab ID: L2234343-06
Client ID: SS-16-BOT
Sample Location: WOBURN, MA

Date Collected: 06/28/22 13:45
Date Received: 06/28/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 141,8270E
Analytical Date: 06/29/22 14:40
Analyst: IM
Percent Solids: 62%

Extraction Method: EPA 3546
Extraction Date: 06/28/22 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND		ug/kg	630	--	1
Fluoranthene	ND		ug/kg	470	--	1
Naphthalene	ND		ug/kg	790	--	1
Benzo(a)anthracene	ND		ug/kg	470	--	1
Benzo(a)pyrene	ND		ug/kg	630	--	1
Benzo(b)fluoranthene	ND		ug/kg	470	--	1
Benzo(k)fluoranthene	ND		ug/kg	470	--	1
Chrysene	ND		ug/kg	470	--	1
Acenaphthylene	ND		ug/kg	630	--	1
Anthracene	ND		ug/kg	470	--	1
Benzo(ghi)perylene	ND		ug/kg	630	--	1
Fluorene	ND		ug/kg	790	--	1
Phenanthrene	ND		ug/kg	470	--	1
Dibenzo(a,h)anthracene	ND		ug/kg	330	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	630	--	1
Pyrene	ND		ug/kg	470	--	1
2-Methylnaphthalene	ND		ug/kg	330	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	69		30-130
2-Fluorobiphenyl	81		30-130
4-Terphenyl-d14	79		30-130

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2234343
Report Date: 07/01/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 141,8270E
Analytical Date: 06/29/22 02:46
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 06/28/22 17:23

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-06 Batch: WG1656540-1					
Acenaphthene	ND		ug/kg	130	--
Fluoranthene	ND		ug/kg	99	--
Naphthalene	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	69	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
2-Methylnaphthalene	ND		ug/kg	69	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	87		30-130
Phenol-d6	88		30-130
Nitrobenzene-d5	87		30-130
2-Fluorobiphenyl	81		30-130
2,4,6-Tribromophenol	93		30-130
4-Terphenyl-d14	86		30-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 60 OLYMPIA
Project Number: 2491
Lab Number: L2234343
Report Date: 07/01/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-06 Batch: WG1656540-2 WG1656540-3								
Acenaphthene	78		73		40-140	7		30
Fluoranthene	82		81		40-140	1		30
Naphthalene	80		77		40-140	4		30
Benzo(a)anthracene	82		80		40-140	2		30
Benzo(a)pyrene	80		80		40-140	0		30
Benzo(b)fluoranthene	83		81		40-140	2		30
Benzo(k)fluoranthene	82		83		40-140	1		30
Chrysene	83		81		40-140	2		30
Acenaphthylene	83		77		40-140	8		30
Anthracene	80		79		40-140	1		30
Benzo(ghi)perylene	87		88		40-140	1		30
Fluorene	79		78		40-140	1		30
Phenanthrene	80		80		40-140	0		30
Dibenzo(a,h)anthracene	87		86		40-140	1		30
Indeno(1,2,3-cd)pyrene	96		96		40-140	0		30
Pyrene	83		82		40-140	1		30
2-Methylnaphthalene	78		78		40-140	0		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 60 OLYMPIA

Project Number: 2491

Lab Number: L2234343

Report Date: 07/01/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-06 Batch: WG1656540-2 WG1656540-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	88		85		30-130
Phenol-d6	85		85		30-130
Nitrobenzene-d5	81		79		30-130
2-Fluorobiphenyl	79		78		30-130
2,4,6-Tribromophenol	86		85		30-130
4-Terphenyl-d14	79		81		30-130

INORGANICS
&
MISCELLANEOUS

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2234343
Report Date: 07/01/22

SAMPLE RESULTS

Lab ID: L2234343-01
Client ID: SS-11-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/28/22 12:55
Date Received: 06/28/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.7		%	0.100	NA	1	-	06/29/22 07:07	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2234343
Report Date: 07/01/22

SAMPLE RESULTS

Lab ID: L2234343-02
Client ID: SS-12-BOT
Sample Location: WOBURN, MA

Date Collected: 06/28/22 13:05
Date Received: 06/28/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.9		%	0.100	NA	1	-	06/29/22 07:07	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2234343
Report Date: 07/01/22

SAMPLE RESULTS

Lab ID: L2234343-03
Client ID: SS-13-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/28/22 13:15
Date Received: 06/28/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.0		%	0.100	NA	1	-	06/29/22 07:07	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2234343
Report Date: 07/01/22

SAMPLE RESULTS

Lab ID: L2234343-04
Client ID: SS-14-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/28/22 13:25
Date Received: 06/28/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.2		%	0.100	NA	1	-	06/29/22 07:07	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2234343
Report Date: 07/01/22

SAMPLE RESULTS

Lab ID: L2234343-05
Client ID: SS-15-SIDEWALL
Sample Location: WOBURN, MA

Date Collected: 06/28/22 13:35
Date Received: 06/28/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.5		%	0.100	NA	1	-	06/29/22 07:07	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2234343
Report Date: 07/01/22

SAMPLE RESULTS

Lab ID: L2234343-06
Client ID: SS-16-BOT
Sample Location: WOBURN, MA

Date Collected: 06/28/22 13:45
Date Received: 06/28/22
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	61.6		%	0.100	NA	1	-	06/29/22 07:07	121,2540G	RI

Project Name: 60 OLYMPIA
Project Number: 2491

Lab Number: L2234343
Report Date: 07/01/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2234343-01A	Glass 250ml/8oz unpreserved	A	NA		3.5	Y	Absent		TS(7),MCP-8270-21(14)
L2234343-02A	Glass 250ml/8oz unpreserved	A	NA		3.5	Y	Absent		TS(7),MCP-8270-21(14)
L2234343-03A	Glass 250ml/8oz unpreserved	A	NA		3.5	Y	Absent		TS(7),MCP-8270-21(14)
L2234343-04A	Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		TS(7),MCP-8270-21(14)
L2234343-05A	Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		TS(7),MCP-8270-21(14)
L2234343-06A	Glass 60mL/2oz unpreserved	A	NA		3.5	Y	Absent		TS(7),MCP-8270-21(14)

*Values in parentheses indicate holding time in days

Project Name: 60 OLYMPIA **Lab Number:** L2234343

Project Number: 2491 **Report Date:** 07/01/22

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	60 OLYMPIA	**Lab Number:**	L2234343
Project Number:	2491	**Report Date:**	07/01/22

Footnotes

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

Terms

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

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

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

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

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

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

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

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

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

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

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

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

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

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

Report Format: Data Usability Report

Project Name:	60 OLYMPIA	**Lab Number:**	L2234343
Project Number:	2491	**Report Date:**	07/01/22

Data Qualifiers

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

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

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: 60 OLYMPIA **Lab Number:** L2234343
Project Number: 2491 **Report Date:** 07/01/22

REFERENCES

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

141 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA and IIB, November 2021.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 6/22/22

ALPHA Job #: L2234343

ALPHA ANALYTICAL
6 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: Verdantas

Address: One Monarch Dr
Littleton, MA

Phone: 978-679-1600

Email: CABinger@verdantas.com

Project Information

Project Name: 60 Olympia

Project Location: Woburn, MA

Project #: 2491

Project Manager: Christene Binger

ALPHA Quote #:

Turn-Around Time

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

Date Due: 3 Day TAT (by 7/1)

