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PROJECT: Work Assignment 006-RSBD-A3E2
DOCUMENT NO.: 3330-006-EO-CORR-00529
SUBJECT: Data Evaluation Oversight Report - Exide-Owned Properties
Price Battery Superfund Site OU 2, Hamburg, PA

Dear Mr. Banks:

CDM Federal Programs Corporation (CDM) is pleased to submit five copies of the enclosed Data Evaluation and Summary Report, Exide-Owned Properties for the Price Battery Site, Operable Unit 2 (OU-2), in Hamburg, PA.

If you have any questions or comments regarding this submittal, please feel free to call me at (717) 560-7500. We look forward to discussing the results of this remedial investigation oversight.

Sincerely,

Lucinda Pype

Lucinda J. Pype
Project Manager
CDM

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CDM

U.S. Environmental Protection Agency Region III

Price Battery Superfund Site OU2
Hamburg, Berks County, Pennsylvania
Exide-Owned Properties
Remedial Investigation/ Feasibility Study
Oversight

February 23, 2009

Data Evaluation Oversight Report

AR302634

Response Action Contract
For Remedial Planning and Oversight Activities

U.S. EPA Contract No. EP-S3-07-06

Data Evaluation Oversight Report
Exide-Owned Properties
Price Battery Superfund Site OU2, Hamburg, PA

Work Assignment No.: 006-RSBD-A3E2
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Prepared for:
U.S. Environmental Protection Agency
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Section 1
Remedial Investigation Oversight Activity

1.1 Introduction

CDM Federal Programs Corporation (CDM) has been contracted by the U.S. Environmental Protection Agency (EPA) Region III to conduct remedial investigation (RI) oversight and collect split samples at the Exide-Owned Properties, located at the Price Battery Superfund Site-OU2 Hamburg, Pennsylvania. The OU2 properties consist of four adjoining parcels referred to as the Main Parcel, the Warehouse Parcel, the Broom Works Parcel and the Parking Lot Parcel. Advanced Geoservices Inc. (AGI) was contracted by the Potentially Responsible Parties (PRPs) to perform well development, and groundwater, soil and sediment sampling in support of the PRP's RI.

This report summarizes CDM's oversight activities, including the results of the split samples collected, during the PRP's RI activities that took place from September 3 through October 8, 2008. AGI's Draft RI figures showing sampling locations for each parcel are included as Appendix A. Complete laboratory analytical results and validation packages for CDM's split samples are located in Appendix B. EPA Region III risk-based concentrations (RBCs) from September 2008 are located in Appendix C.

1.2 Summary of PRP Investigation Activities

AGI collected 302 soil samples (not including archived samples) from 78 borings at predetermined intervals with a truck-mounted Geoprobe® rig. These intervals were: 9-15" below ground surface (bgs), 33-39" bgs, 57-63" bgs, 81-87" bgs, 105-111"bgs and 129-135" bgs. Once native soils were reached, the final sample for analysis was collected, and a minimum of three additional samples was collected for archiving, only to be analyzed if the sample taken from the top of the native soils exceeded the site screening levels.

Lead, antimony and arsenic are the primary contaminants of concern on the site and all soil, groundwater, and sediment samples were analyzed for these metals at a minimum. Additionally, at least ten percent of all PRP metals samples received full target analyte list (TAL) metals analysis. Selected samples were also analyzed for volatile organic compounds (VOCs), semi volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and total petroleum hydrocarbons diesel range organics (TPH DRO) at predetermined sample locations or based on field observations as detailed in the PRP's "Remedial Investigation/ Feasibility Study (RI/FS) Workplan, Exide-Owned Properties, Price Battery Superfund Site, Hamburg

Pennsylvania" dated December 2007, reissued April 25th, 2008 with replacement pages issued on August 1, 2008.

Four monitoring wells were originally installed on the Main Parcel by EPA's START contractor under the pre-remedial program, which occurred from July to December of 2002. These wells were scheduled for resampling during the PRP's OU2 RI and required redevelopment. AGI redeveloped the wells on September 4 and 5, 2008 using a two-inch Grundfos® pump.

After redevelopment, AGI used low-flow sampling procedures to sample groundwater from the four existing onsite monitoring wells. AGI used a bladder pump with new components for each well. All of the wells were purged until water quality indicators (temperature, pH, conductivity, dissolved oxygen, and turbidity) had stabilized and a specific water volume was purged before samples were collected. These volume requirements were three well volumes for well screens over 10 feet in length (MW-3 and MW-4) and one well volume for well screens less than or equal to 10 feet in length (MW-1 and MW-2), as specified by EPA. Two of the wells (MW- 1 and MW-4) stabilized at elevated (>10 nephelometric turbidity units (NTU)) turbidity readings (27.9 and 27.4 NTUs respectively). Monitoring wells were sampled by AGI for VOCs, SVOCs, metals, PCBs, and TPH DRO.

Modified Level D personal protective equipment (PPE), including steel-toed boots and protective gloves, was used by AGI during all sampling activities.

1.3 Quality Assurance/Quality Control

CDM's Field Sampling Plan (FSP) is included in CDM's Final Site Management Plan (SMP) for Remedial Investigation/ Feasibility Study Oversight, dated September 15, 2008. In accordance with the approved SMP, CDM collected various quality assurance/ quality control (QA/QC) samples. No duplicate samples were required for this oversight. Soil matrix spike/matrix spike duplicates (MS/MSDs) were designated by the laboratory. No rinsate blanks, field blanks or trip blanks were required for the soil or sediment samples and a groundwater trip blank was not submitted for analysis. The results of CDM's QA/QC samples are presented in the data validation packages in Appendix B.

1.4 CDM Oversight and Split Sampling Summary

CDM conducted oversight of the PRP's activities during their September and October 2008 well development, groundwater, sediment and soil sampling events. Oversight activities included overseeing the redevelopment of existing groundwater wells, equipment decontamination procedures, sample packing procedures, and completion of the chains of custody as well as the collection of split samples from soil, sediment, and groundwater sampling.

All of CDM's split samples were analyzed by laboratories assigned by EPA's Analytical Services and Quality Assurance Branch (ASQAB). Samples for organic analyses were sent to Shealy Environmental located in Cayce, South Carolina. Samples for inorganic analyses were submitted to Bonner Analytical Testing Company, located in Hattiesburg, Mississippi. TPH DRO samples were sent to the EPA Region III laboratory at Fort Meade, Maryland. Complete data packages with analytical results from the laboratories used by CDM are provided in Appendix B.

CDM collected split soil samples from selected borings at every non-archived interval at the following frequencies:

Table 1 Sample Analysis Summary for PRP and CDM

Parcel and Sample Matrix	PRP		CDM		Analysis
	Number of borings	Number of intervals	Number of borings	Number of intervals	
Main Parcel (AGI Figures 3,7,8)					
Soil Samples	49	193	11	37	VOCs, SVOCs, Metals, PCBs, TPH DRO
Groundwater Samples	4	NA	1	NA	VOCs, SVOCs, Metals, PCBs
Sediment Samples	4	NA	1	NA	Metals
Warehouse Parcel (AGI Figure 4)					
Soil Samples	16	64	5	16	VOCs, SVOCs, Metals
Broom Works Parcel (AGI Figure 5)					
Soil Samples	8	26	3	9	VOCs, SVOCs, Metals
Parking Lot Parcel (AGI Figure 6)					
Soil Samples	5	19	1	3	VOCs, SVOCs, Metals

Notes:
AGI Figures are located in Appendix A
PRP collected additional archive samples that are not included in the above table. Only analyzed samples are discussed.
PRP collected and analyzed four sediment samples and two groundwater samples above what was required by their work plan (not included in Table 1)
CDM collected one sample from an interval not sampled by the PRP (WH13-18)
VOCs were collected from 25% of AGI's sample locations at a frequency of two intervals per sample location
PCBs and TPH DRO were only collected from predetermined borings.
PRP collected groundwater samples for TPH DRO, which was not required in their work plan. CDM did not collect groundwater samples for TPH DRO.

The split samples were distributed across the site to ensure representative sampling from both the varied materials encountered within the fill and the different historical processes employed across the site.

CDM's SMP called for a minimum of one split for every five samples collected by the PRPs (20%) for each medium. CDM met the requirement for soil, sediment and groundwater split samples.

- 11 of 49 borings completed at the Main Parcel (22%),
- 5 of 16 borings completed at the Warehouse Parcel (31%),
- 3 of 8 borings completed at the Broom Works Parcel (38%).
- 1 of 5 borings completed at the Parking Lot Parcel (20%),
- 1 of 4 monitoring wells sampled (25%)
- 1 of 4 sediment samples collected (25%)

1.5 Other Observations/Deviations

The PRP performed groundwater, soil and sediment sample collections in accordance with the PRP's RI/FS Workplan.

The following observations were noted:

- When examining the soil core at Warehouse Parcel boring location WH13, CDM oversight personnel observed a dark stained interval located at 18" bgs, between two of AGI's sampling intervals. This material was sampled by CDM and not sampled by AGI. The following SVOCs were observed above their residential RBC in micrograms per kilogram (µg/kg), in this interval.

Analyte	Result µg/kg	Residential RBC µg/kg
benzo(a)anthracene	**270**	150
benzo(a)pyrene	**230**	15
benzo(b)fluoranthene	**360**	150

- Metals results for the 18" bgs interval at WH13 were consistent with AGI's results for other intervals within boring WH13.
- No SVOC exceedances were found by AGI at other intervals within boring WH13.
- At Main Parcel boring location MP45-33, a strong fuel odor, similar to gasoline, was observed by CDM and AGI personnel and confirmed by elevated photo ionization detector (PID) readings. For every VOC detection where both the CDM (SOW SOM01.2) and AGI (SW 846 8260B) analyses had a result above the reporting limit, the relative percent difference (RPD) was greater than 90%, with the results from the CDM sample at least an order of magnitude higher than AGI's result. As noted above in parentheses, both parties used similar, but not identical, analytical methods for the samples.

These methods have slightly different targeted compound lists and detection limits, but are considered comparable for results above the reporting limits.

- CDM provided oversight of the well development activity and observed that MW-1 went dry twice before water quality parameters stabilized and MW-4 did not properly stabilize during redevelopment (turbidity remained high).

Section 2
Data Summary Evaluation

This section of the report presents the results of analyses of split samples accepted by CDM from the September/October 2008 sampling event.

2.1 Data Quality Parameters

CDM has been tasked to accept split samples to assess the reliability of the results from the PRP. Parameters of interest are TAL metals, specifically lead, antimony and arsenic, TPH DRO, target compound list (TCL) VOCs and TCL SVOCs. The reliability of the PRP's sample results may be measured in terms of RPD. Reliability was assessed by comparing the results of the samples collected by the PRP with the results of the samples collected by CDM. The RPD was calculated for each pair of results using the following equation:

RPD = S - D / ((S + D) / 2) TIMES 100

Where: S = PRP sample concentration (original value); and
D = CDM sample concentration (duplicate value).

If the RPD between a pair of positive detections (CDM sample results for a sample location and the PRP sample results for the same location) is less than or equal to 35% for soil samples or 25% for groundwater samples, then the PRP's data will be deemed reliable.

CDM collected a matrix spike/matrix spike duplicate (MS/MSD) at MW-3 for groundwater. Soil MS/MSDs were designated by the laboratory. Results from the MS/MSD analysis are included with the validation reports in Appendix B. As noted in the SMP, no duplicates were required for this oversight event.

2.1.1 Accuracy and Precision

The accuracy and precision requirements for the specified analyses were verified according to the criteria specified in the CLP Statements of Work (SOWs). Sample results not meeting the specified criteria were reported with the appropriate data validation qualifiers. The validation reports are included in Appendix B.

If an analysis failed laboratory precision criteria (percent relative standard deviation (%RSD) and/or percent difference (%D)) in the initial or continuing laboratory calibrations, the associated positive results for these compounds were qualified "J"- analyte present: reported value may not be accurate or precise.

If an analysis had low matrix spike recoveries (<75% but >30%), positive results for those analytes within the affected samples were qualified "L"-analyte present: reported value may be biased low, actual value may be higher.

If an analysis had high matrix spike recoveries (>125%), positive results for those analytes within the affected samples were qualified "K"-analyte present: reported value may be biased high, actual value may be lower.

2.1.2 Representativeness

Results of the analysis of laboratory blank samples were reviewed during data validation. If an analyte was detected in a method, preparation, trip, or rinsate blank, any associated positive results less than 10 times the blank value were qualified "B."

2.1.3 Completeness

Results obtained from samples collected exceeded CDM's completeness goal of 90 percent. Only nine analytical results out of over 1,400 were rejected as unreliable. These were 1,4-dioxane at borings MP08-09, MP08-81, MP48-33, MP48-57, WH2-33, and WH7-09 and antimony at borings WH07-33, MP21-105, and MP34-81.

2.1.4 Comparability

Split samples collected under this oversight investigation were analyzed using standard EPA analytical methods to ensure comparability of results with the PRP data. Both parties used similar, but not identical, analytical methods for the samples. The EPA assigned laboratories used SOW SOM01.2 - trace water for VOCs and SVOCs, and ILM05.4 ICP-AES for TAL inorganics. AGI's laboratory (Test America) used SW846 6010B for metals and SW846 8260B for organics. These methods have slightly different targeted compound lists and detection limits, but are considered comparable for results above the reporting limits.

2.2 Summary of CDM Split Sampling Results

CDM's sample identification numbers indicate the name of the sampling location and minimum depth of the sampling interval. All samples were analyzed for selected metals (antimony, arsenic and lead) with total metals analysis completed on PRP paired samples that were analyzed for total metals. A limited number of samples were analyzed for VOCs, SVOCs, PCBs, and TPH DRO as specified in the PRP workplan. Tables 2 through 7 contain the split sample results and RPD for all split sampling pairs. CDM's complete analytical results for OU2 split samples are provided in Appendix B. Figure 2-1, Site Location Map, shows the general site location and Figure 2-2, Site Map, shows the relationship of the four parcels to each other. Maps of the sampling locations for each parcel are included in Appendix A. Conclusions and recommendations derived from the RPD analysis are presented in Section 3.

2.2.1 Soil Samples

Sixty-four split soil samples and one soil sample not collected by the PRP were collected by CDM from the four parcels being investigated by the PRP. Results by analysis type are presented below by parcel.

Main Parcel

Complete results for CDM's split samples are shown on Tables 2a through 2f, and sample locations are shown on AGI Figure 3 (Appendix A). The PRPs completed 49 soil borings on the Main Parcel, and CDM collected split samples from 37 intervals from 11 of these borings.

Thirty-two soil samples were collected from the Main Parcel and analyzed for selected metals (antimony, arsenic and lead). Selected metals are shown on Table 2a. Of the 96 individual laboratory results, 37 (38.5%) had RPDs greater than 35%, and, of these, the majority (83%) of the high RPD sample results were close to the reporting limits of the analysis. Seven of the high RPD sample results (7.3%) were over the site specific screening levels for antimony, arsenic or lead and, in five of the seven cases, the SW846 6010B method used by the PRP returned higher results than ILM05.4 ICP-AES used by EPA. At MP28-33, the ILM05.4 ICP-AES method result for arsenic was 21.3 milligram per kilogram (mg/kg) and the SW846 method was 11.4 mg/kg. At MP46-33, the SW846 8010B method result for arsenic was 22.5 mg/kg, and the ILM05.4 ICP-AES result was 49.9 mg/kg. With the exception of these two pairs noted above, the results returned by the SW846 method used by the PRPs, while exceeding the reliability threshold established for the RPD calculation, were more conservative than the results from the ILM method used by EPA.

Five total metals soil samples were collected from the Main Parcel (Table 2b). Out of 115 analytical results, 40 (34.8%) had RPDs exceeding 35%. The majority of these were also clustered near the reporting limit, with two primary exceptions for lead results. For sample MP34-57, the ILM05.4 ICP-AES method returned a result of 1,820 mg/kg versus the SW846 6010B result of 135 mg/kg for lead. At MP48-9, the result for lead was 2,100 mg/kg via ILM05.4 ICP-AES and 1,340 mg/kg for SW846 6010B. The ILM05.4 ICP-AES method used by EPA provided more conservative results than the SW846 method used by the PRPs in these cases.