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

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

Additional Project Information:

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☒ PAH 8270D; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Sample Comments	TOTAL # BOTTLES
34343 01	SS-11-SIDEWALL	6/28/22	12:55	Soil	ARP		X								1
02	SS-12-BOT		13:05												
03	SS-13-SIDEWALL		13:15												
04	SS-14-SIDEWALL		13:25												
05	SS-15-SIDEWALL		13:35												
06	SS-16-SIDEWALL		13:45												

Container Type	~~G~~ A (ARP)
Preservative	A

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
Alan Bohn	6/28/22/16:02	[signature]	6/28/22 1602

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

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

APPENDIX B

MWRA JUNE 6, 2003 8(m) PERMIT

MASSACHUSETTS WATER RESOURCES AUTHORITY

Chelsea Facility
2 Griffin Way
Chelsea, Massachusetts 02150

Telephone: (617) 242-6000
Facsimile: (617) 305-5990

Frederick A. Laskey
Executive Director

June 6, 2003

GeoInsight, Inc.
319 Littleton Road Suite 105
Westford, MA 01886
Attn: Kevin Trainer, Project Manager

Re: MWRA – 8(m) Permit # 03-04-223M – Section 89 - Woburn

Dear Mr. Trainer:

Enclosed please find three (3) copies of 8(m) permit number 03-04-223M. Please sign all three (3) originals where indicated and return two (2) fully executed documents to:

Massachusetts Water Resources Authority
2 Griffin Way
Chelsea, MA 02150
Attn: Kevin McKenna, Project Manager, Transport

If you have any questions, please do not hesitate to call me at (617) 305-5956.

Sincerely,

Kevin McKenna
Project Manager, Transport

MASSACHUSETTS WATER RESOURCES AUTHORITY

PERMIT

DATE: 05/27/03

TO: GeoInsight, Inc.
Name of Permittee

319 Littleton Road Suite 105
Address

Westford, MA 01886
City State Zip Code

Pursuant to Section 8 (m) of Chapter 372 of the Acts of 1984 you are hereby granted permission to use a certain portion of land presently under the jurisdiction and control of the Massachusetts Water Resources Authority for the purpose set forth below.

The land is described as follows:

Massachusetts Water Resources Authority (MWRA) Section 89 between Sta. 21+86 and Sta. 17+ 33.

You may use the land for the purpose of:

Crossing over the permanent easement of MWRA 89 at 60 Olympia Road to conduct remedial work in accordance with a March 17, 2003 "Administrative Order of Consent for Removal Action" (USEPA).

Your use of the land will be subject to the conditions contained in Exhibit A.

Approved:
Massachusetts Water
Resources Authority

Associate General Counsel
(Approved as to Form)

Director, Field Operations

Commonwealth of Massachusetts

I, the undersigned _____ / Kevin Trainer

Signature Print Name

Of the **GeoInsight Inc**. accept and be bound by the terms and conditions of this permit. This permit shall have no effect until such time as the Authority receives a fully executed original of this Permit. Please return a fully executed original to: **Massachusetts Water Resources Authority**, 551 South Street Quincy, MA 02169. Attn: Permitting Department.

EXHIBIT A

CONDITIONS:

1. Permittee's use of the land shall at no time interfere with the Authority's activities or operations on the land. The Authority, has the right to review and approve all of the Permittee's work including such plans and specifications as the MWRA deems necessary.

2. The Permittee and its successors and assigns shall indemnify and hold harmless the Authority and its successors and assigns from all damages and/or claims arising from the acts or omissions of the Permittee on the Premises or of anyone acting by or through the Permittee. The Permittee's obligations under this paragraph shall include reimbursement to the Authority for damage to the Authority's property.

3. The granting of this permission shall in no way interfere with the rights of the Authority to exercise its rights in or over the land as provided in the taking for this section.

4. Permittee Acknowledges that the Authority may enter upon the location at any time in order to carry out the inspection, maintenance, repair, replacement of its property.

5. This Permit may be revoked by the Authority at any time.

6. Permittee will give the Authority at least 48 hours notice before commencing the operations as pursuant herein.

7. This Permit may not be assigned, conferred or transferred.

8. No blasting, drilling or other activity that could in any way affect the integrity of the Authority's property or use of the Premises shall be permitted without express prior written approval of the Authority.

9. Within 30 days after work has been completed you must submit as built per attached standards, if applicable.

Additional Conditions: In work area "C" Prior to starting the vacuum excavation, the centerline of the MWRA sewer should be staked by sighting between manholes at Sta. 26+19 and 21+86.

APPENDIX C

APRIL 8, 2022 TECHNICAL MEMORANDUM

TECHNICAL MEMORANDUM
OLYMPIA PROPERTY
WELLS G&H SUPERFUND SITE
60 OLYMPIA AVENUE, WOBURN, MA

TO:	Joe LeMay, EPA RPM
FROM:	Diane Sullivan, Ph.D., Risk Assessor/Toxicologist
THROUGH:	Eric Evans, P.G., Project Manager
DATE:	April 8, 2022
SUBJECT:	Comparison of Post-Excavation Soils with ROD Soil Action Levels, Olympia Property, Wells G&H Superfund Site, Woburn, MA
CONTRACT NO:	68HE0318D0006, Task Order 68HE0120F0033

In accordance with the Statement of Work presented in Appendix D of the March 17, 2003, United States Environmental Protection Agency (EPA) Administrative Order on Consent for Removal Action (CERCLA Docket No. 01-2003-0023; the "Order") for the 60 Olympia Avenue property (referred to herein as the Olympia Property), GeoInsight prepared and implemented a Work Plan on behalf of Olympia Nominee Trust, the current owner of the Olympia Property, for the excavation and off-site disposal of surficial soil impacted with polychlorinated biphenyls (PCBs) and carcinogenic polycyclic aromatic hydrocarbons (cPAHs). The identified areas of contaminated soil contained PCBs and cPAHs at concentrations above the Wells G&H Operable Unit 1 Record of Decision (ROD) Soil Action Levels (1.04 milligrams per kilogram [mg/kg] for total PCBs and 0.694 mg/kg for total cPAHs). Removal action activities associated with the excavation and off-site disposal of PCB- and cPAH-impacted surface soils were completed at the Olympia Property from May through September 2003.

As part of the remedial activities, pre-Work Plan surface soil sampling was conducted within the PCB and cPAH areas, some of which were excavated during the removal action. Post-excavation confirmation soil sampling and analysis for cPAHs and total PCBs was also performed.

The purpose of this memorandum is to evaluate whether the soil removal action has resulted in soil concentrations that comply with the ROD Soil Action Levels. The approach used for the compliance evaluation is discussed separately for total PCBs and cPAHs.

Total PCBs

Following the completion of the PCB remedial activities, four pre-Work Plan (i.e., CPS-series samples) and 33 post-excavation soil samples are available for the compliance evaluation. These samples were collected in areas outside the limits of the PCB soil excavation. Four of the individual PCB samples results, ranging from 1.2 mg/kg to 3.53 mg/kg, slightly exceed the ROD Action Level of 1.04 mg/kg for total PCBs. The analytical results for the available samples are presented in Table 1.

Rather than using a point-by-point comparison, compliance with the ROD Action Level can be demonstrated using a statistical approach. EPA's ProUCL software version 5.1 (2016) was used to calculate a 95% Upper Confidence Limit (UCL) on the arithmetic mean concentration. The 95% UCL is then compared to the ROD Action Level to demonstrate compliance. The ProUCL output is included as Attachment A.

The 95% UCL recommended by the ProUCL software program is 0.778 mg/kg, which is less than the ROD Action Level of 1.04 mg/kg for total PCBs; therefore, the ROD action level for PCBs appears to be attained.

Carcinogenic PAHs

Since the ROD was signed in 1989, EPA published guidance related to the relative toxicity or potency of the seven cPAHs. EPA's 1993 *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons* details the development of Relative Potency Factors for each of the seven cPAHs, relative to benzo(a)pyrene (BaP) which was assigned a Relative Potency Factor of 1. A BaP equivalent concentration for each sample can be calculated by applying the Relative Potency Factors to the concentrations of the individual cPAHs in a sample. This results in a BaP equivalent concentration for each sample, upon summing. The Relative Potency Factors are presented in Table 2. Whereas dibenz(a,h)anthracene (one of the seven cPAHs) was not detected in any of the samples, its Relative Potency Factor does not appear on Table 2.

Following the completion of the cPAH remedial activities, two pre-Work Plan (i.e., SPS-series samples) and eight post-excavation samples are available for the compliance evaluation. These samples were collected outside the limits of the PAH soil excavation. For each of these samples, a BaP equivalent concentration was calculated, as presented on Table 2, based on the sum of their detected individual cPAH concentrations multiplied by their respective Relative Potency Factors. Three of the BaP equivalent concentrations, ranging from 0.923 mg/kg to 1.95 mg/kg, slightly exceed the ROD Action Level of 0.694 mg/kg for cPAHs.

Consistent with the total PCB evaluation, EPA's ProUCL software version 5.1 (2016) was then used to calculate a 95% UCL for the BaP equivalent concentrations. The ProUCL output is included as Attachment B.

The 95% UCL recommended by the ProUCL software program is 1.004 mg/kg which exceeds the ROD Action Level of 0.694 mg/kg for cPAHs; therefore, the ROD action level for PAHs appears to have not been attained, and further PAH soil excavation appears to be necessary in the vicinity of post-excavation samples SPE-1, SPE-6, and SPE-8.

TABLE 1
SUMMARY OF PRE-WORK PLAN AND POST EXCAVATION SOIL ANALYTICAL DATA - PCBs
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Sample ID	Unit	Concentration	Qualifier
CPS-1	mg/kg	**0.032**	
CPS-2	mg/kg	**0.050**	
CPS-3	mg/kg	**0.040**	
CPS-4	mg/kg	**0.86**	
CPE-11	mg/kg	**0.31**	
CPE-10	mg/kg	**0.27**	
CPE-9	mg/kg	**0.87**	
CPE-8	mg/kg	0.29	U
CPE-7	mg/kg	0.25	U
CPE-6	mg/kg	0.29	U
CPE-5	mg/kg	0.25	U
CPE-19	mg/kg	**0.58**	
CPE-18	mg/kg	**0.62**	
CPE-12	mg/kg	**1.2**	
CPE-4	mg/kg	0.25	U
CPX-13	mg/kg	0.10	U
CPX-14	mg/kg	0.10	U
CPX-15	mg/kg	**0.14**	
CPX-16	mg/kg	0.10	U
CPX-17	mg/kg	0.10	U
CPX-18	mg/kg	0.10	U
CPX-19	mg/kg	**0.11**	
CPX-20	mg/kg	**0.18**	
CPX-1	mg/kg	0.10	U
CPX-2	mg/kg	**0.51**	
CPX-3	mg/kg	0.10	U
CPX-7	mg/kg	**0.59**	
CPX-8	mg/kg	**1.2**	
CPX-10	mg/kg	**0.37**	
PCB-X-1	mg/kg	**0.213**	
PCB-X-2	mg/kg	0.003	U
PCB-X-3	mg/kg	0.003	U
PCB-X-4	mg/kg	**0.373**	
PCB-X-5	mg/kg	**0.051**	
PCB-X-6	mg/kg	**3.53**	
PCB-X-7	mg/kg	**3.15**	
PCB-X-8	mg/kg	0.003	U
95% UCL	mg/kg	0.778	

Notes:
PCBs - Polychlorinated Biphenyls.
mg/kg - milligrams per kilogram.
95% UCL - 95% Upper Confidence Limit as calculated by EPA's ProUCL Software Version 5.1 (2016).

TABLE 2
SUMMARY OF PRE-WORK PLAN AND POST EXCAVATION SOIL ANALTYICAL DATA- PAHs 60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Sample I.D. Sampling Date Constituent (cPAHs)	Units	Relative Potency Factor	SPE-1 06/04/03	Qualifier	SPE-2 06/04/03	Qualifier	SPE-3 06/04/03	Qualifier	SPE-4 06/04/03	Qualifier	SPE-5 06/04/03	Qualifier	SPE-6 06/04/03	Qualifier	SPE-7 06/04/03 combo	Qualifier	SPE-8 06/04/03	Qualifier	SPS-2 04/10/2013	Qualifier	SPS-5 04/10/2013	Qualifier		
Benzo(a)anthracene	mg/kg	0.1	**1.3**		0.199	U	0.192	U	0.091	U	0.168	U	**1.8**		0.1635	U	**0.70**		**0.16**		**0.16**			
Benzo(b) fluoranthene	mg/kg	0.1	**1.6**		0.199	U	0.192	U	0.091	U	**0.29**		**1.9**		0.1635	U	**0.92**		**0.26**		**0.25**			
Benzo(k) fluoranthene	mg/kg	0.01	**1.0**		0.199	U	0.192	U	0.091	U	0.168	U	**1.2**		0.1635	U	**0.58**		**0.15**		0.10	U		
Benzo(a)pyrene	mg/kg	1	**1.5**		0.199	U	0.192	U	0.091	U	0.168	U	**1.5**		0.1635	U	**0.72**		**0.2**		**0.17**			
Chrysene	mg/kg	0.001	**1.5**		0.199	U	0.192	U	0.091	U	**0.26**		**1.9**		0.1635	U	**0.82**		**0.37**		**0.19**			
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	**0.78**		0.199	U	0.192	U	0.091	U	0.168	U	**0.7**		0.1635	U	**0.34**		0.111	U	0.10	U		
BaP Equivalent Concentration	mg/kg		1.88		0.199	U	0.192	U	0.091	U	0.0293		1.95		0.164	U	0.923		0.244		0.211		1.004	95% UCL

Notes:
cPAH - Carcinogenic Polycyclic Aromatic Hydrocarbon.
mg/kg - milligrams per kilogram.
BaP - Benzo(a)pyrene
The BaP Equivalent Concentration is calculated by summing the detected concentrations in each sample multiplied by their respective Relative Potency Factors.
Relative Potency Factors from EPA's 1993 P*rovisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons.*
95% UCL - 95% Upper Confidence Limit as calculated by EPA's ProUCL Software Version 5.1 (2016).