Five split soil samples from the Main Parcel were analyzed for VOCs, and complete results are shown on Table 2c. At four of these locations (MP8-09, MP8-81, MP48-33, and MP48-57) there were no significant detections of VOCs above the reporting limits. At MP45-33, every detection where both analyses had a result above the reporting limit had an RPD greater than 90%, with the results from the SOW SOM01.2 method used by EPA at least an order of magnitude higher than the PRPs SW846 8260B result. The PRPs SW846 data failed the reliability criteria in all of these cases.

Five split soil samples from the Main Parcel were analyzed for SVOCs, and complete results are shown on Table 2d. Two semi volatile analytes (naphthalene and 2-methylnaphthalene) from soil boring MP45-33 at the Main Parcel had an RPD greater than 35%. For naphthalene, the SW846 8260B method returned a result of 6,600 µg/kg, and the SOW SOM01.2 method returned a result of 3,500 µg/kg, resulting in an RPD of 61.4%. 2-methylnaphthalene was 4,300 µg/kg under SOW SOM01.2 and 6,600 µg/kg under SW846 8260B. In both of these cases, the SW846 method used by the PRPs provided more conservative results than the SOW SOM01.2 method used by EPA, even though the RPD exceeded the reliability criteria.

One split soil sample was analyzed for TPH DRO (Table 2e). The results returned under the SOW SOM01.2 method were below the reporting limit while the SW846 8015 method returned a result of 67mg/kg. The SW846 method used by the PRP returned the more conservative result.

Four split soil samples from the Main Parcel were analyzed for PCBs (Table 2f). One sample, MP48D-09 (aroclor 1260), had an RPD exceeding the reliability threshold of 35%. The SOW SOM01.2 result was 210 µg/kg and the SW846 8082 result was 140 µg/kg. Both results were under the residential RBC of 220 µg/kg . At MP48-9 the EPA analysis returned a result of 330 µg/kg (aroclor 1254) while the PRP result was non detect. In both of these cases the SOW SOM01.2 result returned a more conservative value.

Warehouse Parcel

Complete results for CDM's split soil samples are shown on Tables 3a through 3c, and sample locations are shown on AGI Figure 4 (Appendix A). Sixteen soil borings were completed on the Warehouse Parcel by the PRP, and CDM collected split samples from 16 intervals from five of these borings.

Fifteen soil samples from the Warehouse Parcel were analyzed for selected metals and the results are shown on Table 3a. Out of the 45 analytical results, 20 (41.7%) of them had RPDs exceeding 35%. Nine of these results (20%) were due to L qualified data (analyte present, reported value may be biased low) associated with the EPA ILM05.4 ICP-AES method. Two sample locations had high RPDs and exceeded the lead site screening level. WH2-57 had an ILM05.4 ICP-AES result of 39,400 mg/kg for lead and the SW846 8010B result was 11,300 mg/kg. At WH13-9 the ILM05.4 ICP-AES method returned a result for lead of 4,540 mg/kg and the SW846 results were 2,820 mg/kg. Both of these results exceed the site screening level for lead with the ILM05.4 ICP-AES method used by EPA returning the more conservative result.

Two split soil samples from the Warehouse Parcel were designated for VOC analysis (Table 3b). No VOCs were detected in the split soil samples from the Warehouse Parcel.

Two split soil samples and one sample only analyzed by EPA (WH13-18 discussed in Section 1.5) from the Warehouse Parcel were designated for SVOC analysis (Table 3c). Twelve analytical results had RPDs greater than 35%, and in each case the associated SOW SOM01.2 data was J qualified (analyte present, value may not be accurate or precise). The SW846 8260B data for four of these results (WH07-09 benzo(a)anthracene - 260 µg/kg, benzo(a)pyrene – 320 µg/kg, and benzo(b)flouranthene - 230 µg/kg) were above the residential RBCs for these compounds. At WH2-33, the SOW SOM01.2 result for benzo(b)flouranthene was 800 µg/kg compared to an SW846 8260B analytical result of 490 µg/kg, resulting in an RPD of 48.1%. At WH2-33 the SOW SOM01.2 used by EPA provided the more conservative analytical result, however, both results were above the residential RBCs. In all other cases the SW846 8260B method used by the PRPs was more conservative.

Broom Works Parcel

Complete results for CDM's split soil samples on the Broom Works Parcel are shown on Tables 4a through 4d and sample locations are shown on AGI Figure 5 (Appendix A). Eight soil borings were completed on the Broom Works Parcel by the PRPs, and CDM collected split soil samples from nine intervals from three of these borings.

Eight split soil samples from the Broom Works Parcel were analyzed for selected metals (Table 4a). Twelve (50%) of the 24 results had RPDs exceeding 35%, and 10 of those 12 results were associated with L or J qualified data. At BW1-21, the ILM05.4 ICP-AES result for lead was 1,720 mg/kg, and the SW846 6010B result was 1,830 mg/kg. Sample interval BW8-9 had an ILM05.4 ICP-AES result for arsenic of 56 mg/kg and an SW846 6010B result of 12.2 mg/kg. Sample interval BW5-9 had an ILM05.4 ICP-AES result for lead of 1,060 mg/kg and an SW846 6010B result of 558 mg/kg. The ILM05.4 ICP-AES results from EPA's analysis for arsenic at BW8-9 and lead at BW5-9 exceeded the residential screening levels and provide a more conservative result for screening level considerations than the method used by the PRPs.

One total metals split soil sample was collected from the Broom Works Parcel (Table 4b). Out of 23 analytical results, 7 (30.4%) had RPDs exceeding 35%. Only one of these results exceeded the site screening level for antimony with the SW846 8010B method returning a result of 119 mg/kg and the ILM05.4 ICP-AES method returning a result of 54.6 mg/kg. In addition, all of the ILM05.4 ICP-AES data was "J" or "L" flagged. The SW846 8260B method used by the PRPs was more conservative for these analytes.

One split soil sample from the Broom Works Parcel was analyzed for VOCs (Table 4c). None of the RPDs exceeded 35% for VOC analysis and no compounds were detected above the Region III RBCs.

One split soil sample from the Broom Works Parcel was analyzed for SVOCs (Table 4d). Benzo(b)flouranthene at sample location BW8-9 was 1,300 µg/kg via SOW SOM01.2 and 770 µg/kg via SW846 8260B (an RPD of 40.8%). The SOW SOM01.2 method used by EPA returned the more conservative result.

Parking Lot Parcel

Complete results for CDM's split soil samples on the Parking Lot Parcel are shown on Tables 5a through 5d and sample locations are shown on AGI Figure 6 (Appendix A). Five soil borings were completed on the Parking Lot Parcel by the PRPs, and CDM collected split samples from three intervals from one of these borings.

Two split soil samples were collected from the Parking Lot Parcel and analyzed for selected metals (Table 5a). Antimony had RPDs exceeding 35% for both of these samples; however, the results were both well below site screening levels. The results for arsenic in both samples were well above the residential RBC and had satisfactory RPD values.

One split soil sample from the Parking Lot Parcel was analyzed for total metals (Table 5b). Seven (30.4%) of the 23 results had RPDs exceeding 35% and all 7 of those results were associated with ILM05.4 ICP-AES L or J qualified data. Two of those 7 results in the SW846 8260B data were above the residential RBCs (arsenic – 73.1 mg/kg and iron – 69,200 mg/kg). The SW846 data collected by the PRPs provides the more conservative values when compared to the ILM05.4 ICP-AES data in this case.

No VOCs were detected in the single split soil sample collected from the Parking Lot Parcel (Table 5c).

One split soil sample from the Parking Lot Parcel was designated for SVOC analysis (Table 5d). Eleven analytical results had RPDs greater than 35%. With the SOW SOM01.2 data, 10 of those 11 results were associated with J qualified data and only one of those 10 results (benzo(a)pyrene – 100 µg/kg) detected was above the residential RBC for the compound. The SW846 8260B data for 5 of the 11 results (benzo(a)anthracene – 2,200 µg/kg, benzo(a)pyrene – 1,700 µg/kg, benzo(b)flouranthene – 1,800 µg/kg, dibenz(a,h)anthracene 420 µg/kg and indeno(1,2,3-cd)pyrene – 1,000 µg/kg) were above the residential RBCs for these compounds. The SW846 data collected by the PRPs is consistently higher than the SOM01.1 in these samples and would provide more conservative screening level data.

2.2.2 Groundwater Samples

Complete results for CDM's single split groundwater sample are shown on Tables 6a through 6d, and sample locations are shown on AGI Figure 8 (Appendix A). One groundwater split sample was collected by CDM and analyzed for dissolved metals, VOCs, SVOCs, and PCBs.

No inorganic compounds were detected above the USEPA Region III drinking water maximum contaminant levels (MCLs) or RBCs (where applicable) as shown on Table 6a. RPDs ranged from 0% to 30.8% where both laboratories detected inorganic analytes at concentrations above their respective reporting limits, with only one analyte, nickel, exceeding the accepted RPD limit of 25%. Both analytical methods returned results near the reporting limits for this analyte, and the high RPD at this level may not be an accurate reflection of data usability.

The analytical results from the split groundwater sample collected from MW-3 show no VOCs (Table 6b), SVOCs (Table 6c), or PCBs (Table 6d) above the reporting limits.

2.2.3 Sediment Samples

Complete results for CDM's single split sediment sample are shown on Table 7, and sample locations are shown on AGI Figure 7 (Appendix A). One sediment sample was collected from Kaercher Creek for selected metals analysis. All of the analyses had RPDs greater than 35% with the SW846 6010B method used by the PRPs returning consistently higher results than the ILM05.4 ICP-AES method used by EPA. In the PRP analysis, antimony and lead both exceeded residential and industrial soil RBCs, with the SW846 results providing more conservative results. For future analysis, sediment data should be screened against the USEPA Region III ecological risk assessment freshwater sediment screening benchmarks.

Section 3
Conclusions and Recommendations

Overall, based on the RPD comparisons, the results from the samples collected from the site by the PRP and CDM were consistent for samples where the results from both analytical methods were above the reporting limit. There are, however, several examples detailed in Section 2.2 that had high RPDs at values exceeding site screening levels. Based on these results, CDM recommends:

- In areas where RPDs exceed 35% for soil samples and the highest result exceeds site screening levels or Region III RBC's, CDM recommends that the highest value should be used for risk assessment calculations. In most cases this will be the PRP data with the following exceptions where the EPA methods returned higher results:
    - MP28-33 arsenic (21.3 mg/kg)
    - MP34-57 lead (1,820 mg/kg)
    - MP46-33 arsenic (49.9 mg/kg)
    - MP48-9 lead (2,100 mg/kg)
    - MP48-9 aroclor 1254 (330 µg/kg)
    - MP45-33 all volatile analysis
    - WH2-33 benzo(b)flouranthene (800 µg/kg)
    - WH2-57 lead (39,400 mg/kg)
    - WH13-9 lead (4,540 mg/kg)
    - BW5-9 lead (1,060 mg/kg)
    - BW8-9 arsenic (56 mg/kg)
    - BW8-9 benzo(b)flouranthene (1,300 µg/kg)

- Due to the different lab methods used, high RPDs are to be expected from results near the reporting limits. The variations in results at or above screening levels are most likely due to different materials within the fill material that resist homogenization.

- The VOCs (cyclohexane, ethylbenzene, isopropyl benzene, m,p-xylene, methylcyclohexane, methylene chloride, toluene and trichloroethene) detected at boring MP45-33 were not typical of wastes encountered during previous investigations at the site. Further investigation of this area is warranted.

- SVOC exceedances at WH7 and WH13 are also not typical for the site and could indicate a greater range of contaminants is present then was anticipated in the PRPs original investigation. Since SVOCs were a limited component of the site investigation (approximately 25% of samples were designated for

SVOC analysis) a greater percentage of samples should be analyzed for SVOCs in future sampling events.

- Aroclor detections at MP-48, as analyzed by EPA method SOW SOM01.2, indicate that detected results are near or exceeding the residential RBCs, whereas the PRP method SW846 8082 returned non detect results or results much less than the residential RBCs. CDM recommends that the aroclor data analyzed by EPA is used in the PRP risk assessment.

- MW-1, MW-3 and MW-4 exhibited irregularities during sampling or development. MW-1 stabilized at a high turbidity during sampling. MW-4 did not stabilize during development and stabilized at a high turbidity during sampling. MW-3 pumped dry twice during development. These wells may be unsuitable for future use during subsequent studies.

Section 4
References

CDM. 2008. *Final Site Management Plan, Price Battery OU-2 Oversight, Berks County, Hamburg, Pennsylvania.* September 15, 2008.

AGI. 2007. *Remedial Investigation/Feasibility Study Workplan, Exide-owned Properties, Price Battery Superfund Site, Hamburg, Pennsylvania.* December 2007. Reissued April 25, 2008. Replacement pages issued August 1, 2008

Tables

Table 2a Selected Metals Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP08-09					MP08-33				
Metals	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	2 5	J	5 8		79 5%	0 35	B	1 2	U	NA
ARSENIC	MG/KG	7 2	L	6 5		10 2%	2 6	L	3 4		26 7%
LEAD	MG/KG	151	J	143	J	5 4%	21 5	J	21 3	J	0 9%
		MP08-57					MP08-91				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	1	B	1 8		NA	7 3	UL	1 2	U	NA
ARSENIC	MG/KG	3	L	3 2		6 5%	0 53	B	1 9		NA
LEAD	MG/KG	224	J	69 8	J	105 0%	12 3	J	12 5	J	1 6%
		MP08-09					MP08-33				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	2 9	J	18 2		145 0%	0 94	B	1 5		NA
ARSENIC	MG/KG	4 3	L	7		47 8%	6 9	L	5 7		19 0%
LEAD	MG/KG	7080	J	19600	J	93 9%	114	J	86.1	J	27 9%
		MP21-9					MP21-57				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	2 8	J	5 7	J	68 2%	5 2	J	8 5	J	48 2%
ARSENIC	MG/KG	9 2	L	11.3		20 5%	5 7	L	6 2		8 4%
LEAD	MG/KG	573	J	732		24 4%	633	J	672		6 0%
		MP21-81					MP21-105				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0 66	J	0 3	J	75.0%	R		0 28	J	NA
ARSENIC	MG/KG	4	L	5 2		26 1%	5 1	L	4 7		8 2%
LEAD	MG/KG	13 2	J	16 1		19 8%	10 1	J	14		32 4%
		MP21-129					MP28-9				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0 55	J	0 14	J	118 8%	101	L	153	J	40 9%
ARSENIC	MG/KG	3 5	L	3 6		2 8%	2 8	L	3 4		19 4%
LEAD	MG/KG	13 6	J	13 5		0 7%	683	J	601		12 8%

Notes

L Analyte Present. Reported value may be biased low

J Analyte Present. Reported value may not be accurate or precise

B The analyte concerned was also detected in the laboratory or field blank associated with the sample