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.13/29/2022 8:55:03 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

PCBs

General Statistics

Total Number of Observations	37	Number of Distinct Observations	25
Number of Detects	22	Number of Non-Detects	15
Number of Distinct Detects	21	Number of Distinct Non-Detects	4
Minimum Detect	0.032	Minimum Non-Detect	0.003
Maximum Detect	3.53	Maximum Non-Detect	0.29
Variance Detects	0.861	Percent Non-Detects	40.54%
Mean Detects	0.693	SD Detects	0.928
Median Detects	0.372	CV Detects	1.339
Skewness Detects	2.361	Kurtosis Detects	5.282
Mean of Logged Detects	-1.103	SD of Logged Detects	1.321

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.668	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.184	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.425	KM Standard Error of Mean	0.13
KM SD	0.771	95% KM (BCA) UCL	0.66
95% KM (t) UCL	0.645	95% KM (Percentile Bootstrap) UCL	0.645
95% KM (z) UCL	0.639	95% KM Bootstrap t UCL	0.867
90% KM Chebyshev UCL	0.815	95% KM Chebyshev UCL	0.991
97.5% KM Chebyshev UCL	1.236	99% KM Chebyshev UCL	1.718

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.399	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.78	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.117	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.192	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.805	k star (bias corrected MLE)	0.726
Theta hat (MLE)	0.861	Theta star (bias corrected MLE)	0.955
nu hat (MLE)	35.42	nu star (bias corrected)	31.93
Mean (detects)	0.693		

Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)			
For such situations, GROS method may yield incorrect values of UCLs and BTVs			
This is especially true when the sample size is small.			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	0.416
Maximum	3.53	Median	0.051
SD	0.786	CV	1.889
k hat (MLE)	0.4	k star (bias corrected MLE)	0.385
Theta hat (MLE)	1.041	Theta star (bias corrected MLE)	1.08
nu hat (MLE)	29.58	nu star (bias corrected)	28.52
Adjusted Level of Significance (β)	0.0431		
Approximate Chi Square Value (28.52, α)	17.33	Adjusted Chi Square Value (28.52, β)	16.95
95% Gamma Approximate UCL (use when n>=50)	0.685	95% Gamma Adjusted UCL (use when n<50)	0.7
Estimates of Gamma Parameters using KM Estimates			
Mean (KM)	0.425	SD (KM)	0.771
Variance (KM)	0.595	SE of Mean (KM)	0.13
k hat (KM)	0.304	k star (KM)	0.298
nu hat (KM)	22.52	nu star (KM)	22.02
theta hat (KM)	1.398	theta star (KM)	1.429
80% gamma percentile (KM)	0.651	90% gamma percentile (KM)	1.256
95% gamma percentile (KM)	1.951	99% gamma percentile (KM)	3.759
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (22.02, α)	12.36	Adjusted Chi Square Value (22.02, β)	12.04
95% Gamma Approximate KM-UCL (use when n>=50)	0.758	95% Gamma Adjusted KM-UCL (use when n<50)	0.778
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.966	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.911	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.104	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.184	Detected Data appear Lognormal at 5% Significance Level	
Detected Data appear Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	0.427	Mean in Log Scale	-2.149
SD in Original Scale	0.781	SD in Log Scale	1.733
95% t UCL (assumes normality of ROS data)	0.643	95% Percentile Bootstrap UCL	0.652
95% BCA Bootstrap UCL	0.752	95% Bootstrap t UCL	0.869
95% H-UCL (Log ROS)	1.375		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	-2.441	KM Geo Mean	0.0871
KM SD (logged)	2.122	95% Critical H Value (KM-Log)	3.91
KM Standard Error of Mean (logged)	0.412	95% H-UCL (KM -Log)	3.301
KM SD (logged)	2.122	95% Critical H Value (KM-Log)	3.91
KM Standard Error of Mean (logged)	0.412		

DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.44	Mean in Log Scale	-2.023
SD in Original Scale	0.775	SD in Log Scale	1.842
95% t UCL (Assumes normality)	0.655	95% H-Stat UCL	2.111
DL/2 is not a recommended method, provided for comparisons and historical reasons			

Nonparametric Distribution Free UCL Statistics			
Detected Data appear Gamma Distributed at 5% Significance Level			
Suggested UCL to Use			
Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50 but k<=1	0.778		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.13/29/2022 9:21:20 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo(a)pyrene equivalent concentrations

General Statistics

Total Number of Observations	10	Number of Distinct Observations	10
Number of Detects	6	Number of Non-Detects	4
Number of Distinct Detects	6	Number of Distinct Non-Detects	4
Minimum Detect	0.0293	Minimum Non-Detect	0.091
Maximum Detect	1.954	Maximum Non-Detect	0.199
Variance Detects	0.746	Percent Non-Detects	40%
Mean Detects	0.873	SD Detects	0.864
Median Detects	0.583	CV Detects	0.989
Skewness Detects	0.53	Kurtosis Detects	-2.168
Mean of Logged Detects	-0.88	SD of Logged Detects	1.618

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.836	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.267	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.325	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.536	KM Standard Error of Mean	0.255
KM SD	0.738	95% KM (BCA) UCL	1.012
95% KM (t) UCL	1.004	95% KM (Percentile Bootstrap) UCL	0.96
95% KM (z) UCL	0.956	95% KM Bootstrap t UCL	1.481
90% KM Chebyshev UCL	1.302	95% KM Chebyshev UCL	1.649
97.5% KM Chebyshev UCL	2.131	99% KM Chebyshev UCL	3.078

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.344	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.72	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.206	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.343	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.798	k star (bias corrected MLE)	0.51
Theta hat (MLE)	1.095	Theta star (bias corrected MLE)	1.713
nu hat (MLE)	9.574	nu star (bias corrected)	6.12
Mean (detects)	0.873		

Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)			
For such situations, GROS method may yield incorrect values of UCLs and BTVs			
This is especially true when the sample size is small.			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	0.528
Maximum	1.954	Median	0.12
SD	0.783	CV	1.483
k hat (MLE)	0.383	k star (bias corrected MLE)	0.335
Theta hat (MLE)	1.379	Theta star (bias corrected MLE)	1.578
nu hat (MLE)	7.656	nu star (bias corrected)	6.693
Adjusted Level of Significance (β)	0.0267		
Approximate Chi Square Value (6.69, α)	2.003	Adjusted Chi Square Value (6.69, β)	1.589
95% Gamma Approximate UCL (use when n>=50)	1.764	95% Gamma Adjusted UCL (use when n<50)	2.224
Estimates of Gamma Parameters using KM Estimates			
Mean (KM)	0.536	SD (KM)	0.738
Variance (KM)	0.544	SE of Mean (KM)	0.255
k hat (KM)	0.528	k star (KM)	0.436
nu hat (KM)	10.55	nu star (KM)	8.72
theta hat (KM)	1.015	theta star (KM)	1.229
80% gamma percentile (KM)	0.872	90% gamma percentile (KM)	1.489
95% gamma percentile (KM)	2.16	99% gamma percentile (KM)	3.832
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (8.72, α)	3.159	Adjusted Chi Square Value (8.72, β)	2.606
95% Gamma Approximate KM-UCL (use when n>=50)	1.479	95% Gamma Adjusted KM-UCL (use when n<50)	1.793
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.899	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.189	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.325	Detected Data appear Lognormal at 5% Significance Level	
Detected Data appear Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	0.536	Mean in Log Scale	-1.925
SD in Original Scale	0.777	SD in Log Scale	1.81
95% t UCL (assumes normality of ROS data)	0.987	95% Percentile Bootstrap UCL	0.96
95% BCA Bootstrap UCL	1.035	95% Bootstrap t UCL	1.531
95% H-UCL (Log ROS)	14.75		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	-1.94	KM Geo Mean	0.144
KM SD (logged)	1.731	95% Critical H Value (KM-Log)	4.75
KM Standard Error of Mean (logged)	0.6	95% H-UCL (KM -Log)	9.969
KM SD (logged)	1.731	95% Critical H Value (KM-Log)	4.75
KM Standard Error of Mean (logged)	0.6		

DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.556	Mean in Log Scale	-1.552
SD in Original Scale	0.763	SD in Log Scale	1.501
95% t UCL (Assumes normality)	0.999	95% H-Stat UCL	5.366
DL/2 is not a recommended method, provided for comparisons and historical reasons			

Nonparametric Distribution Free UCL Statistics			
Detected Data appear Normal Distributed at 5% Significance Level			
Suggested UCL to Use			
95% KM (t) UCL	1.004		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

APPENDIX D

DISPOSAL DOCUMENTATION

Massachusetts Department of Environmental Protection
Bureau of Air & Waste

Material Shipping Record & Log

For the shipment of contaminated soil, urban fill, and dredge materials not subject to management under section 310 CMR 40.0035 nor manifesting under 310 CMR 30.000

249101
Tracking Number

A. Location Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

1. Provide the following information on the location where the waste was generated:

PAH Area
Release name (optional)

60 Olympia Avenue
Street

Location aid

Woburn
City/Town

MA
State

01801
Zip code

2. Date/Period of generation: June 16, 2022 From — June 28, 2022 To

3. U.S. EPA ID number: MAD980732168

4. 21E release: ☐ Yes ☑ No

5. List additional tracking documents associated with this document:

B. Generator Information

Important: This form is not to be used for the shipment of remediation wastes subject to management under section 310 CMR 40.0035 of the Massachusetts Contingency Plan nor is it to be used in lieu of a hazardous waste manifest for hazardous waste or recyclable materials subject to the Massachusetts Hazardous Waste Regulations 310 CMR 30.000.

1. Provide the following generator information:

Olympia Nominee Trust
Name of organization

Charles Whitten
Contact name

Owner
Title

263 Argilla RD
Street address

Ipswich
City/Town

MA
State

01938
Zip code

781 729 0785
Telephone number(including extension)

C. Owner and/or Operator Information

1. If the owner and/or operator is different from the generator as indicated in Section B, provide the following information:

Check applicable: ☐ owner ☐ operator

Name of organization

Contact name

Title

Street address

City/Town

State

Zip code

Telephone number

Ext.

Massachusetts Department of Environmental Protection
Bureau of Air & Waste

Material Shipping Record & Log

For the shipment of contaminated soil, urban fill, and dredge materials not subject to management under section 310 CMR 40.0035 nor manifesting under 310 CMR 30.000

249101
Tracking Number

D. Transporter/Common Carrier Information

1. Provide the following information:

Trident Environmental Group
Transporter/Common carrier name

MAL300108347
Hazardous waste license number (if applicable)

MA550
Licensing state (if applicable)

Beth Eisenmann
Contact person

Project Manager
Title

15 Shire Drive
Street

Norfolk
City/Town

MA
State

02056
Zip code

508 229 3545
Telephone number

Ext.

E. Receiving Facility Information

1. Provide the following information on the receiving facility:

Clean Earth/ESMI of New Hampshire
Operator/Facility name

Angela Holub
Contact person

Office Coordinator
Title

67 International Drive
Street

Loudon
City/Town

NH
State

03307
Zip code

603 783 0228
Telephone number

Ext.

2. Type of facility:

- ☐ asphalt batch/cold mix
- ☐ asphalt batch/hot mix
- ☐ landfill/disposal
- ☐ landfill/ daily cover
- ☑ thermal processing
- ☐ landfill/structural fill
- ☐ other(specify): _____

3. Permit number: NH5986485852

Massachusetts Department of Environmental Protection
Bureau of Air & Waste

Material Shipping Record & Log

For the shipment of contaminated soil, urban fill, and dredge materials not subject to management under section 310 CMR 40.0035 nor manifesting under 310 CMR 30.000

249101
Tracking Number

F. Description of Material

Check all that apply:

1. a. ☑ soil ☐ dredge material ☐ fill

   b. Description: Brown, Silty Sand (SM), trace gravel, trace organics, loose, dry

   c. Classification: ☐ MIT ☐ USDA ☐ USAEC ☐ ASEE

2. ☑ Other(describe): USCS

3. Type of contamination:

   a. ☐ gasoline ☐ diesel fuel ☐ #2 oil ☐ #4 oil
   ☐ #6 oil ☐ waste oil ☐ kerosene ☐ jet fuel

   b. ☐ Debris:
   ☐ demolition ☐ vegetative ☐ inorganic

   c. ☑ Other(describe): Non-hazardous, contaminated with polycyclic aromatic hydrocarbons (PAHs)

4. Constituents of concern (check all that apply):

   ☐ As ☐ HVOCs
   ☐ Cd ☐ PATH
   ☐ Cr ☐ VOCs
   ☐ Pb ☑ PAHs
   ☐ Hg ☐ BNAs
   ☐ Na ☐ TPH
   ☐ PCBs ☐ Other(describe):

5. Analyses performed (check all that apply):

   ☑ As ☐ PATH
   ☑ Cd ☑ VOCs
   ☑ Cr ☑ PAHs
   ☑ Pb ☐ BNAs
   ☑ Hg ☑ TPH
   ☐ Na ☑ TCLP (inorganic)
   ☑ PCBs ☐ TCLP (organic)
   ☐ HVOCs ☐ Other(describe): pH, ignitability, cyanide, sulfide

6. Screening performed:

   Type

   Instrument used

   Constituents

Massachusetts Department of Environmental Protection
Bureau of Air & Waste

Material Shipping Record & Log

For the shipment of contaminated soil, urban fill, and dredge materials not subject to management under section 310 CMR 40.0035 nor manifesting under 310 CMR 30.000

249101
Tracking Number

F. Description of Material (cont.)

7. Estimated volume of materials:

10	13.5	
Cubic yards	Tons	Other(specify units)

8. Contaminant source (check one):

- ☐ transportation accident
- ☐ ust
- ☑ other(describe): unknown

9. Indicate which waste characterization support documentation is attached:

- ☐ site history information
- ☐ sampling and analytical methods/procedure
- ☑ laboratory data
- ☐ field screening data

If supporting documentation is not appended, provide an attachment stating the date and in connection with what document such information was previously submitted to the facility.

G. Qualified Environmental Professional Opinion

"I have personally examined and am familiar with the information contained on and submitted with this form. Based on this information, it is my opinion that the testing and assessment actions undertaken were adequate to characterize the waste, and that the facility or location can accept wastes with the characteristics described in this submittal. I am aware that significant penalties including, but not limited to, possible fines and imprisonment may result if I willfully submit information which I know to be false, inaccurate, or materially incomplete."

Verdantas
Name of Organization

Philip Warner
Name of Professional

Senior Consultant
Title

413 333 8131
Telephone number

Ext.

Signature

08/16/2022
Date (MM/DD/YYYY)

1799
License Number[1]

Seal[2]:

[1]A license number is required for all Qualified Environmental Professional completing this form. A Qualified Environmental Professional is licensed or certified in a discipline related to environmental assessment (i.e., engineering, geology, soil science, or environmental science) by a state or recognized professional organization.