U Non-detect

NA = Not applicable

Table 2a Selected Metals Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP28-33					MP28-57				
Metals	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	111	L	141	J	23 8%	51 9	L	154	J	99 2%
ARSENIC	MG/KG	21 3	L	11 4		60.6%	9 4	L	23 1		84 3%
LEAD	MG/KG	237	J	62 9		116 1%	56 3	J	238		123.5%
		MP28-81					MP84-57				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	2.6	J	12.8	J	132.5%	R		1 3	UJ	NA
ARSENIC	MG/KG	36	L	39.1		8 3%	2		2		0 0%
LEAD	MG/KG	50.8	J	64 7		24.1%	11 1	L	11 5	J	3 5%
		MP41-9					MP41-33				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	25.3	L	138	J	138.0%	0 46	J	1 4	J	101.1%
ARSENIC	MG/KG	7		9 2		27 2%	2.9		3 3		12 9%
LEAD	MG/KG	2440	J	2980		19 9%	28	J	32 3		14 3%
		MP41-57					MP41-81				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0.77	J	1.2	J	43 7%	0.57	B	1 1	J	NA
ARSENIC	MG/KG	2.9		5 6		63 5%	2 1		2 5		17 4%
LEAD	MG/KG	10 6	J	15 8		39 4%	9.7	J	17.7		58 4%
		MP44-9					MP44-33				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0.45	J	0 19	J	81.3%	1.2	J	2 5	J	70 3%
ARSENIC	MG/KG	3.8		4.2		10 0%	11 2		12.7		12 6%
LEAD	MG/KG	13.7	L	17 8		26.0%	79 8	L	78.3	J	1 9%
		MP44-57					MP44-81				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0.38	J	1.2	UJ	NA	0.72	J	1 2	UJ	NA
ARSENIC	MG/KG	4		3 8		5 1%	5 8		6		3 4%
LEAD	MG/KG	10 1	L	15 3		40.9%	17 9	L	16 7	J	6 9%
		MP46-33					MP46-57				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	5.9	J	84 8	J	174 0%	0 56	B	1 2	UJ	NA
ARSENIC	MG/KG	49.9		22.5		75 7%	1 9		1 8		5 4%
LEAD	MG/KG	725	J	2610		113 0%	22 5	J	21 3		5 5%

Notes

L Analyte Present. Reported value may be biased low

J Analyte Present. Reported value may not be accurate or precise

B The analyte concerned was also detected in the laboratory or field blank associated with the sample

U Non-detect

NA = Not applicable

Table 2a Selected Metals Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP48-33					MP48-81				
Metals	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0 92	J	2.8	J	101 1%	0 33	J	0 19	J	53.8%
ARSENIC	MG/KG	4		6.7		50 5%	2 9		4 3		38 9%
LEAD	MG/KG	462	L	257	J	57 0%	8 1	L	13 5	J	50 0%
		MP50-9					MP50-33				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0.37	J	1 1	UJ	NA	2 6	J	5 9	J	77 6%
ARSENIC	MG/KG	3		3.3		9 5%	5 9		6		1 7%
LEAD	MG/KG	17.2	L	20.8		18 9%	307	L	291	J	5 4%
		MP50-57					MP50-81				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0 75	J	0 15	J	133.3%	0 51	J	1.1	UJ	73.3%
ARSENIC	MG/KG	6 1		7 1		15.2%	3.5		4.3		20 5%
LEAD	MG/KG	16.2	L	15 5		4 4%	10 5	L	14 6	J	32 7%

Notes

L. Analyte Present. Reported value may be biased low

J. Analyte Present. Reported value may not be accurate or precise

B. The analyte concerned was also detected in the laboratory or field blank associated with the sample

U Non-detect

NA = Not applicable

Table 2b Total Metals Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP34-33					MP34-57					MP45-33				
Metals	Units	CDM		AGI		RPD	CDM		AGI		RPD	CDM		AGI		RPD
ALUMINUM	MG/KG	4230		3530	J	18.0%	3930		12500	J	104.3%	14900	J	12100		20.7%
ANTIMONY	MG/KG	2	J	1.6	J	22.2%	20.7	L	6.2	J	107.8%	0.48	J	1.3	J	92.1%
ARSENIC	MG/KG	4.8		5.1		6.1%	5.7		5.6		1.8%	4	L	4		0.0%
BARIUM	MG/KG	68.1		40.9		49.9%	55.9		111		66.0%	123	J	105		15.8%
BERYLLIUM	MG/KG	0.6		0.45	U	28.6%	0.32	J	0.58	J	57.8%	0.86	J	0.96	J	11.0%
CADMIUM	MG/KG	0.22	J	0.41	J	60.3%	1.2		0.16	J	152.9%	0.032	B	0.23	J	151.1%
CALCIUM	MG/KG	9650		26100		92.0%	156000		876		197.8%	2030	J	1840		9.8%
CHROMIUM	MG/KG	9.1		5		58.2%	8.2		20.8		86.9%	15.4	J	15.3		0.7%
COBALT	MG/KG	4.1	J	3.7	J	10.3%	3.5	J	4.6	J	27.2%	10.1	J	9.2		9.3%
COPPER	MG/KG	41	K	34.8		16.4%	20.8	K	72.2		NA	15.1	J	17.6		15.3%
IRON	MG/KG	16100		24800		42.5%	8690		12900		39.0%	19500	J	20300		4.0%
LEAD	MG/KG	58.7		40.7	J	36.2%	1820		135		172.4%	45	J	51.4	J	13.3%
MAGNESIUM	MG/KG	929		3960		124.0%	62300		1740		189.1%	2070	J	1910		8.0%
MANGANESE	MG/KG	53.6		37		36.6%	263		63.6	J	122.1%	1230	J	758		47.5%
MERCURY	MG/KG	0.12		0.13	J	8.0%	0.42		0.69	J	48.6%	0.11	J	0.048		78.5%
NICKEL	MG/KG	8.3		8.5		2.4%	8.8		13.2		40.0%	14.8	J	14.7		0.7%
POTASSIUM	MG/KG	909		571		45.7%	1050		781		29.4%	1050	J	977		7.2%
SELENIUM	MG/KG	3.5	U	0.56	U	NA	3.5	U	0.37	J	NA	2.1	J	0.64	U	NA
SILVER	MG/KG	0.11	B	0.56	U	NA	1	UL	0.63	U	NA	1	UL	0.11	J	NA
SODIUM	MG/KG	441	B	224	J	NA	287	B	632	U	NA	77.4	J	70.2	J	9.8%
THALIUM	MG/KG	2.5	UL	0.71	J	NA	2.5	UL	0.58	J	NA	NA	NA	1.3	U	NA
VANADIUM	MG/KG	12.9		8.9		36.7%	9.8		33.5		109.5%	22.9	J	21		8.7%
ZINC	MG/KG	15.2	J	15.5	J	2.0%	118	J	53.1	J	75.9%	52.3	J	56.1	J	7.0%

Notes:

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J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

CDM

Table 2b Total Metals Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP48-57					MP48-9				
Metals	Units	CDM		AGI		RPD	CDM		AGI		RPD
ALUMINUM	MG/KG	19500		15200	J	24.8%	7470		7410	J	0.8%
ANTIMONY	MG/KG	1	J	0.2	J	133.3%	18.2	L	32.3	J	55.8%
ARSENIC	MG/KG	2.7		4.9		57.9%	6.7		6.5		3.0%
BARIUM	MG/KG	78.6		82.6		5.0%	69.1		78.8		13.1%
BERYLLIUM	MG/KG	1		1		0.0%	0.5	J	0.49		2.0%
CADMIUM	MG/KG	0.26	J	0.44	J	51.4%	1.5		1		40.0%
CALCIUM	MG/KG	770		790		2.6%	97400		44500		74.6%
CHROMIUM	MG/KG	19.3		18.6		3.7%	13.1		11.4		13.9%
COBALT	MG/KG	14.3		13.7		4.3%	6		5.5		8.7%
COPPER	MG/KG	29.5	K	32		8.1%	25.5	K	21.5		17.0%
IRON	MG/KG	36400		30800	J	16.7%	13000		14300	J	9.5%
LEAD	MG/KG	13.7		15.4		11.7%	2100		1340		44.2%
MAGNESIUM	MG/KG	7050		5160		31.0%	41000		26700		42.2%
MANGANESE	MG/KG	1210		1690	J	33.1%	283		273	J	3.6%
MERCURY	MG/KG	0.1	U	0.02	J	NA	0.21		0.11		62.5%
NICKEL	MG/KG	31.4		26.6		16.6%	13.6		11.5		16.7%
POTASSIUM	MG/KG	1700		1200		34.5%	1710		866		65.5%
SELENIUM	MG/KG	3.5	U	0.55	U	NA	3.5	U	0.53	U	NA
SILVER	MG/KG	1	UL	0.4	J	NA	0.43	B	0.14	J	NA
SODIUM	MG/KG	129	B	33.5	J	NA	223	B	81.7	J	NA
THALIUM	MG/KG	2.5	UL	0.77	J	NA	2.5	UL	0.36	J	NA
VANADIUM	MG/KG	22.4		17.5		24.6%	15		13.2		12.8%
ZINC	MG/KG	73.6	J	67	J	9.4%	146	J	153	J	4.7%

Notes:

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J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 2c VOCs Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP08-09					MP08-91				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
1,1,1-Trichloroethane	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
1,1,2,2-Tetrachloroethane	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
1,1,2-Trichloroethane	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
1,1-Dichloroethane	UG/KG	5	U	7 3	U	NA	5	U	6 5	U	NA
1,1-Dichloroethene	UG/KG	1 3	B	7 3	U	NA	0 81	B	6 5	U	NA
1,2,3-Trichlorobenzene	UG/KG	1 4	B	NA	NA	NA	0 57	B	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	1 3	B	7 3	U	NA	0 52	B	6 5	U	NA
1,2-Dibromo-3-chloropropane	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
1,2-Dibromoethane	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
1,2-Dichlorobenzene	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
1,2-Dichloroethane	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
1,2-Dichloropropane	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
1,3-Dichlorobenzene	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
1,4-Dichlorobenzene	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
1,4-Dioxane	UG/KG		R	NA	NA	NA		R	NA	NA	NA
2-Butanone	UG/KG	23	B	5 1	J	NA	6.2	B	6 5	U	NA
2-Hexanone	UG/KG	12	B	7 3	U	NA	6 4	B	6 5	U	NA
4-Methyl-2-pentanone	UG/KG	1 7	J	7 3	U	NA	0 67	J	6 5	U	NA
Acetone	UG/KG	57	B	16	J	NA	13	B	26	U	NA
Benzene	UG/KG	5	UL	7 3	UJ	NA	5	U	6 5	UJ	NA
Bromochloromethane	UG/KG	5	U	NA	NA	NA	5	U	NA	NA	NA
Bromodichloromethane	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
Bromoform	UG/KG	5	U	7 3	U	NA	5	U	6 5	U	NA
Bromomethane	UG/KG	5	U	7 3	U	NA	5	U	6 5	U	NA
CarbonDisulfide	UG/KG	0 97	J	7 3	U	NA	5	U	6 5	U	NA
Carbontetrachloride	UG/KG	14	L	7 3	U	NA	5	U	6 5	U	NA
Chlorobenzene	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
Chloroethane	UG/KG	5	U	7 3	UJ	NA	5	U	6 5	UJ	NA

Notes

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J- Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample

U Non-detect

NA = Not applicable

Table 2c VOCs Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP08-09					MP08-81				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
Chloroform	UG/KG	5	U	7 3	U	NA	5	U	6 5	U	NA
Chloromethane	UG/KG	5	U	7 3	U	NA	5	U	6 5	U	NA
cis-1,2-Dichloroethene	UG/KG	5	U	7 3	U	NA	5	U	6 5	U	NA
cis-1,3-Dichloropropene	UG/KG	5	UL	7 3	U	NA	5	U	6.5	U	NA
Cyclohexane	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
Dibromochloromethane	UG/KG	5	U	7 3	U	NA	5	U	6 5	U	NA
Dichlorodifluoromethane	UG/KG	5	U	7 3	U	NA	5	U	6 5	U	NA
Ethylbenzene	UG/KG	5	UL	7.3	U	NA	5	U	6.5	U	NA
Isopropylbenzene	UG/KG	5	UL	7 3	U	NA	5	U	6.5	U	NA
m,p-Xylene	UG/KG	5	UL	NA	NA	NA	5	U	NA	NA	NA
Methylacetate	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
Methylcyclohexane	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
Methylenechloride	UG/KG	1 1	B	7 3	U	NA	0 58	B	6 5	U	NA
Methyltert-butylether	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
o-Xylene	UG/KG	5	UL	NA	NA	NA	5	U	NA	NA	NA
Styrene	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
Tetrachloroethene	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
Toluene	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
trans-1,2-Dichloroethene	UG/KG	5	U	7 3	U	NA	5	U	6 5	U	NA
trans-1,3-Dichloropropene	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
Trichloroethene	UG/KG	5	UL	7 3	U	NA	5	U	6 5	U	NA
Trichlorofluoromethane	UG/KG	5	UL	7 3	UJ	NA	5	U	6 5	UJ	NA
Vinylchloride	UG/KG	5	U	7 3	U	NA	5	U	6.5	U	NA
Xylenes (total)	UG/KG	NA	NA	22	U	NA	NA	NA	20	U	NA

Notes.

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J- Analyte Present. Reported value may not be accurate or precise.

B. The analyte concerned was also detected in the laboratory or field blank associated with the sample

U - Non-detect

NA = Not applicable

Table 2c VOCs Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP45-33					MP48-33				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
1,1,1-Trichloroethane	UG/KG	250	UL	280	U	NA	5	U	49	UJ	NA
1,1,2,2-Tetrachloroethane	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
1,1,2-Trichloroethane	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
1,1-Dichloroethane	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
1,1-Dichloroethene	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
1,2,3-Trichlorobenzene	UG/KG	250	UL	NA	NA	NA	5	U	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	250	UL	100	J	NA	5	U	49	U	NA
1,2-Dibromo-3-chloropropane	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
1,2-Dibromoethane	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
1,2-Dichlorobenzene	UG/KG	250	UL	43	J	NA	5	U	49	U	NA
1,2-Dichloroethane	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
1,2-Dichloropropane	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
1,3-Dichlorobenzene	UG/KG	250	UL	33	J	NA	5	U	49	U	NA
1,4-Dichlorobenzene	UG/KG	250	UL	43	J	NA	5	U	49	U	NA
1,4-Dioxane	UG/KG	5000	UL	NA	NA	NA		R	NA	NA	NA
2-Butanone	UG/KG	500	UL	280	U	NA	74	B	49	U	NA
2-Hexanone	UG/KG	500	UL	280	U	NA	85	B	49	U	NA
4-Methyl-2-pentanone	UG/KG	500	UL	280	U	NA	10	U	49	UJ	NA
Acetone	UG/KG	500	UL	1100	U	NA	12	B	20	U	NA
Benzene	UG/KG	250	UL	330		NA	5	U	49	U	NA
Bromochloromethane	UG/KG	250	UL	NA	NA	NA	5	U	NA	NA	NA
Bromodichloromethane	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
Bromoform	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
Bromomethane	UG/KG	250	UL	280	U	NA	5	U	49	UJ	NA
CarbonDisulfide	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
Carbontetrachloride	UG/KG	250	UL	280	U	NA	5	U	49	UJ	NA
Chlorobenzene	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
Chloroethane	UG/KG	250	UL	280	U	NA	5	U	49	UJ	NA

Notes.

L: Analyte Present. Reported value may be biased low

J: Analyte Present. Reported value may not be accurate or precise

B. The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U Non-detect

NA = Not applicable

Table 2c VOCs Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

Analyte	Units	MP46-33 CDM	Qualifier	AGI	Qualifier	RPD	MP46-33 CDM	Qualifier	AGI	Qualifier	RPD
Chloroform	UG/KG	61000	J	310		99 5%	0 62	B	4 9	U	NA
Chloromethane	UG/KG	34000	J	280	U	NA	5	U	4 9	U	NA
cis-1,2-Dichloroethene	UG/KG	250	UL	280	U	NA	5	U	4 9	U	NA
cis-1,3-Dichloropropene	UG/KG	250	UL	280	U	NA	5	U	4 9	U	NA
Cyclohexane	UG/KG	1400000	L	3600		99 7%	5	U	4 9	U	NA
Dibromochloromethane	UG/KG	250	UL	280	U	NA	5	U	4 9	U	NA
Dichlorodifluoromethane	UG/KG	250	UL	280	U	NA	5	U	4 9	U	NA
Ethylbenzene	UG/KG	2400000	L	13000		99 5%	5	U	4 9	U	NA
Isopropylbenzene	UG/KG	530000	L	2600		99 5%	5	U	4 9	U	NA
m,p-Xylene	UG/KG	600000	L	280		100 0%	5	U	NA	NA	NA
Methylacetate	UG/KG	250	UL	280	U	NA	5	U	4 9	U	NA
Methylcyclohexane	UG/KG	1100000	L	5200		99 5%	5	U	4 9	U	NA
Methylenechloride	UG/KG	22000	J	280	U	NA	1 4	B	4 9	U	NA
Methyltert-butylether	UG/KG	250	UL	280		NA	5	U	NA	NA	NA
o-Xylene	UG/KG	250	UL	280		NA	5	U	NA	NA	NA
Styrene	UG/KG	250	UL	280	U	NA	5	U	4 9	U	NA
Tetrachloroethene	UG/KG	250	UL	280	U	NA	5	U	4 9	U	NA
Toluene	UG/KG	23000	J	170	J	99 3%	5	U	4 9	U	NA
trans-1,2-Dichloroethene	UG/KG	250	UL	280	U	NA	5	U	4 9	U	NA
trans-1,3-Dichloropropene	UG/KG	250	UL	280	U	NA	5	U	4 9	U	NA
Trichloroethene	UG/KG	24000	J	280	U	NA	5	U	4 9	U	NA
Trichlorofluoromethane	UG/KG	250	UL	280	U	NA	5	U	4 9	UJ	NA
Vinylchloride	UG/KG	250	UL	280	U	NA	5	U	4 9	U	NA
Xylenes (total)	UG/KG	NA	NA	8300		NA	NA	NA	15	U	NA

Notes

L. Analyte Present. Reported value may be biased low

J: Analyte Present. Reported value may not be accurate or precise.