[2]A seal is **not** required for a **Licensed Site Professional** as defined in M.G.L. 21A, s. 19, holding a valid license issued by the Board of Registration of Hazardous Waste Site Cleanup Professionals pursuant to M.G.L. c. 21A, § 19 through 19J. A seal is required for all other Qualified Environmental Professionals as defined in 1 above.

Massachusetts Department of Environmental Protection
Bureau of Air & Waste

Material Shipping Record & Log

For the shipment of contaminated soil, urban fill, and dredge materials not subject to management under section 310 CMR 40.0035 nor manifesting under 310 CMR 30.000

249101
Tracking Number

H. Certification of Generator

"I certify under penalties of law that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this certification, and that, based on my inquiry of those individuals immediately responsible for obtaining the information contained herein is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information."

Signature

08/16/2022
Date (MM/DD/YYYY)

Charles D Whitten
Name (Print)

I. Acknowledgment of Receipt by Receiving Facility

ESMI
Receiving Facility

Angela Webb
Representative (Print)

Office Manager
Title

Signature

08/18/2022
Date (MM/DD/YYYY)

Massachusetts Department of Environmental Protection
Bureau of Air & Waste

Material Shipping Record & Log

For the shipment of contaminated soil, urban fill, and dredge materials not subject to management under section 310 CMR 40.0035 nor manifesting under 310 CMR 30.000

249101
Tracking Number

J. Load Information

Note:
Make additional copies of this page as necessary.

Load#: 1

Signature of transporter: [illegible]
Receiving facility: [illegible]
Date received: 8-17-22
Time received: 8:00 A.m
Date of shipment:
Time of shipment:
Truck/Tractor registration: 7034 A
Trailer registration:
Load size (cubic yards/tons): 15 / Tons 9.72

Load#: _____

Signature of transporter
Receiving facility
Date received
Time received
Date of shipment
Time of shipment
Truck/Tractor registration
Trailer registration
Load size (cubic yards/tons)

Load#: _____

Signature of transporter
Receiving facility
Date received
Time received
Date of shipment
Time of shipment
Truck/Tractor registration
Trailer registration
Load size (cubic yards/tons)

K. Log Sheet Volume Information

Total volume this page (cubic yards/tons): 9.72
Total carried forward (cubic yards/tons): 9.72
Total carried forward and this page (cubic yards/tons):

Page 1 of 1

ESMI NH
67 International Dr
Loudon, NH 03307
Ph: Fax:

Ticket: 2884742

	Date	Time	Scale
In:	08/17/2022	10:01:54	ESMINH
Out:	08/17/2022	10:01:54	ESMINH

Manifest: 81722WOBURN
Vehicle: TRIDENT210
Decal:

	Lbs.	Tns
Gross:	55,180	27.59
Tare:	35,740	17.87
Net:	19,440	9.72

Customer: Miscellaneous - Esmi
Esmi
Generator: Charles Whitten
Address: 60 Olympia Ave.
WOBURN, MA 01801

Carrier:
Profile #: 223291922
Job: Olympia Ave - Woburn MA
Address: 60 Olympia Ave.
WOBURN, MA 01801

Material

Recyclable soil/rock/material

Comment:

Driver

Facility ESMI NH

Angela Holub

WASTE AND HAZARDOUS MATERIALS DIVISION
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Part 111 and Part 121 of Act 451, 1994, as amended.

Failure to file may subject you to criminal and/or civil penalties under Section 324.11151 or 324.12116 MCL.

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MP781729078 5
Manifest Document No. 70512
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Olympia Nominee Trust
31 Holton Street
Winchester, MA 01890

4. Generator's Phone ((781))729-0785

A. State Manifest Document Number MI 9070512

B. State Generator's ID 60 Olympia Woburn, MA

5. Transporter 1 Company Name: Online Transportation Services, LLC
6. US EPA ID Number: NHD510180136

C. State Transporter's ID 763941MC

D. Transporter's Phone (603) 378-0826

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
U.S. Liquids of Detroit, Inc.
1923 Frederick Street
Detroit, MI 48211

10. US EPA ID Number: MID980991566

G. State Facility's ID

H. Facility's Phone (313) 923-0080

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non Hazardous Liquids,Not DOT, Not RCRA Regulated		02	DM	0110	G	029L
b. Non Hazardous Solids,Not DOT, Not RCRA Regulated		04	DM	01600	P	029L
c. Non Hazardous Solids,Not DOT, Not RCRA Regulated		05 04	CF	09000 ~~01000~~	P	029L
d.						

J. Additional Descriptions for Materials Listed Above
a.Decon Water
8711L (add'l code MA99)
b.Drilling Sludge & Cuttings
8710L
c.Drilling Sludge & Cuttings
8710L
d.

K. Handling Codes for Wastes Listed Above
A.
B.
C.
D.

15. Special Handling Instructions and Additional Information
Emergency Contact #

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; If I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Charles D. Whitten
Signature
Date: Month Day Year 06 25 03

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: PETER HACK
Signature
Date: Month Day Year 06 25 03

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Date: Month Day Year

GENERATOR
TRANSPORTER
FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

To be mailed by Generator to:
WASTE AND HAZARDOUS MATERIALS DIVISION
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
PO BOX 30038

EQP 5110
Rev. 10/02

WASTE AND HAZARDOUS MATERIALS DIVISION
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Part 111 and Part 121 of Act 451, 1994, as amended.

Failure to file may subject you to criminal and/or civil penalties under Section 324.11151 or 324.12116 MCL.

Form Approved. OMB No. 2050-0039

Please print or type.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MP7817290785 | Manifest Document No. 02411 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Olympia Nominee Trust, 31 Holton Street, Winchester, MA 01890

4. Generator's Phone (781) 729-0785

A. State Manifest Document Number: MI 9070513

B. State Generator's ID: 60 Olympia Woburn, MA

5. Transporter 1 Company Name: Frank's Vacuum Truck Service, Inc.

6. US EPA ID Number: NYD982792814

C. State Transporter's ID: AD 76674 N

D. Transporter's Phone: (716) 284-2132

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address: U.S. Liquids of Detroit, Inc., 1923 Frederick Street, Detroit, MI 48211

10. US EPA ID Number: MID980991566

G. State Facility's ID:

H. Facility's Phone: (313) 923-0080

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non Hazardous Solids, Not DOT, Not RCRA Regulated	020	CF	40000	P	029L
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Drilling Sludge & Cuttings 8710L
b.
c.
d.

K. Handling Codes for Wastes Listed Above
A.
B.
C.
D.

15. Special Handling Instructions and Additional Information: Emergency Contact # 602-415-9226

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR; if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Charles D. [illegible] | Signature: [signature] | Date: Month 06 Day 25 Year 03

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: LEE BOEHRINGER | Signature: Lee Boehringer | Date: Month 06 Day 26 Year 03

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: | Signature: | Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: | Signature: | Date: Month Day Year

GENERATOR / TRANSPORTER / FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

EQP 5110 Rev. 10/02

GENERATOR 1st COPY

WASTE AND HAZARDOUS MATERIALS DIVISION
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Part 111 and Part 121 of Act 451, 1994, as amended.