B. The analyte concerned was also detected in the laboratory or field blank associated with the sample

U . Non-detect

NA = Not applicable

Table 2c VOCs Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP-48-57				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD
1,1,1-Trichloroethane	UG/KG	5	UL	4.9	U	NA
1,1,2,2-Tetrachloroethane	UG/KG	5	U	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/KG	5	UL	4 9	U	NA
1,1,2-Trichloroethane	UG/KG	5	U	4 9	U	NA
1,1-Dichloroethane	UG/KG	5	U	4 9	U	NA
1,1-Dichloroethene	UG/KG	5	UL	4 9	U	NA
1,2,3-Trichlorobenzene	UG/KG	0 63	B	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	0 48	B	4 9	UJ	NA
1,2-Dibromo-3-chloropropane	UG/KG	5	U	4 9	U	NA
1,2-Dibromoethane	UG/KG	5	UL	4 9	U	NA
1,2-Dichlorobenzene	UG/KG	5	UL	4 9	U	NA
1,2-Dichloroethane	UG/KG	5	UL	4 9	U	NA
1,2-Dichloropropane	UG/KG	5	U	4 9	U	NA
1,3-Dichlorobenzene	UG/KG	5	UL	4 9	U	NA
1,4-Dichlorobenzene	UG/KG	5	UL	4 9	U	NA
1,4-Dioxane	UG/KG		R	NA	NA	NA
2-Butanone	UG/KG	10	U	4 9	UJ	NA
2-Hexanone	UG/KG	5 3	B	4 9	UJ	NA
4-Methyl-2-pentanone	UG/KG	10	U	4 9	UJ	NA
Acetone	UG/KG	4 4	B	20	U	NA
Benzene	UG/KG	5	UL	4 9	U	NA
Bromochloromethane	UG/KG	5	U	NA	NA	NA
Bromodichloromethane	UG/KG	5	U	4 9	U	NA
Bromoform	UG/KG	5	U	4 9	U	NA
Bromomethane	UG/KG	5	U	4 9	UJ	NA
CarbonDisulfide	UG/KG	5	U	4 9	U	NA
Carbontetrachloride	UG/KG	5	UL	4 9	U	NA
Chlorobenzene	UG/KG	5	UL	4 9	U	NA
Chloroethane	UG/KG	5	U	4 9	U	NA

Notes

L. Analyte Present. Reported value may be biased low

J Analyte Present. Reported value may not be accurate or precise

B. The analyte concerned was also detected in the laboratory or field blank associated with the sample

U Non-detect

NA = Not applicable

Table 2c VOCs Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP48-57				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD
Chloroform	UG/KG	5	U	49	U	NA
Chloromethane	UG/KG	5	U	49	UJ	NA
cis-1,2-Dichloroethene	UG/KG	5	U	49	U	NA
cis-1,3-Dichloropropene	UG/KG	5	U	49	U	NA
Cyclohexane	UG/KG	5	U	49	U	NA
Dibromochloromethane	UG/KG	5	U	49	U	NA
Dichlorodifluoromethane	UG/KG	5	U	49	U	NA
Ethylbenzene	UG/KG	5	UL	49	U	NA
Isopropylbenzene	UG/KG	5	UL	49	U	NA
m,p-Xylene	UG/KG	5	UL	NA	NA	NA
Methylacetate	UG/KG	5	UL	49	U	NA
Methylcyclohexane	UG/KG	5	U	49	U	NA
Methylenechloride	UG/KG	11	B	49	U	NA
Methyltert-butylether	UG/KG	5	UL	NA	NA	NA
o-Xylene	UG/KG	5	UL	NA	NA	NA
Styrene	UG/KG	5	UL	49	U	NA
Tetrachloroethene	UG/KG	5	UL	49	U	NA
Toluene	UG/KG	5	UL	49	U	NA
trans-1,2-Dichloroethene	UG/KG	5	U	49	U	NA
trans-1,3-Dichloropropene	UG/KG	5	U	49	U	NA
Trichloroethene	UG/KG	5	UL	49	U	NA
Trichlorofluoromethane	UG/KG	5	UL	49	U	NA
Vinylchloride	UG/KG	5	U	49	U	NA
Xylenes (total)	UG/KG	NA	NA	15	U	NA

Notes

L. Analyte Present. Reported value may be biased low.

J- Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample

U . Non-detect

NA = Not applicable

Table 2d SVOCs Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP06-09					MP08-81				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
1,1'-Biphenyl	UG/KG	170	U	450	U	NA	170	U	390	U	NA
1,2,4,5-Tetrachlorobenzene	UG/KG	170	U	NA	NA	NA	170	U	NA	NA	NA
2,2'-Oxybis(1-chloropropane)	UG/KG	170	U	92	U	NA	170	U	79	U	NA
2,3,4,6-Tetrachlorophenol	UG/KG	170	U	NA	NA	NA	170	U	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	170	U	450	U	NA	170	U	390	U	NA
2,4,6-Trichlorophenol	UG/KG	170	U	450	U	NA	170	U	390	U	NA
2,4-Dichlorophenol	UG/KG	170	U	92	U	NA	170	U	79	U	NA
2,4-Dimethylphenol	UG/KG	170	U	450	U	NA	170	U	390	U	NA
2,4-Dinitrophenol	UG/KG	330	U	2300	U	NA	330	U	2000	U	NA
2,4-Dinitrotoluene	UG/KG	170	U	450	U	NA	170	U	390	U	NA
2,6-Dinitrotoluene	UG/KG	170	U	450	U	NA	170	U	390	U	NA
2-Chloronaphthalene	UG/KG	170	U	92	U	NA	170	U	79	U	NA
2-Chlorophenol	UG/KG	170	U	450	U	NA	170	U	390	U	NA
2-Methylnaphthalene	UG/KG	170	U	74	J	NA	170	U	79	U	NA
2-Methylphenol	UG/KG	170	U	450	U	NA	170	U	390	U	NA
2-Nitroaniline	UG/KG	330	U	2300	U	NA	330	U	2000	U	NA
2-Nitrophenol	UG/KG	170	U	450	U	NA	170	U	390	U	NA
3,3'-Dichlorobenzidine	UG/KG	170	U	450	U	NA	170	U	390	U	NA
3-Nitroaniline	UG/KG	330	U	2300	U	NA	330	U	2000	U	NA
4,6-Dinitro-2-methylphenol	UG/KG	330	U	2300	U	NA	330	U	2000	U	NA
4-Bromophenyl-phenylether	UG/KG	170	U	450	U	NA	170	U	390	U	NA
4-Chloro-3-methylphenol	UG/KG	170	U	450	U	NA	170	U	390	U	NA
4-Chloroaniline	UG/KG	170	U	450	U	NA	170	U	390	U	NA
4-Chlorophenyl-phenylether	UG/KG	170	U	450	U	NA	170	U	390	U	NA
4-Methylphenol	UG/KG	170	U	450	U	NA	170	U	390	U	NA
4-Nitroaniline	UG/KG	330	U	2300	U	NA	330	U	2000	U	NA
4-Nitrophenol	UG/KG	330	U	2300	U	NA	330	U	2000	U	NA
Acenaphthene	UG/KG	170	U	92	U	NA	170	U	79	U	NA
Acenaphthylene	UG/KG	170	U	29	J	NA	170	U	79	U	NA
Acetophenone	UG/KG	170	U	450	U	NA	170	U	390	U	NA
Anthracene	UG/KG	27	J	62	J	NA	170	U	79	U	NA
Atrazine	UG/KG	170	U	450	U	NA	170	U	390	U	NA

Notes

L: Analyte Present. Reported value may be biased low

J Analyte Present. Reported value may not be accurate or precise

B The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U Non-detect

NA = Not applicable

Table 2d SVOCs Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP08-09					MP08-91				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
Benzaldehyde	UG/KG	170	U	450	U	NA	170	U	390	U	NA
Benzo(a)anthracene	UG/KG	210	J	240		13.3%	170	U	79	U	NA
Benzo(a)pyrene	UG/KG	240	J	240		0.0%	170	U	79	U	NA
Benzo(b)fluoranthene	UG/KG	370		420		12.7%	170	U	79	U	NA
Benzo(G,h,I)perylene	UG/KG	180	J	150		18.2%	170	U	79	U	NA
Benzo(k)fluoranthene	UG/KG	150	J	92	U	NA	170	U	79	U	NA
Bis(2-Chloroethoxy)methane	UG/KG	170	U	450	U	NA	170	U	390	U	NA
Bis(2-Chloroethyl)ether	UG/KG	170	U	92	U	NA	170	U	79	U	NA
Bis(2-ethylhexyl)phthalate	UG/KG	170	U	450	U	NA	170	U	390	U	NA
Butylbenzylphthalate	UG/KG	170	U	450	U	NA	170	U	390	U	NA
Caprolact	UG/KG	170	U	2300	U	NA	170	U	2000	U	NA
Carbazole	UG/KG	170	U	27	J	NA	170	U	79	U	NA
Chrysene	UG/KG	300		290		3 4%	170	U	79	U	NA
Dibenzo(a,h)anthracene	UG/KG	170	U	38	J	NA	170	U	79	U	NA
Dibenzofuran	UG/KG	170	U	31	J	NA	170	U	390	U	NA
Diethylphthalate	UG/KG	170	U	450	U	NA	170	U	390	U	NA
Dimethylphthalate	UG/KG	170	U	450	U	NA	170	U	390	U	NA
Di-n-butylphthalate	UG/KG	170	U	450	U	NA	22	J	390	U	NA
Di-n-octylphthalate	UG/KG	170	U	450	U	NA	170	U	390	U	NA
Fluoranthene	UG/KG	460		420		9 1%	170	U	79	U	NA
Fluorene	UG/KG	170	U	23	J	NA	170	U	79	U	NA
Hexachlorobenzene	UG/KG	170	U	92	U	NA	170	U	79	U	NA
Hexachlorobutadiene	UG/KG	170	U	92	U	NA	170	U	79	U	NA
Hexachlorocyclopentadiene	UG/KG	170	U	450	U	NA	170	U	390	U	NA
Hexachloroethane	UG/KG	170	U	450	U	NA	170	U	390	U	NA
Indeno(1,2,3-cd)pyrene	UG/KG	170	J	150		12.5%	170	U	79	U	NA
Isophorone	UG/KG	170	U	450	U	NA	170	U	390	U	NA
Naphthalene	UG/KG	170	U	55	J	NA	170	U	79	U	NA
Nitrobenzene	UG/KG	170	U	92	U	NA	170	U	79	U	NA
N-Nitroso-di-n-propyline	UG/KG	170	U	92	U	NA	170	U	79	U	NA
N-Nitrosodiphenyline	UG/KG	170	U	92	U	NA	170	U	79	U	NA
Pentachlorophenol	UG/KG	330	U	450	U	NA	330	U	390	U	NA
Phenanthrene	UG/KG	190	J	250		27.3%	170	U	79	U	NA
Phenol	UG/KG	170	U	92	U	NA	170	U	79	U	NA
Pyrene	UG/KG	350		390		10 8%	170	U	79	U	NA

Notes.

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B The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U Non-detect

NA = Not applicable

Table 2d SVOCs Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP48-33					MP48-33				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
1,1'-Biphenyl	UG/KG	73	J	2100	U	NA	170	U	390	U	NA
1,2,4,5-Tetrachlorobenzene	UG/KG	170	U	NA	NA	NA	170	U	NA	NA	NA
2,2'-Oxybis(1-chloropropane)	UG/KG	170	U	430	U	NA	170	U	80	U	NA
2,3,4,6-Tetrachlorophenol	UG/KG	170	U	NA	NA	NA	170	U	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
2,4,6-Trichlorophenol	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
2,4-Dichlorophenol	UG/KG	170	U	430	U	NA	170	U	80	U	NA
2,4-Dimethylphenol	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
2,4-Dinitrophenol	UG/KG	330	U	11000	U	NA	330	U	2000	U	NA
2,4-Dinitrotoluene	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
2,6-Dinitrotoluene	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
2-Chloronaphthalene	UG/KG	170	U	430	U	NA	170	U	80	U	NA
2-Chlorophenol	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
2-Methylnaphthalene	UG/KG	4300		6600		42.2%	170	U	80	U	NA
2-Methylphenol	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
2-Nitroaniline	UG/KG	330	U	11000	U	NA	330	U	2000	U	NA
2-Nitrophenol	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
3,3'-Dichlorobenzidine	UG/KG	170	U	2100	U	NA	170	U	390	UJ	NA
3-Nitroaniline	UG/KG	330	U	11000	U	NA	330	U	2000	U	NA
4,6-Dinitro-2-methylphenol	UG/KG	330	U	11000	U	NA	330	U	2000	U	NA
4-Bromophenyl-phenylether	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
4-Chloro-3-methylphenol	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
4-Chloroaniline	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
4-Chlorophenyl-phenylether	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
4-Methylphenol	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
4-Nitroaniline	UG/KG	330	U	11000	U	NA	330	U	2000	U	NA
4-Nitrophenol	UG/KG	330	U	11000	U	NA	330	U	2000	U	NA
Acenaphthene	UG/KG	70	J	430	U	NA	170	U	80	U	NA
Acenaphthylene	UG/KG	170	U	430	U	NA	170	U	80	U	NA
Acetophenone	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
Anthracene	UG/KG	170	U	430	U	NA	170	U	80	U	NA
Atrazine	UG/KG	170	U	2100	UJ	NA	170	U	390	UJ	NA

Notes

L Analyte Present. Reported value may be biased low

J Analyte Present. Reported value may not be accurate or precise.