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Form Approved. OMB No. 2050-0039

Please print or type.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MP7817290785
Manifest Document No.
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address Olympia Nominee Trust
31 Holton Street
Winchester, MA 01890

4. Generator's Phone (781) 729-0785

A. State Manifest Document Number MI 9070673
B. State Generator's ID 60 Olympia Avenue Woburn, MA

5. Transporter 1 Company Name AUTUMN INDUSTRIES INC
6. US EPA ID Number OHD986974780
C. State Transporter's ID
D. Transporter's Phone 800 447 2116

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
U.S. Liquids of Detroit, Inc.
1923 Frederick Street
Detroit, MI 48211
10. US EPA ID Number MID980991566
G. State Facility's ID
H. Facility's Phone (313) 923-0080

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non Hazardous Solid, Not DOT Not RCRA Regulated	15	CF	30000	P	029L
b. NON HAZARDOUS LIQUID, NON DOT NON RCRA REGULATED	02	DM	0800	P	029L
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Drilling Sludge & Cuttings 8710L
b. DECON WATER 8711L
c.
d.

K. Handling Codes for Wastes Listed Above
A.
B.
C.
D.

15. Special Handling Instructions and Additional Information Emergency Contact.

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Printed/Typed Name Charles D. Whitten
Signature
Date Month Day Year 08 28 03

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name Cory Stahl
Signature
Date Month Day Year 08 28 03

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Date Month Day Year

GENERATOR
TRANSPORTER
FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)
EQP 5110 Rev. 10/02

GENERATOR 1st COPY

WASTE AND HAZARDOUS MATERIALS DIVISION
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐ PR. ☐

Required under authority of Part 111 and Part 121 of Act 451, 1994, as amended.

Failure to file may subject you to criminal and/or civil penalties under Section 324.11151 or 324.12116 MCL.

Form Approved. OMB No. 2050-0039

Please print or type.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MP7817290785
Manifest Document No.
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Olympia Nominee Trust, 31 Holton Street, Winchester, MA 01890
4. Generator's Phone (781) 729-0785

A. State Manifest Document Number: MI 9070672
B. State Generator's ID: 60 Olympia Avenue, Woburn, MA

5. Transporter 1 Company Name: AUTUMN INDUSTRIES INC
6. US EPA ID Number: OHD986974780
C. State Transporter's ID
D. Transporter's Phone: 800-447-2116

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: U.S. Liquids of Detroit, Inc., 1923 Frederick Street, Detroit, MI 48211
10. US EPA ID Number: MID980991566
G. State Facility's ID
H. Facility's Phone: (313) 923-0080

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Non Hazardous Solid, Not DOT Not RCRA Regulated	016	CF	32000	P	029L
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. Drilling Sludge & Cuttings 8710L
b.
c.
d.

K. Handling Codes for Wastes Listed Above
A.
B.
C.
D.

15. Special Handling Instructions and Additional Information: Emergency Contact:

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Printed/Typed Name: Charles D. Whitten
Signature:
Date: Month Day Year: 08 28 03

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Ronald [illegible]
Signature:
Date: Month Day Year: [illegible]

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Date: Month Day Year

GENERATOR

TRANSPORTER

FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 9/88)

EQP 5110
Rev. 10/02

GENERATOR 1st COPY

APPENDIX E

PAH AREA - PROUCL OUTPUT

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.18/23/2022 3:16:02 PM
From File	Table_4_Copy of PAHWoburn_June28_2022_TableforUCL_revised2_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

PAH

General Statistics

Total Number of Observations	17	Number of Distinct Observations	15
Number of Detects	5	Number of Non-Detects	12
Number of Distinct Detects	5	Number of Distinct Non-Detects	11
Minimum Detect	0.0311	Minimum Non-Detect	0.0293
Maximum Detect	0.64	Maximum Non-Detect	0.63
Variance Detects	0.0552	Percent Non-Detects	70.59%
Mean Detects	0.28	SD Detects	0.235
Median Detects	0.212	CV Detects	0.838
Skewness Detects	0.941	Kurtosis Detects	0.609
Mean of Logged Detects	-1.673	SD of Logged Detects	1.146

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.947	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.214	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.343	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.11	KM Standard Error of Mean	0.0449
KM SD	0.162	95% KM (BCA) UCL	0.194
95% KM (t) UCL	0.189	95% KM (Percentile Bootstrap) UCL	0.194
95% KM (z) UCL	0.184	95% KM Bootstrap t UCL	0.193
90% KM Chebyshev UCL	0.245	95% KM Chebyshev UCL	0.306
97.5% KM Chebyshev UCL	0.391	99% KM Chebyshev UCL	0.557

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.185	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.687	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.155	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.362	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.392	k star (bias corrected MLE)	0.69
Theta hat (MLE)	0.201	Theta star (bias corrected MLE)	0.406

nu hat (MLE)	13.92	nu star (bias corrected)	6.9
Mean (detects)	0.28		
Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)			
For such situations, GROS method may yield incorrect values of UCLs and BTVs			
This is especially true when the sample size is small.			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	0.0895
Maximum	0.64	Median	0.01
SD	0.173	CV	1.933
k hat (MLE)	0.481	k star (bias corrected MLE)	0.435
Theta hat (MLE)	0.186	Theta star (bias corrected MLE)	0.206
nu hat (MLE)	16.35	nu star (bias corrected)	14.8
Adjusted Level of Significance (β)	0.0346		
Approximate Chi Square Value (14.80, α)	7.122	Adjusted Chi Square Value (14.80, β)	6.57
95% Gamma Approximate UCL (use when n>=50)	0.186	95% Gamma Adjusted UCL (use when n<50)	0.202
Estimates of Gamma Parameters using KM Estimates			
Mean (KM)	0.11	SD (KM)	0.162
Variance (KM)	0.0261	SE of Mean (KM)	0.0449
k hat (KM)	0.466	k star (KM)	0.423
nu hat (KM)	15.84	nu star (KM)	14.38
theta hat (KM)	0.237	theta star (KM)	0.261
80% gamma percentile (KM)	0.179	90% gamma percentile (KM)	0.308
95% gamma percentile (KM)	0.45	99% gamma percentile (KM)	0.802
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (14.38, α)	6.833	Adjusted Chi Square Value (14.38, β)	6.293
95% Gamma Approximate KM-UCL (use when n>=50)	0.232	95% Gamma Adjusted KM-UCL (use when n<50)	0.252
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.943	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.222	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.343	Detected Data appear Lognormal at 5% Significance Level	
Detected Data appear Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	0.0972	Mean in Log Scale	-3.271
SD in Original Scale	0.169	SD in Log Scale	1.257
95% t UCL (assumes normality of ROS data)	0.169	95% Percentile Bootstrap UCL	0.165
95% BCA Bootstrap UCL	0.197	95% Bootstrap t UCL	0.275
95% H-UCL (Log ROS)	0.22		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	-2.888	KM Geo Mean	0.0557

KM SD (logged)	1.027	95% Critical H Value (KM-Log)	2.709
KM Standard Error of Mean (logged)	0.299	95% H-UCL (KM -Log)	0.189
KM SD (logged)	1.027	95% Critical H Value (KM-Log)	2.709
KM Standard Error of Mean (logged)	0.299		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.145	Mean in Log Scale	-2.39
SD in Original Scale	0.161	SD in Log Scale	0.991
95% t UCL (Assumes normality)	0.214	95% H-Stat UCL	0.289
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Detected Data appear Normal Distributed at 5% Significance Level			
Suggested UCL to Use			
95% KM (t) UCL	0.189		
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			

APPENDIX F

PCB AREA - PROUCL OUTPUT

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.16/21/2022 11:11:03 AM
From File	PCBWoburn_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