B The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U Non-detect

NA = Not applicable

Table 2d SVOCs Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP45-33					MP49-33				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
Benzaldehyde	UG/KG	170	U	2100	UJ	NA	170	U	390	UJ	NA
Benzo(a)anthracene	UG/KG	170	U	430	U	NA	170	U	31	J	NA
Benzo(a)pyrene	UG/KG	170	U	430	U	NA	45	J	29	J	43.2%
Benzo(b)fluoranthene	UG/KG	170	U	430	U	NA	52	J	59	J	12.6%
Benzo(G,h,I)perylene	UG/KG	170	U	430	U	NA	24	J	28	J	15.4%
Benzo(k)fluoranthene	UG/KG	170	U	430	U	NA	29	J	80	UJ	NA
Bis(2-Chloroethoxy)methane	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
Bis(2-Chloroethyl)ether	UG/KG	170	U	430	U	NA	170	U	80	U	NA
Bis(2-ethylhexyl)phthalate	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
Butylbenzylphthalate	UG/KG	170	U	2100	UJ	NA	170	U	390	UJ	NA
Caprolact	UG/KG	170	U	11000	U	NA	170	U	2000	UJ	NA
Carbazole	UG/KG	170	U	430	U	NA	170	U	80	U	NA
Chrysene	UG/KG	170	U	430	U	NA	170	U	31	J	NA
Dibenzo(a,h)anthracene	UG/KG	170	U	430	U	NA	24	J	80	UJ	NA
Dibenzofuran	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
Diethylphthalate	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
Dimethylphthalate	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
Di-n-butylphthalate	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
Di-n-octylphthalate	UG/KG	170	U	2100	U	NA	170	U	390	UJ	NA
Fluoranthene	UG/KG	49	J	430	U	NA	32	J	28	J	13 3%
Fluorene	UG/KG	95	J	430	U	NA	170	U	80	U	NA
Hexachlorobenzene	UG/KG	170	U	430	U	NA	170	U	80	U	NA
Hexachlorobutadiene	UG/KG	170	U	430	U	NA	170	U	80	U	NA
Hexachlorocyclopentadiene	UG/KG	170	U	2100	UJ	NA	170	U	390	UJ	NA
Hexachloroethane	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
Indeno(1,2,3-cd)pyrene	UG/KG	170	U	430	U	NA	30	J	80	UJ	NA
Isophorone	UG/KG	170	U	2100	U	NA	170	U	390	U	NA
Naphthalene	UG/KG	3500		6600		61 4%	170	U	80	U	NA
Nitrobenzene	UG/KG	170	U	430	U	NA	170	U	80	U	NA
N-Nitroso-di-n-propyline	UG/KG	180	J	430	U	NA	170	U	80	U	NA
N-Nitrosodiphenyline	UG/KG	170	U	430	U	NA	170	U	80	U	NA
Pentachlorophenol	UG/KG	330	U	2100	U	NA	330	U	390	UJ	NA
Phenanthrene	UG/KG	130	J	170	J	26.7%	170	U	80	U	NA
Phenol	UG/KG	170	U	430	U	NA	170	U	80	U	NA
Pyrene	UG/KG	72	J	430	U	NA	33	J	28	J	23 7%

Notes.

L Analyte Present. Reported value may be biased low

J Analyte Present. Reported value may not be accurate or precise.

B The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U Non-detect

NA = Not applicable

Table 2d SVOCs Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

Analyte	Units	MP48-57 CDM	Qualifier	AGI	Qualifier	RPD
1,1'-Biphenyl	UG/KG	170	U	370	U	NA
1,2,4,5-Tetrachlorobenzene	UG/KG	170	U	NA	NA	NA
2,2'-Oxybis(1-chloropropane)	UG/KG	170	U	74	U	NA
2,3,4,6-Tetrachlorophenol	UG/KG	170	U	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	170	U	370	U	NA
2,4,6-Trichlorophenol	UG/KG	170	U	370	U	NA
2,4-Dichlorophenol	UG/KG	170	U	74	U	NA
2,4-Dimethylphenol	UG/KG	170	U	370	U	NA
2,4-Dinitrophenol	UG/KG	330	U	1900	U	NA
2,4-Dinitrotoluene	UG/KG	170	U	370	U	NA
2,6-Dinitrotoluene	UG/KG	170	U	370	U	NA
2-Chloronaphthalene	UG/KG	170	U	74	U	NA
2-Chlorophenol	UG/KG	170	U	370	U	NA
2-Methylnaphthalene	UG/KG	170	U	74	U	NA
2-Methylphenol	UG/KG	170	U	370	U	NA
2-Nitroaniline	UG/KG	330	U	1900	U	NA
2-Nitrophenol	UG/KG	170	U	370	U	NA
3,3'-Dichlorobenzidine	UG/KG	170	U	370	UJ	NA
3-Nitroaniline	UG/KG	330	U	1900	U	NA
4,6-Dinitro-2-methylphenol	UG/KG	330	U	1900	U	NA
4-Bromophenyl-phenylether	UG/KG	170	U	370	U	NA
4-Chloro-3-methylphenol	UG/KG	170	U	370	U	NA
4-Chloroaniline	UG/KG	170	U	370	U	NA
4-Chlorophenyl-phenylether	UG/KG	170	U	370	U	NA
4-Methylphenol	UG/KG	170	U	370	U	NA
4-Nitroaniline	UG/KG	330	U	1900	U	NA
4-Nitrophenol	UG/KG	330	U	1900	U	NA
Acenaphthene	UG/KG	170	U	74	U	NA
Acenaphthylene	UG/KG	170	U	74	U	NA
Acetophenone	UG/KG	170	U	370	U	NA
Anthracene	UG/KG	170	U	74	U	NA
Atrazine	UG/KG	170	U	370	UJ	NA

Notes:

L Analyte Present. Reported value may be biased low

J Analyte Present. Reported value may not be accurate or precise.

B The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U Non-detect

NA = Not applicable

Table 2d SVOCs Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

Analyte	Units	MP48-57 CDM	Qualifier	AGI	Qualifier	RPD
Benzaldehyde	UG/KG	170	U	370	UJ	NA
Benzo(a)anthracene	UG/KG	170	U	74	U	NA
Benzo(a)pyrene	UG/KG	170	U	74	U	NA
Benzo(b)fluoranthene	UG/KG	170	U	74	UJ	NA
Benzo(G,h,i)perylene	UG/KG	170	U	74	UJ	NA
Benzo(k)fluoranthene	UG/KG	170	U	74	UJ	NA
Bis(2-Chloroethoxy)methane	UG/KG	170	U	370	U	NA
Bis(2-Chloroethyl)ether	UG/KG	170	U	74	U	NA
Bis(2-ethylhexyl)phthalate	UG/KG	82	J	370	U	NA
Butylbenzylphthalate	UG/KG	170	U	370	UJ	NA
Caprotact	UG/KG	170	U	1900	UJ	NA
Carbazole	UG/KG	170	U	74	U	NA
Chrysene	UG/KG	170	U	74	U	NA
Dibenzo(a,h)anthracene	UG/KG	170	U	74	UJ	NA
Dibenzofuran	UG/KG	170	U	370	U	NA
Diethylphthalate	UG/KG	170	U	370	U	NA
Dimethylphthalate	UG/KG	170	U	370	U	NA
Di-n-butylphthalate	UG/KG	170	U	370	U	NA
Di-n-octylphthalate	UG/KG	170	U	370	UJ	NA
Fluoranthene	UG/KG	170	U	74	U	NA
Fluorene	UG/KG	170	U	74	U	NA
Hexachlorobenzene	UG/KG	170	U	74	U	NA
Hexachlorobutadiene	UG/KG	170	U	74	U	NA
Hexachlorocyclopentadiene	UG/KG	170	U	370	UJ	NA
Hexachloroethane	UG/KG	170	U	370	U	NA
Indeno(1,2,3-cd)pyrene	UG/KG	170	U	74	UJ	NA
Isophorone	UG/KG	170	U	370	U	NA
Naphthalene	UG/KG	170	U	74	U	NA
Nitrobenzene	UG/KG	170	U	74	U	NA
N-Nitroso-di-n-propyline	UG/KG	170	U	74	U	NA
N-Nitrosodiphenyline	UG/KG	170	U	74	U	NA
Pentachlorophenol	UG/KG	330	U	370	UJ	NA
Phenanthrene	UG/KG	170	U	74	U	NA
Phenol	UG/KG	170	U	74	U	NA
Pyrene	UG/KG	21	J	74	U	NA

Notes

L Analyte Present. Reported value may be biased low

J Analyte Present. Reported value may not be accurate or precise

B The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U Non-detect

NA = Not applicable

Table 2e TPH DRO Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP8-S7				
Parameter	Units	CDM	Qualifier	AGI	Qualifier	RPD
Diesel Range Organics	MG/KG	ND	U	67		NA

Notes:

U : Non-detect

NA = Not applicable

Table 2f PCBs Sample Comparison
Main Parcel
Price Battery OU2
Hamburg, Pennsylvania

		MP48-57					MP48-9				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
Aroclor-1016	UG/KG	33	U	ND		NA	33	U	ND		NA
Aroclor-1221	UG/KG	33	U	ND		NA	33	U	ND		NA
Aroclor-1232	UG/KG	33	U	ND		NA	33	U	ND		NA
Aroclor-1242	UG/KG	33	U	ND		NA	33	U	ND		NA
Aroclor-1248	UG/KG	33	U	ND		NA	33	U	ND		NA
Aroclor-1254	UG/KG	33	U	ND		NA	330	J	ND		NA
Aroclor-1260	UG/KG	33	U	ND		NA	33	U	ND		NA
Aroclor-1262	UG/KG	33	U	NA		NA	33	U	NA		NA
Aroclor-1268	UG/KG	33	U	NA		NA	33	U	NA		NA
		MP48C-09					MP48D-09				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
Aroclor-1016	UG/KG	33	U	ND		NA	33	U	ND		NA
Aroclor-1221	UG/KG	33	U	ND		NA	33	U	ND		NA
Aroclor-1232	UG/KG	33	U	ND		NA	33	U	ND		NA
Aroclor-1242	UG/KG	33	U	ND		NA	33	U	ND		NA
Aroclor-1248	UG/KG	33	U	ND		NA	33	U	ND		NA
Aroclor-1254	UG/KG	33	U	ND		NA	33	U	56		NA
Aroclor-1260	UG/KG	33	U	ND		NA	210		140		40.00%
Aroclor-1262	UG/KG	33	U	NA		NA	33	U	NA		NA
Aroclor-1268	UG/KG	33	U	NA		NA	33	U	NA		NA

Notes:

L. Analyte Present. Reported value may be biased low.

J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 3a Selected Metals Sample Comparison
Warehouse
Price Battery OU2
Hamburg, Pennsylvania

		WH2-09					WH2-93				
Metals	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	15.9	L	48.2		100.8%	116	L	271		80.1%
ARSENIC	MG/KG	12.1	L	12.6		4.0%	44.2	L	41.8		5.6%
LEAD	MG/KG	45100	J	32000		34.0%	9860	J	12500		23.6%
		WH2-57					WH2-81				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	231	L	447		63.7%	1.1	J	1.3	J	16.7%
ARSENIC	MG/KG	61.2	L	68.4		11.1%	5.7	L	8.5		39.4%
LEAD	MG/KG	39400	J	11300		110.8%	71.6	J	117		48.1%
		WH5-9					WH5-33				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	3.1	J	8.1	J	89.3%	4	J	13.3	J	107.5%
ARSENIC	MG/KG	4.9	L	5.5		11 5%	6.8	L	9.6		34.1%
LEAD	MG/KG	1120	J	858		26.5%	2090	J	1530		30.9%
		WH5-57					WH5-81				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	9.8	L	33.9	J	110.3%	1.9	J	6.4	J	108.4%
ARSENIC	MG/KG	8.2	L	18.5		77.2%	9.2	L	9.4		2.2%
LEAD	MG/KG	1780	J	1680		5.8%	454	J	525		14.5%
		WH7-09					WH7-33				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	4.2	J	7.9		61.2%		R	1.1	J	NA
ARSENIC	MG/KG	6.9	L	5.6		20.8%	3.7	L	5.2		33.7%
LEAD	MG/KG	308	J	402		26.5%	63.7	J	71.6		11.7%

Notes:

L: Analyte Present. Reported value may be biased low.

J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 3a Selected Metals Sample Comparison
Warehouse
Price Battery OU2
Hamburg, Pennsylvania

		WH7-57					WH12-09				
Metals	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0.46	J	1.1	U	82.1%	97	L	435	J	127.1%
ARSENIC	MG/KG	3.2	L	5.2		47.6%	20.4	L	30.7		40.3%
LEAD	MG/KG	9.5	J	10.6		10.9%	23200	J	29000		22.2%
		WH12-33					WH13-9				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0.94	J	0.21	J	127.0%	16.9	L	25.3	J	39.8%
ARSENIC	MG/KG	4.3	L	5.6		26.3%	7.4	L	7.1		4.1%
LEAD	MG/KG	24.2	J	22.6		6.8%	4540	J	2820		46.7%
		WH13-18					WH13-33				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	1.1	J	NA	NA	NA	0.67	J	0.19	J	111.6%
ARSENIC	MG/KG	4 6	L	NA	NA	NA	3.2	L	7.4		79.2%
LEAD	MG/KG	58 8	J	NA	NA	NA	21 8	J	34 7		45.7%

Notes:

L: Analyte Present. Reported value may be biased low.

J. Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 3b VOCs Sample Comparison
Warehouse
Price Battery
Hamburg, Pennsylvania

		WH2-33					WH7-09				
Analyte	Units	CDM	Qualifier	ACI	Qualifier	RPD	CDM	Qualifier	ACI	Qualifier	RPD
1,1,1-Trichloroethane	UG/KG	5	U	5	U	NA	5	U	19	U	NA
1,1,2,2-Tetrachloroethane	UG/KG	5	U	5	U	NA	5	U	19	U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/KG	5	U	5	U	NA	5	U	19	U	NA
1,1,2-Trichloroethane	UG/KG	5	U	5	U	NA	5	U	19	U	NA
1,1-Dichloroethane	UG/KG	5	U	5	U	NA	5	U	19	U	NA
1,1-Dichloroethene	UG/KG	0 73	B	5	U	NA	5	U	19	U	NA
1,2,3-Trichlorobenzene	UG/KG	5	U	NA	NA	NA	5	UJ	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	5	U	5	U	NA	1 6	B	19	U	NA
1,2-Dibromo-3-chloropropane	UG/KG	5	U	5	U	NA	5	UJ	19	U	NA
1,2-Dibromoethane	UG/KG	5	U	5	U	NA	5	U	19	U	NA
1,2-Dichlorobenzene	UG/KG	5	U	5	U	NA	0 85	B	19	U	NA
1,2-Dichloroethane	UG/KG	5	U	5	U	NA	5	U	19	U	NA
1,2-Dichloropropane	UG/KG	5	U	5	U	NA	5	U	19	U	NA
1,3-Dichlorobenzene	UG/KG	5	U	5	U	NA	5	UJ	19	U	NA
1,4-Dichlorobenzene	UG/KG	5	U	5	U	NA	1 1	B	19	U	NA
1,4-Dioxane	UG/KG		R	5	UJ	NA		R	19	UJ	NA
2-Butanone	UG/KG	4 5	B	5	UJ	NA	10	U	19	UJ	NA
2-Hexanone	UG/KG	5 9	B	5	UJ	NA	11	B	19	UJ	NA
4-Methyl-2-pentanone	UG/KG	10	U	NA	NA	NA	10	U	NA	NA	NA
Acetone	UG/KG	10	B	20	U	NA	8 4	B	76	U	NA
Benzene	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Bromochloromethane	UG/KG	5	U	NA	NA	NA	5	U	NA	NA	NA
Bromodichloromethane	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Bromoform	UG/KG	5	U	5	U	NA	5	UJ	19	U	NA
Bromomethane	UG/KG	5	U	5	UJ	NA	5	U	19	UJ	NA
CarbonDisulfide	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Carbontetrachloride	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Chlorobenzene	UG/KG	5	U	5	U	NA	5	UL	19	U	NA
Chloroethane	UG/KG	5	U	5	U	NA	5	U	19	U	NA

Notes

L. Analyte Present. Reported value may be biased low.

J Analyte Present. Reported value may not be accurate or precise

B The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U Non-detect

NA = Not applicable

Table 3b VOCs Sample Comparison
Warehouse
Price Battery
Hamburg, Pennsylvania

		WH2-33					WH7-05				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
Chloroform	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Chloromethane	UG/KG	5	U	5	UJ	NA	5	U	19	UJ	NA
cis-1,2-Dichloroethene	UG/KG	5	U	5	U	NA	5	U	19	U	NA
cis-1,3-Dichloropropene	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Cyclohexane	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Dibromochloromethane	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Dichlorodifluoromethane	UG/KG	5	U	5	UJ	NA	5	U	19	U	NA
Ethylbenzene	UG/KG	0 63	B	5	U	NA	0 91	B	19	U	NA
Isopropylbenzene	UG/KG	5	U	5	U	NA	5	U	19	U	NA
m,p-Xylene	UG/KG	0 72	B	NA	NA	NA	1 2	B	NA	NA	NA
Methylacetate	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Methyltert-butylether	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Methylcyclohexane	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Methylenechloride	UG/KG	5	U	5	U	NA	0 79	B	19	U	NA
Styrene	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Tetrachloroethene	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Toluene	UG/KG	0 55	B	5	U	NA	5	U	19	U	NA
trans-1,2-Dichloroethene	UG/KG	5	U	5	U	NA	5	U	19	U	NA
trans-1,3-Dichloropropene	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Trichloroethene	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Trichlorofluoromethane	UG/KG	5	U	5	UJ	NA	5	U	19	U	NA
Vinylchloride	UG/KG	5	U	5	U	NA	5	U	19	U	NA
o-Xylene	UG/KG	0 75	B	NA	NA	NA	1 2	B	NA	NA	NA