PCB

General Statistics

Total Number of Observations	37	Number of Distinct Observations	25
Number of Detects	22	Number of Non-Detects	15
Number of Distinct Detects	21	Number of Distinct Non-Detects	4
Minimum Detect	0.032	Minimum Non-Detect	0.003
Maximum Detect	3.53	Maximum Non-Detect	0.29
Variance Detects	0.861	Percent Non-Detects	40.54%
Mean Detects	0.693	SD Detects	0.928
Median Detects	0.372	CV Detects	1.339
Skewness Detects	2.361	Kurtosis Detects	5.282
Mean of Logged Detects	-1.103	SD of Logged Detects	1.321

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.668	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.184	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.425	KM Standard Error of Mean	0.13
KM SD	0.771	95% KM (BCA) UCL	0.643
95% KM (t) UCL	0.645	95% KM (Percentile Bootstrap) UCL	0.651
95% KM (z) UCL	0.639	95% KM Bootstrap t UCL	0.905
90% KM Chebyshev UCL	0.815	95% KM Chebyshev UCL	0.991
97.5% KM Chebyshev UCL	1.236	99% KM Chebyshev UCL	1.718

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.399	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.78	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.117	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.192	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.805	k star (bias corrected MLE)	0.726
Theta hat (MLE)	0.861	Theta star (bias corrected MLE)	0.955
nu hat (MLE)	35.42	nu star (bias corrected)	31.93

Mean (detects)	0.693		
Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)			
For such situations, GROS method may yield incorrect values of UCLs and BTVs			
This is especially true when the sample size is small.			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	0.416
Maximum	3.53	Median	0.051
SD	0.786	CV	1.889
k hat (MLE)	0.4	k star (bias corrected MLE)	0.385
Theta hat (MLE)	1.041	Theta star (bias corrected MLE)	1.08
nu hat (MLE)	29.58	nu star (bias corrected)	28.52
Adjusted Level of Significance (β)	0.0431		
Approximate Chi Square Value (28.52, α)	17.33	Adjusted Chi Square Value (28.52, β)	16.95
95% Gamma Approximate UCL (use when n>=50)	0.685	95% Gamma Adjusted UCL (use when n<50)	0.7
Estimates of Gamma Parameters using KM Estimates			
Mean (KM)	0.425	SD (KM)	0.771
Variance (KM)	0.595	SE of Mean (KM)	0.13
k hat (KM)	0.304	k star (KM)	0.298
nu hat (KM)	22.52	nu star (KM)	22.02
theta hat (KM)	1.398	theta star (KM)	1.429
80% gamma percentile (KM)	0.651	90% gamma percentile (KM)	1.256
95% gamma percentile (KM)	1.951	99% gamma percentile (KM)	3.759
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (22.02, α)	12.36	Adjusted Chi Square Value (22.02, β)	12.04
95% Gamma Approximate KM-UCL (use when n>=50)	0.758	95% Gamma Adjusted KM-UCL (use when n<50)	0.778
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.966	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.911	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.104	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.184	Detected Data appear Lognormal at 5% Significance Level	
Detected Data appear Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	0.427	Mean in Log Scale	-2.149
SD in Original Scale	0.781	SD in Log Scale	1.733
95% t UCL (assumes normality of ROS data)	0.643	95% Percentile Bootstrap UCL	0.662
95% BCA Bootstrap UCL	0.728	95% Bootstrap t UCL	0.867
95% H-UCL (Log ROS)	1.375		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	-2.441	KM Geo Mean	0.0871
KM SD (logged)	2.122	95% Critical H Value (KM-Log)	3.91
KM Standard Error of Mean (logged)	0.412	95% H-UCL (KM -Log)	3.301

KM SD (logged)	2.122	95% Critical H Value (KM-Log)	3.91
KM Standard Error of Mean (logged)	0.412		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.44	Mean in Log Scale	-2.023
SD in Original Scale	0.775	SD in Log Scale	1.842
95% t UCL (Assumes normality)	0.655	95% H-Stat UCL	2.111
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Detected Data appear Gamma Distributed at 5% Significance Level			
Suggested UCL to Use			
Gamma Adjusted KM-UCL (use when k<=1 and 15 < n < 50 but k<=1)	0.778		
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			

APPENDIX G

GOOD FAITH ESTIMATE SUMMARY

GOOD FAITH COST ESTIMATE SUMMARY
REMOVAL ACTION
60 OLYMPIA AVENUE
WOBURN, MASSACHUSETTS

Invoice Date	Invoice Number	Invoice Total	Activity/Notes
2003 Professional Services - GeoInsight			
Multiple	Multiple	$ 128,949.70	Prepare Work Plan, collect soil samples, oversee investigations and soil excavation
2003 Remedial Contractor - Trident			
6/4/03	421	$ 10,065.00	Soil excavation
6/30/03	436	$ 8,300.00	Soil excavation and waste pack loading
8/5/03	471	$ 2,415.00	Soil excavation
8/29/03	498	$ 4,672.50	Soil excavation and waste pack loading
2003 Laboratory - Spectrum Analytical Inc., Groundwater Analytical Inc., and GeoTesting Express			
4/15/03	23040515	$ 1,330.00	PCB and PAH analyses - preliminary
4/25/03	23041022	$ 360.00	PCB analyses
6/6/03	23060290	$ 1,530.00	PCB and PAH analyses
6/13/03	23060666	$ 360.00	PCB analyses
6/27/03	23061400	$ 900.00	PCB analyses
8/5/03	23080105	$ 360.00	PCB analyses
4/18/03	71926	$ 794.12	PCB and PAH analyses
4/24/03	71984	$ 77.94	TCLP for metals, disposal evaluation
6/3/03	N/A	$ 3,524.90	TCE analyses
8/20/03	N/A	$ 120.00	Grain size analyses
2003 Soil Disposal - EnviroWaste Management			
7/15/03	2301	$ 7,820.31	Soil disposal
8/25/03	2390	$ 8,663.03	Soil disposal
2003 Drilling - Environmental Drilling and Diversified Environmental			
6/5/03	N/A	$ 2,674.60	Drilling/subsurface investigation for TCE in soil
8/20/03	N/A	$ 2,942.50	Drilling/subsurface investigation for TCE in soil
2004 Professional Services - GeoInsight			
Multiple	Multiple	$ 24,132.58	Data summary and tabulation, prepare Revised TCE Work Plan
2004 Laboratory - Groundwater Analytical Inc.			
1/5/04	N/A	$ 2,956.25	TCE analyses
2022 Professional Services - GeoInsight (includes Action Plan preparation, sampling, laboratory testing, oversight, and final report)			
5/21/22	457	$ 2,240.75	PCB and PAH Removal Action
6/22/22	676	$ 4,799.75	PCB and PAH Removal Action
7/26/22	891	$ 3,010.86	PCB and PAH Removal Action
8/23/22	1046	$ 17,377.71	PCB and PAH Removal Action
9/17/22	1280	$ 5,623.00	PCB and PAH Removal Action
9/26/22	1462	$ 4,852.75	PCB and PAH Removal Action
11/1/22	N/A	$ 10,000.00	PCB and PAH Removal Action (estimate - invoice pending)
2022 Remedial Contractors/Vendors - Trident Environmental Group and Clean Earth			
8/29/22	9783	$ 3,032.80	Soil storage and transport
8/18/22	444346	$ 588.06	Soil disposal
TOTAL		**$ 264,474.11**	