Notes.
L: Analyte Present. Reported value may be biased low.
J- Analyte Present. Reported value may not be accurate or precise.
B. The analyte concerned was also detected in the laboratory or field blank associated with the sample
U Non-detect
NA = Not applicable

Table 3c SVOCs Sample Comparison
Warehouse
Price Battery
Hamburg, Pennsylvania

		WH13-18		WH2-33					WH7-09				
Analyte	Units	CDM only	Qualifier	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
1,1'-Biphenyl	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
1,2,4,5-Tetrachlorobenzene	UG/KG	170	U	170	U	NA	NA	NA	170	U	NA	NA	NA
2,2'-Oxybis(1-chloropropane)	UG/KG	170	U	170	U	380	U	NA	170	U	69	U	NA
2,3,4,6-Tetrachlorophenol	UG/KG	170	U	170	U	NA	NA	NA	170	U	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
2,4,6-Trichlorophenol	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
2,4-Dichlorophenol	UG/KG	170	U	170	U	380	U	NA	170	U	69	U	NA
2,4-Dimethylphenol	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
2,4-Dinitrophenol	UG/KG	330	U	330	U	9500	U	NA	330	U	1800	U	NA
2,4-Dinitrotoluene	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
2,6-Dinitrotoluene	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
2-Chloronaphthalene	UG/KG	170	U	170	U	380	U	NA	170	U	69	U	NA
2-Chlorophenol	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
2-Methylnaphthalene	UG/KG	170	U	170	U	380	U	NA	170	U	69	U	NA
2-Methylphenol	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
2-Nitroaniline	UG/KG	330	U	330	U	9500	U	NA	330	U	1800	U	NA
2-Nitrophenol	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
3,3'-Dichlorobenzidine	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
3-Nitroaniline	UG/KG	330	U	330	U	9500	U	NA	330	U	1800	U	NA
4,6-Dinitro-2-methylphenol	UG/KG	330	U	330	U	9500	U	NA	330	U	1800	U	NA
4-Bromophenyl-phenylether	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
4-Chloro-3-methylphenol	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
4-Chloroaniline	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
4-Chlorophenyl-phenylether	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
4-Methylphenol	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
4-Nitroaniline	UG/KG	330	U	330	U	9500	U	NA	330	U	1800	U	NA
4-Nitrophenol	UG/KG	330	U	330	U	9500	U	NA	330	U	1800	U	NA
Acenaphthene	UG/KG	170	U	170	U	380	U	NA	170	U	26	J	NA
Acenaphthylene	UG/KG	170	U	170	U	380	U	NA	170	U	39	J	NA
Acetophenone	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
Anthracene	UG/KG	41	J	170	U	110	J	NA	170	U	100		NA
Atrazine	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA

Notes

L. Analyte Present. Reported value may be biased low.

J. Analyte Present Reported value may not be accurate or precise.

B The analyte concerned was also detected in the laboratory or field blank associated with the sample

U Non-detect

NA = Not applicable

Table 3c SVOCs Sample Comparison
Warehouse
Price Battery
Hamburg, Pennsylvania

		WH15-18		WH2-33					WH7-09				
Analyte	Units	CDM only	Qualifier	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
Benzaldehyde	UG/KG	170	U	170	U	1900	U	NA	170	U	230	J	NA
Benzo(a)anthracene	UG/KG	270		320	J	390		19 72%	53	J	260		132.27%
Benzo(a)pyrene	UG/KG	230		950	J	1300		31.1%	51	J	320		145.0%
Benzo(b)fluoranthene	UG/KG	360		800	J	490		48 1%	60	J	230		117.2%
Benzo(G,h,i)perylene	UG/KG	70	J	980		2100		72.7%	170	U	240		NA
Benzo(k)fluoranthene	UG/KG	120	J	250	J	200	J	22.2%	29	J	60	J	69 7%
Bis(2-Chloroethoxy)methane	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
Bis(2-Chloroethyl)ether	UG/KG	170	U	170	U	380	U	NA	170	U	69	U	NA
Bis(2-ethylhexyl)phthalate	UG/KG	23	B	190	B	170	J	NA	31	B	340	U	NA
Butylbenzylphthalate	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
Caprolact	UG/KG	170	U	170	U	9500	U	NA	170	U	1800	U	NA
Carbazole	UG/KG	24	J	170	U	380	U	NA	170	U	15	J	NA
Chrysene	UG/KG	280		530	J	520		1 9%	53	J	240		127.6%
Dibenzo(a,h)anthracene	UG/KG	170	U	170	U	380	U	NA	170	U	210		NA
Dibenzofuran	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
Diethylphthalate	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
Dimethylphthalate	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
Di-n-butylphthalate	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
Di-n-octylphthalate	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
Fluoranthene	UG/KG	550		250	J	510		68 4%	120	J	700		141 5%
Fluorene	UG/KG	170	U	170	U	380	U	NA	170	U	69	U	NA
Hexachlorobenzene	UG/KG	170	U	170	U	380	U	NA	170	U	69	U	NA
Hexachlorobutadiene	UG/KG	170	U	170	U	380	U	NA	170	U	69	U	NA
Hexachlorocyclopentadiene	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
Hexachloroethane	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
Indeno(1,2,3-cd)pyrene	UG/KG	140	J	720	J	1600		75 9%	170	U	280		NA
Isophorone	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
Naphthalene	UG/KG	170	U	170	U	93	J	NA	170	U	19	J	NA
Nitrobenzene	UG/KG	170	U	170	U	380	U	NA	170	U	69	U	NA
N-Nitroso-di-n-propyline	UG/KG	170	U	170	U	380	U	NA	170	U	69	U	NA
N-Nitrosodiphenyline	UG/KG	170	U	170	U	380	U	NA	170	U	69	U	NA
Pentachlorophenol	UG/KG	330	U	330	U	1900	U	NA	330	U	340	U	NA
Phenanthrene	UG/KG	210	J	140	J	460		106 7%	40	J	480		169 2%
Phenol	UG/KG	170	U	170	U	380	U	NA	170	U	69	U	NA
Pyrene	UG/KG	430		330	J	470		35.0%	120	J	750		144 8%

Notes·

L. Analyte Present. Reported value may be biased low

J: Analyte Present. Reported value may not be accurate or precise.

B. The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U · Non-detect

NA = Not applicable

CDM

Table 4c VOCs Sample Comparison
Broom Works
Price Battery OU2
Hamburg, Pennsylvania

		BW8-9				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD
1,1,1-Trichloroethane	UG/KG	5	UJ	6.3	U	NA
1,1,2,2-Tetrachloroethane	UG/KG	5	UJ	6.3	U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/KG	5	UL	6.3	U	NA
1,1,2-Trichloroethane	UG/KG	5	UJ	6.3	U	NA
1,1-Dichloroethane	UG/KG	5	UL	6.3	U	NA
1,1-Dichloroethene	UG/KG	5	UL	6.3	U	NA
1,2,3-Trichlorobenzene	UG/KG	5	UJ	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	5	UJ	6.3	U	NA
1,2-Dibromo-3-chloropropane	UG/KG	5	UJ	6.3	U	NA
1,2-Dibromoethane	UG/KG	5	UJ	6.3	U	NA
1,2-Dichlorobenzene	UG/KG	5	UJ	6.3	U	NA
1,2-Dichloroethane	UG/KG	5	UL	6.3	U	NA
1,2-Dichloropropane	UG/KG	5	UJ	6.3	U	NA
1,3-Dichlorobenzene	UG/KG	5	UJ	6.3	U	NA
1,4-Dichlorobenzene	UG/KG	5	UJ	6.3	U	NA
1,4-Dioxane	UG/KG	100	UL	NA	NA	NA
2-Butanone	UG/KG	10	UL	6.3	U	NA
2-Hexanone	UG/KG	10	UJ	6.3	U	NA
4-Methyl-2-pentanone	UG/KG	10	UJ	6.3	U	NA
Acetone	UG/KG	21	B	25	U	NA
Benzene	UG/KG	5	UJ	6.3	U	NA
Bromochloromethane	UG/KG	5	UL	NA	NA	NA
Bromodichloromethane	UG/KG	5	UJ	6.3	U	NA
Bromoform	UG/KG	5	UJ	6.3	U	NA
Bromomethane	UG/KG	5	UL	6.3	U	NA
CarbonDisulfide	UG/KG	5	UL	6.3	U	NA
Carbontetrachloride	UG/KG	5	UJ	6.3	U	NA
Chlorobenzene	UG/KG	5	UJ	6.3	U	NA
Chloroethane	UG/KG	5	UL	6.3	U	NA
Chloroform	UG/KG	5	UL	6.3	U	NA

Notes:

L. Analyte Present. Reported value may be biased low.

J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 4c VOCs Sample Comparison
Broom Works
Price Battery OU2
Hamburg, Pennsylvania

		BW8-9				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD
Chloromethane	UG/KG	5	UL	6.3	U	NA
cis-1,2-Dichloroethene	UG/KG	5	UL	6.3	U	NA
cis-1,3-Dichloropropene	UG/KG	5	UJ	6.3	U	NA
Cyclohexane	UG/KG	1.5	J	6.3	U	NA
Dibromochloromethane	UG/KG	5	UJ	6.3	U	NA
Dichlorodifluoromethane	UG/KG	5	UL	6.3	U	NA
Ethylbenzene	UG/KG	5	UJ	6.3	U	NA
Isopropylbenzene	UG/KG	5	UJ	6.3	U	NA
m,p-Xylene	UG/KG	5	UJ	NA	NA	NA
Methylacetate	UG/KG	5	UL	6.3	U	NA
Methylcyclohexane	UG/KG	5	UJ	6.3	U	NA
Methylenechloride	UG/KG	0.81	B	6.3	U	NA
Methyltert-butylether	UG/KG	5	UL	NA	NA	NA
o-Xylene	UG/KG	5	UJ	NA	NA	NA
Styrene	UG/KG	5	UJ	6.3	U	NA
Tetrachloroethene	UG/KG	23	B	6.3	U	NA
Toluene	UG/KG	0.55	J	6.3	U	NA
trans-1,2-Dichloroethene	UG/KG	5	UL	6.3	U	NA
trans-1,3-Dichloropropene	UG/KG	5	UJ	6.3	U	NA
Trichloroethene	UG/KG	5	UJ	6.3	U	NA
Trichlorofluoromethane	UG/KG	5	UL	6.3	U	NA
Vinylchloride	UG/KG	5	UL	6.3	U	NA
Xylenes (total)	UG/KG	NA	NA	19	U	NA

Notes:

L: Analyte Present. Reported value may be biased low.

J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 4d SVOCs Sample Comparison
Broom Works
Price Battery OU2
Hamburg, Pennsylvania

		BW8-9				
Analyte	Units	CDM		AGI		RPD
1,1'-Biphenyl	UG/KG	170	U	31	J	NA
1,2,4,5-Tetrachlorobenzene	UG/KG	170	U	NA	NA	NA
2,2'-Oxybis(1-chloropropane)	UG/KG	170	U	79	U	NA
2,3,4,6-Tetrachlorophenol	UG/KG	170	U	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	170	U	390	U	NA
2,4,6-Trichlorophenol	UG/KG	170	U	390	U	NA
2,4-Dichlorophenol	UG/KG	170	U	79	U	NA
2,4-Dimethylphenol	UG/KG	170	U	390	U	NA
2,4-Dinitrophenol	UG/KG	330	U	2000	U	NA
2,4-Dinitrotoluene	UG/KG	170	U	390	U	NA
2,6-Dinitrotoluene	UG/KG	170	U	390	U	NA
2-Chloronaphthalene	UG/KG	170	U	79	U	NA
2-Chlorophenol	UG/KG	170	U	390	U	NA
2-Methylnaphthalene	UG/KG	110	J	120		8.7%
2-Methylphenol	UG/KG	170	U	390	U	NA
2-Nitroaniline	UG/KG	330	U	2000	U	NA
2-Nitrophenol	UG/KG	170	U	390	U	NA
3,3'-Dichlorobenzidine	UG/KG	170	U	390	U	NA
3-Nitroaniline	UG/KG	330	U	2000	U	NA
4,6-Dinitro-2-methylphenol	UG/KG	330	U	2000	U	NA
4-Bromophenyl-phenylether	UG/KG	170	U	390	U	NA
4-Chloro-3-methylphenol	UG/KG	170	U	390	U	NA
4-Chloroaniline	UG/KG	170	U	390	U	NA
4-Chlorophenyl-phenylether	UG/KG	170	U	390	U	NA
4-Methylphenol	UG/KG	170	U	390	U	NA
4-Nitroaniline	UG/KG	330	U	2000	U	NA
4-Nitrophenol	UG/KG	330	U	2000	U	NA
Acenaphthene	UG/KG	170	U	41	J	NA
Acenaphthylene	UG/KG	100	J	190		62.1%
Acetophenone	UG/KG	170	U	390	U	NA
Anthracene	UG/KG	180	J	220		20.0%
Atrazine	UG/KG	170	U	390	U	NA

Notes:

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J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 4d SVOCs Sample Comparison
Broom Works
Price Battery OU2
Hamburg, Pennsylvania

		BW8-9				
Analyte	Units	CDM		AGI		RPD
Benzaldehyde	UG/KG	170	U	390	U	NA
Benzo(a)anthracene	UG/KG	910		690		27.5%
Benzo(a)pyrene	UG/KG	920		640		30.4%
Benzo(b)fluoranthene	UG/KG	1300		770		40.8%
Benzo(G,h,i)perylene	UG/KG	530		480		9.4%
Benzo(k)fluoranthene	UG/KG	470		370		21.3%
Bis(2-Chloroethoxy)methane	UG/KG	170	U	390	U	NA
Bis(2-Chloroethyl)ether	UG/KG	170	U	79	U	NA
Bis(2-ethylhexyl)phthalate	UG/KG	170	U	260	J	NA
Butylbenzylphthalate	UG/KG	170	U	390	U	NA
Caprolact	UG/KG	170	U	2000	U	NA
Carbazole	UG/KG	130	J	130		0.0%
Chrysene	UG/KG	1000		880		12.0%
Dibenzo(a,h)anthracene	UG/KG	170	U	260		NA
Dibenzofuran	UG/KG	53	J	66	J	24.5%
Diethylphthalate	UG/KG	170	U	390	U	NA
Dimethylphthalate	UG/KG	170	U	390	U	NA
Di-n-butylphthalate	UG/KG	170	U	390	U	NA
Di-n-octylphthalate	UG/KG	170	U	390	U	NA
Fluoranthene	UG/KG	1700		1300		23 5%
Fluorene	UG/KG	51	J	60	J	17 6%
Hexachlorobenzene	UG/KG	110	J	79	U	NA
Hexachlorobutadiene	UG/KG	170	U	79	U	NA
Hexachlorocyclopentadiene	UG/KG	4000		390	U	NA
Hexachloroethane	UG/KG	170	U	390	U	NA
Indeno(1,2,3-cd)pyrene	UG/KG	620		470		24.2%
Isophorone	UG/KG	170	U	390	U	NA
Naphthalene	UG/KG	90	J	94		4.4%
Nitrobenzene	UG/KG	170	U	79	U	NA
N-Nitroso-di-n-propyline	UG/KG	170	U	79	U	NA
N-Nitrosodiphenyline	UG/KG	170	U	79	U	NA
Pentachlorophenol	UG/KG	330	U	390	U	NA
Phenanthrene	UG/KG	940		790		16.0%
Phenol	UG/KG	170	U	79	U	NA
Pyrene	UG/KG	1600		1100		31 3%

Notes:

L: Analyte Present. Reported value may be biased low.

J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 5a Selected Metals Sample Comparison
Parking Lot
Price Battery
Hamburg, Pennsylvania

		PL3-21				
Metals	Units	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	2.5	J	1.7	J	38.1%
ARSENIC	MG/KG	67.7		80.2		16.9%
LEAD	MG/KG	42.4	J	44.6		5.1%
		PL3-33				
Metals	Units	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	2.6	J	1.7	J	41.9%
ARSENIC	MG/KG	105		93.4		11.7%
LEAD	MG/KG	26.3	J	26.9		2.3%

Notes:

L: Analyte Present. Reported value may be biased low.

J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 5b Total Metals Sample Comparison
Parking Lot
Price Battery
Hamburg, Pennsylvania

		PL3-9				
Metals	Unit	CDM	Qualifier	AGI	Qualifier	RPD
ALUMINUM	MG/KG	8110	J	7560		7.0%
ANTIMONY	MG/KG	2.1	J	1.9	J	10.0%
ARSENIC	MG/KG	9.4	L	73.1		154.4%
BARIUM	MG/KG	101	J	95.5		5.6%
BERYLLIUM	MG/KG	0.66	J	0.47		33.6%
CADMIUM	MG/KG	0.32	J	0.11	J	97.7%
CALCIUM	MG/KG	18900	J	12700	J	39.2%
CHROMIUM	MG/KG	8.1	J	16.7	J	69.4%
COBALT	MG/KG	5.3	J	9.3		54.8%
COPPER	MG/KG	57.8	J	43.7		27.8%
IRON	MG/KG	23100	J	69200		99.9%
LEAD	MG/KG	184	J	108		52.1%
MAGNESIUM	MG/KG	4710	J	2240		71.1%
MANGANESE	MG/KG	260	J	959	J	114.7%
MERCURY	MG/KG	0.2		0.13		42.4%
NICKEL	MG/KG	10.6	J	15.2	J	35.7%
POTASSIUM	MG/KG	1530	J	900		51.9%
SELENIUM	MG/KG	1.7	J	1.1	U	NA
SILVER	MG/KG	1.1	UL	0.38	J	NA
SODIUM	MG/KG	233	J	112	J	70.1%
THALLIUM	MG/KG	NA	NA	2.2	UJ	NA
VANADIUM	MG/KG	17.4	J	36.6		71.1%
ZINC	MG/KG	68.5	J	46.3	J	38.7%

Notes:

L: Analyte Present. Reported value may be biased low.

J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 5c VOCs Sample Comparison
Parking Lot
Price Battery OU2
Hamburg, Pennsylvania

		PL3-9				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD
1,1,1-Trichloroethane	UG/KG	5	UL	5	U	NA
1,1,2,2-Tetrachloroethane	UG/KG	5	UL	5	U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/KG	5	UL	5	U	NA
1,1,2-Trichloroethane	UG/KG	5	UL	5	U	NA
1,1-Dichloroethane	UG/KG	5	UL	5	U	NA
1,1-Dichloroethene	UG/KG	5	UL	5	U	NA
1,2,3-Trichlorobenzene	UG/KG	5	UL	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	5	UL	5	U	NA
1,2-Dibromo-3-chloropropane	UG/KG	5	UL	5	U	NA
1,2-Dibromoethane	UG/KG	5	UL	5	U	NA
1,2-Dichlorobenzene	UG/KG	5	UL	5	U	NA
1,2-Dichloroethane	UG/KG	5	UL	5	U	NA
1,2-Dichloropropane	UG/KG	5	UL	5	U	NA
1,3-Dichlorobenzene	UG/KG	5	UL	5	U	NA
1,4-Dichlorobenzene	UG/KG	5	UL	5	U	NA
1,4-Dioxane	UG/KG	100	UL	NA	NA	NA
2-Butanone	UG/KG	10	UL	5	U	NA
2-Hexanone	UG/KG	10	UL	5	U	NA
4-Methyl-2-pentanone	UG/KG	10	UL	5	U	NA
Acetone	UG/KG	21	B	20	U	NA
Benzene	UG/KG	5	UL	5	U	NA
Bromochloromethane	UG/KG	5	UL	NA	NA	NA
Bromodichloromethane	UG/KG	5	UL	5	U	NA
Bromoform	UG/KG	5	UL	5	U	NA
Bromomethane	UG/KG	5	UL	5	U	NA
CarbonDisulfide	UG/KG	5	UL	5	U	NA
Carbontetrachloride	UG/KG	5	UL	5	U	NA
Chlorobenzene	UG/KG	5	UL	5	U	NA
Chloroethane	UG/KG	5	UL	5	U	NA

Notes:

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J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 5c VOCs Sample Comparison
Parking Lot
Price Battery OU2
Hamburg, Pennsylvania

		PL3-9				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD
Chloroform	UG/KG	5	UL	5	U	NA
Chloromethane	UG/KG	5	UL	5	U	NA
cis-1,2-Dichloroethene	UG/KG	5	UL	5	U	NA
cis-1,3-Dichloropropene	UG/KG	5	UL	5	U	NA
Cyclohexane	UG/KG	5	UL	5	U	NA
Dibromochloromethane	UG/KG	5	UL	5	U	NA
Dichlorodifluoromethane	UG/KG	5	UL	5	U	NA
Ethylbenzene	UG/KG	5	UL	0.79	J	NA
Isopropylbenzene	UG/KG	5	UL	5	U	NA
Methylacetate	UG/KG	5	UL	5	U	NA
Methylcyclohexane	UG/KG	5	UL	5	U	NA
Methylenechloride	UG/KG	5	UL	5	U	NA
Methyltert-butylether	UG/KG	5	UL	5	U	NA
o-Xylene	UG/KG	5	UL	NA	NA	NA
Styrene	UG/KG	5	UL	1.7	J	NA
Tetrachloroethene	UG/KG	9.7	B	5	U	NA
Toluene	UG/KG	5	UL	5	U	NA
trans-1,2-Dichloroethene	UG/KG	5	UL	5	U	NA
trans-1,3-Dichloropropene	UG/KG	5	UL	5	U	NA
Trichloroethene	UG/KG	5	UL	5	U	NA
Trichlorofluoromethane	UG/KG	5	UL	5	U	NA
Vinylchloride	UG/KG	5	UL	5	U	NA
m,p-Xylene	UG/KG	5	UL	15	U	NA

Notes:

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J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 5d SVOCs Sample Comparison
Parking Lot
Price Battery OU2
Hamburg, Pennsylvania

		PL3-9				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD
1,1'-Biphenyl	UG/KG	170	U	41	J	NA
1,2,4,5-Tetrachlorobenzene	UG/KG	170	U	NA	NA	NA
2,2'-Oxybis(1-chloropropane)	UG/KG	170	U	75	U	NA
2,3,4,6-Tetrachlorophenol	UG/KG	170	U	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	170	U	370	U	NA
2,4,6-Trichlorophenol	UG/KG	170	U	370	U	NA
2,4-Dichlorophenol	UG/KG	170	U	75	U	NA
2,4-Dimethylphenol	UG/KG	170	U	370	U	NA
2,4-Dinitrophenol	UG/KG	330	U	1900	U	NA
2,4-Dinitrotoluene	UG/KG	170	U	370	U	NA
2,6-Dinitrotoluene	UG/KG	170	U	370	U	NA
2-Chloronaphthalene	UG/KG	170	U	75	U	NA
2-Chlorophenol	UG/KG	170	U	370	U	NA
2-Methylnaphthalene	UG/KG	170	U	110		NA
2-Methylphenol	UG/KG	170	U	370	U	NA
2-Nitroaniline	UG/KG	330	U	1900	U	NA
2-Nitrophenol	UG/KG	170	U	370	U	NA
3,3'-Dichlorobenzidine	UG/KG	170	U	370	U	NA
3-Nitroaniline	UG/KG	330	U	1900	U	NA
4,6-Dinitro-2-methylphenol	UG/KG	330	U	1900	U	NA
4-Bromophenyl-phenylether	UG/KG	170	U	370	U	NA
4-Chloro-3-methylphenol	UG/KG	170	U	370	U	NA
4-Chloroaniline	UG/KG	170	U	370	U	NA
4-Chlorophenyl-phenylether	UG/KG	170	U	370	U	NA
4-Methylphenol	UG/KG	170	U	370	U	NA
4-Nitroaniline	UG/KG	330	U	1900	U	NA
4-Nitrophenol	UG/KG	330	U	1900	U	NA
Acenaphthene	UG/KG	170	U	360		NA
Acenaphthylene	UG/KG	170	U	130		NA
Acetophenone	UG/KG	170	U	370	U	NA
Anthracene	UG/KG	21	J	1100		192.5%
Atrazine	UG/KG	170	U	370	U	NA

Notes:

L Analyte Present. Reported value may be biased low

J Analyte Present. Reported value may not be accurate or precise

B The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 5d SVOCs Sample Comparison
Parking Lot
Price Battery OU2
Hamburg, Pennsylvania

		PL3-9				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD
Benzaldehyde	UG/KG	170	U	370	U	NA
Benzo(a)anthracene	UG/KG	94	J	2200		183.6%
Benzo(a)pyrene	UG/KG	100	J	1700		177.8%
Benzo(b)fluoranthene	UG/KG	150	J	1800		169.2%
Benzo(G,h,i)perylene	UG/KG	47	J	1300		186.0%
Benzo(k)fluoranthene	UG/KG	48	J	830		178.1%
Bis(2-Chloroethoxy)methane	UG/KG	170	U	370	U	NA
Bis(2-Chloroethyl)ether	UG/KG	170	U	75	U	NA
Bis(2-ethylhexyl)phthalate	UG/KG	170	U	370	U	NA
Butylbenzylphthalate	UG/KG	170	U	370	U	NA
Caprolact	UG/KG	170	U	1900	U	NA
Carbazole	UG/KG	170	U	510		NA
Chrysene	UG/KG	100	J	2200		182.6%
Dibenzo(a,h)anthracene	UG/KG	170	U	420		NA
Dibenzofuran	UG/KG	170	U	280	J	NA
Diethylphthalate	UG/KG	170	U	370	U	NA
Dimethylphthalate	UG/KG	170	U	370	U	NA
Di-n-butylphthalate	UG/KG	170	U	370	U	NA
Di-n-octylphthalate	UG/KG	170	U	370	U	NA
Fluoranthene	UG/KG	190		5700		187.1%
Fluorene	UG/KG	170	U	470		NA
Hexachlorobenzene	UG/KG	170	U	75	U	NA
Hexachlorobutadiene	UG/KG	170	U	75	U	NA
Hexachlorocyclopentadiene	UG/KG	170	U	370	U	NA
Hexachloroethane	UG/KG	170	U	370	U	NA
Indeno(1,2,3-cd)pyrene	UG/KG	66	J	1000		175.2%
Isophorone	UG/KG	170	U	370	U	NA
Naphthalene	UG/KG	170	U	110		NA
Nitrobenzene	UG/KG	170	U	75	U	NA
N-Nitroso-di-n-propyline	UG/KG	170	U	75	U	NA
N-Nitrosodiphenyline	UG/KG	170	U	75	U	NA
Pentachlorophenol	UG/KG	330	U	370	U	NA
Phenanthrene	UG/KG	120	J	5300		191.1%
Phenol	UG/KG	170	U	75	U	NA
Pyrene	UG/KG	170	J	3900		183.3%

Notes:

L· Analyte Present. Reported value may be biased low.

J. Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample

U Non-detect

NA = Not applicable

Table 6a Dissolved Metals Sample Comparison
Main Parcel Groundwater Sample Results
Price Battery OU2
Hamburg, Pennsylvania

		MW3				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD
ALUMINUM	UG/L	180	J	200	U	NA
ANTIMONY	UG/L	60	U	10	U	NA
ARSENIC	UG/L	10	U	10	U	NA
BARIUM	UG/L	33.7	J	200	U	NA
BERYLLIUM	UG/L	5	U	4	U	NA
CADMIUM	UG/L	0.093	B	5	U	NA
CALCIUM	UG/L	25900		25000		3.5%
CHROMIUM	UG/L	10	U	5	U	NA
COBALT	UG/L	1.2	B	1.1	J	NA
COPPER	UG/L	0.86	J	25	U	NA
IRON	UG/L	292		100	U	NA
LEAD	UG/L	10	UL	3	U	NA
MAGNESIUM	UG/L	11100		11000		0.9%
MANGANESE	UG/L	173		169		2.3%
MERCURY	UG/L	0.2	UL	0.2	U	NA
NICKEL	UG/L	1.5	J	1.1	J	30.8%
POTASSIUM	UG/L	2290	J	2050	J	11.1%
SELENIUM	UG/L	35	U	5	U	NA
SILVER	UG/L	10	U	5	U	NA
SODIUM	UG/L	16800		16800		0.0%
THALLIUM	UG/L	25	U	10	U	NA
VANADIUM	UG/L	50	U	50	U	NA
ZINC	UG/L	5.2	J	20	U	NA

Notes:

L: Analyte Present. Reported value may be biased low.

J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 6b VOCs Sample Comparison
Main Parcel Groundwater Sample Results
Price Battery OU2
Hamburg, Pennsylvania

		MW3				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD
1,1,1-Trichloroethane	UG/L	0.5	U	5	U	NA
1,1,2,2-Tetrachloroethane	UG/L	0.5	U	5	U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/L	0.5	U	5	U	NA
1,1,2-Trichloroethane	UG/L	0.5	U	5	U	NA
1,1-Dichloroethane	UG/L	0.59	NA	5	U	NA
1,1-Dichloroethene	UG/L	0.5	U	5	U	NA
1,2,3-Trichlorobenzene	UG/L	0.5	U	NA	NA	NA
1,2,4-Trichlorobenzene	UG/L	0.5	U	5	U	NA
1,2-Dibromo-3-chloropropane	UG/L	0.5	U	5	UJ	NA
1,2-Dibromoethane	UG/L	0.5	U	5	U	NA
1,2-Dichlorobenzene	UG/L	0.5	U	5	U	NA
1,2-Dichloroethane	UG/L	0.5	U	5	U	NA
1,2-Dichloropropane	UG/L	0.5	U	5	U	NA
1,3-Dichlorobenzene	UG/L	0.5	U	5	U	NA
1,4-Dichlorobenzene	UG/L	0.5	U	5	U	NA
2-Butanone	UG/L	2.1	J	5	UJ	NA
2-Hexanone	UG/L	5	U	5	U	NA
4-Methyl-2-pentanone	UG/L	5	U	5	UJ	NA
Acetone	UG/L	1.3	B	20	U	NA
Benzene	UG/L	0.5	U	5	U	NA
Bromochloromethane	UG/L	0.5	U	NA	NA	NA
Bromodichloromethane	UG/L	0.5	U	5	U	NA
Bromoform	UG/L	0.5	U	5	UJ	NA
Bromomethane	UG/L	0.5	U	5	U	NA
CarbonDisulfide	UG/L	0.26	B	5	UJ	NA
Carbontetrachloride	UG/L	0.5	U	5	U	NA
Chlorobenzene	UG/L	0.5	U	5	U	NA
Chloroethane	UG/L	0.5	U	5	U	NA

Notes:

L: Analyte Present. Reported value may be biased low.

J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 6b VOCs Sample Comparison
Main Parcel Groundwater Sample Results
Price Battery OU2
Hamburg, Pennsylvania

		MW3				
Analyte	Units	CDM	Qualifier	AGI	Qualifier	RPD
Chloroform	UG/L	0.096	B	5	U	NA
Chloromethane	UG/L	0.28	B	5	U	NA
cis-1,2-Dichloroethene	UG/L	0.5	U	5	U	NA
cis-1,3-Dichloropropene	UG/L	0.5	U	5	U	NA
Cyclohexane	UG/L	0.5	U	5	U	NA
Dibromochloromethane	UG/L	0.5	U	5	U	NA
Dichlorodifluoromethane	UG/L	0.5	U	5	U	NA
Ethylbenzene	UG/L	0.5	U	5	U	NA
Isopropylbenzene	UG/L	0.5	U	5	U	NA
m,p-Xylene	UG/L	0.5	U	NA	NA	NA
Methylacetate	UG/L	0.5	U	5	U	NA
Methylcyclohexane	UG/L	0.5	U	5	U	NA
Methylenechloride	UG/L	0.5	U	5	U	NA
Methyltert-butylether	UG/L	0.5	U	5	U	NA
o-Xylene	UG/L	0.5	U	NA	NA	NA
Styrene	UG/L	0.5	U	5	U	NA
Tetrachloroethene	UG/L	0.5	U	5	U	NA
Toluene	UG/L	0.5	U	5	U	NA
trans-1,2-Dichloroethene	UG/L	0.5	U	5	U	NA
trans-1,3-Dichloropropene	UG/L	0.5	U	5	U	NA
Trichloroethene	UG/L	0.5	U	5	U	NA
Trichlorofluoromethane	UG/L	0.5	U	5	UJ	NA
Vinylchloride	UG/L	0.5	U	5	U	NA
Xylenes (total)	UG/L	NA	NA	15	U	NA

Notes:

L: Analyte Present. Reported value may be biased low.

J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 6c SVOCs Sample Comparison
Main Parcel Groundwater Sample Results
Price Battery OU2
Hamburg, Pennsylvania

		MW3				
Analyte	Units	CDM	Qulaifier	AGI	Qualifier	RPD
1,1'-Biphenyl	UG/L	5	U	9.9	U	NA
1,2,4,5-Tetrachlorobenzene	UG/L	5	U	NA	NA	NA
2,2'-Oxybis(1-chloropropane)	UG/L	5	U	2	U	NA
2,3,4,6-Tetrachlorophenol	UG/L	5	U	NA	NA	NA
2,4,5-Trichlorophenol	UG/L	5	U	9 9	U	NA
2,4,6-Trichlorophenol	UG/L	5	U	9 9	U	NA
2,4-Dichlorophenol	UG/L	5	U	2	U	NA
2,4-Dimethylphenol	UG/L	5	U	9.9	U	NA
2,4-Dinitrophenol	UG/L	10	U	50	U	NA
2,4-Dinitrotoluene	UG/L	5	U	9 9	U	NA
2,6-Dinitrotoluene	UG/L	5	U	9 9	U	NA
2-Chloronaphthalene	UG/L	5	U	2	U	NA
2-Chlorophenol	UG/L	5	U	9.9	U	NA
2-Methylnaphthalene	UG/L	5	U	2	U	NA
2-Methylphenol	UG/L	5	U	9 9	U	NA
2-Nitroaniline	UG/L	10	U	50	U	NA
2-Nitrophenol	UG/L	5	U	9 9	U	NA
3,3'-Dichlorobenzidine	UG/L	5	U	9.9	U	NA
3-Nitroaniline	UG/L	10	U	50	U	NA
4,6-Dinitro-2-methylphenol	UG/L	10	U	50	U	NA
4-Bromophenyl-phenylether	UG/L	5	U	9 9	U	NA
4-Chloro-3-methylphenol	UG/L	5	U	9.9	U	NA
4-Chloroaniline	UG/L	5	U	9.9	U	NA
4-Chlorophenyl-phenylether	UG/L	5	U	9.9	U	NA
4-Methylphenol	UG/L	5	U	9.9	U	NA
4-Nitroaniline	UG/L	10	U	50	U	NA
4-Nitrophenol	UG/L	10	U	50	U	NA
Acenaphthene	UG/L	5	U	2	U	NA
Acenaphthylene	UG/L	5	U	2	U	NA
Acetophenone	UG/L	5	U	9.9	U	NA
Anthracene	UG/L	5	U	2	U	NA
Atrazine	UG/L	5	U	9.9	U	NA

Notes:

L Analyte Present. Reported value may be biased low.

J: Analyte Present. Reported value may not be accurate or precise

B The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

Table 6c SVOCs Sample Comparison
Main Parcel Groundwater Sample Results
Price Battery OU2
Hamburg, Pennsylvania

		MW3				
Analyte	Units	CDM	Qulaifier	AGI	Qualifier	RPD
Benzaldehyde	UG/L	5	U	9.9	U	NA
Benzo(a)anthracene	UG/L	5	U	2	U	NA
Benzo(a)pyrene	UG/L	5	U	2	U	NA
Benzo(b)fluoranthene	UG/L	5	U	2	U	NA
Benzo(g,h,i)perylene	UG/L	5	U	2	U	NA
Benzo(k)fluoranthene	UG/L	5	U	2	U	NA
Bis(2-Chloroethoxy)methane	UG/L	5	U	9 9	U	NA
Bis(2-Chloroethyl)ether	UG/L	5	U	2	U	NA
Bis(2-ethylhexyl)phthalate	UG/L	5	U	9.9	U	NA
Butylbenzylphthalate	UG/L	5	U	9 9	U	NA
Caprolactam	UG/L	5	U	50	U	NA
Carbazole	UG/L	5	U	2	U	NA
Chrysene	UG/L	5	U	2	U	NA
Dibenzo(a,h)anthracene	UG/L	5	U	2	U	NA
Dibenzofuran	UG/L	5	U	9.9	U	NA
Diethylphthalate	UG/L	5	U	9.9	U	NA
Dimethylphthalate	UG/L	5	U	9 9	U	NA
Di-n-butylphthalate	UG/L	5	U	9.9	U	NA
Di-n-octylphthalate	UG/L	5	U	9.9	U	NA
Fluoranthene	UG/L	5	U	2	U	NA
Fluorene	UG/L	5	U	2	U	NA
Hexachlorobenzene	UG/L	5	U	2	U	NA
Hexachlorobutadiene	UG/L	5	U	2	U	NA
Hexachlorocyclopentadiene	UG/L	5	U	9.9	U	NA
Hexachloroethane	UG/L	5	U	9.9	U	NA
Indeno(1,2,3-cd)pyrene	UG/L	5	U	2	U	NA
Isophorone	UG/L	5	U	9.9	U	NA
Naphthalene	UG/L	5	U	2	U	NA
Nitrobenzene	UG/L	5	U	2	U	NA
N-Nitroso-di-n-propylamine	UG/L	5	U	2	U	NA
N-Nitrosodiphenylamine	UG/L	5	U	2	U	NA
Pentachlorophenol	UG/L	10	U	9 9	U	NA
Phenanthrene	UG/L	5	U	2	U	NA
Phenol	UG/L	5	U	2	U	NA
Pyrene	UG/L	5	U	2	U	NA

Notes:

L: Analyte Present. Reported value may be biased low.

J: Analyte Present. Reported value may not be accurate or precise.

B· The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U . Non-detect

NA = Not applicable

Table 6d PCBs Sample Comparison
Main Parcel Groundwater Sample Results
Price Battery OU2
Hamburg, Pennsylvania

		MW3				
Analyte	Result	CDM	Qualifier	AGI	Qualifier	RPD
Aroclor-1016	UG/L	1	U	0.39	U	NA
Aroclor-1221	UG/L	1	U	0.39	U	NA
Aroclor-1232	UG/L	1	U	0.39	U	NA
Aroclor-1242	UG/L	1	U	0.39	U	NA
Aroclor-1248	UG/L	1	U	0.39	U	NA
Aroclor-1254	UG/L	1	U	0.39	U	NA
Aroclor-1260	UG/L	1	U	0.39	U	NA
Aroclor-1262	UG/L	1	U	NA	NA	NA
Aroclor-1268	UG/L	1	U	NA	NA	NA

Notes:

L: Analyte Present. Reported value may be biased low.

J: Analyte Present. Reported value may not be accurate or precise.

B: The analyte concerned was also detected in the laboratory or field blank associated with the sample.

U : Non-detect

NA = Not applicable

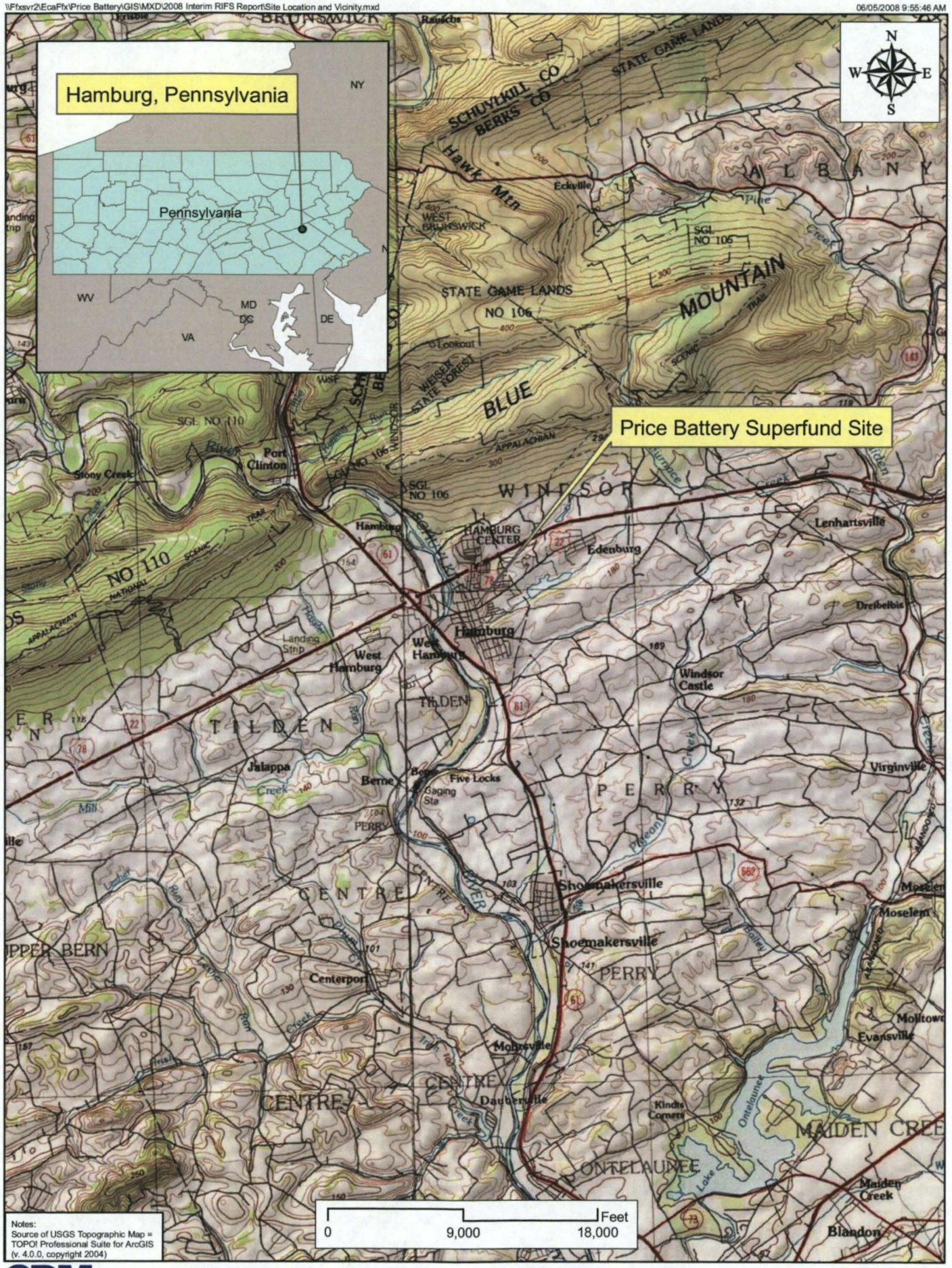
Table 7 Selected Metals Sample Comparison
Kaercher Creek Sediment Samples
Price Battery OU2
Hamburg, Pennsylvania

	KC-SED2					
Metals	Units	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0.7	J	63	J	195.6%
ARSENIC	MG/KG	1.7		10.6		144.7%
LEAD	MG/KG	200		1150		140.7%

Notes:

J: Analyte Present. Reported value may not be accurate or precise.

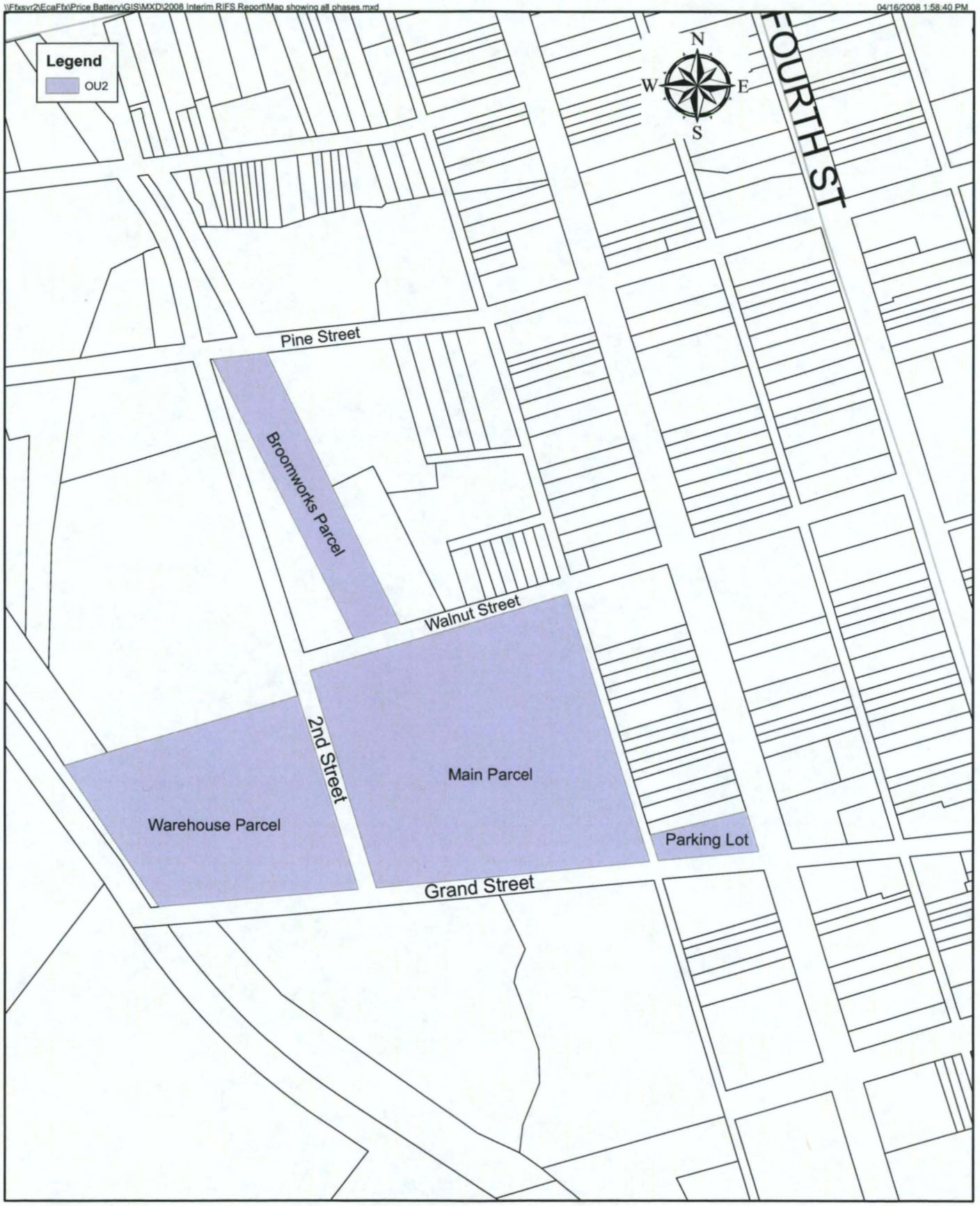
Figures



CDM

Price Battery Superfund Site
Berks County, Hamburg, PA

Figure 2-1
Site Location Map



CDM

Price Battery Superfund Site
Berks County, Hamburg, PA

Figure 2-2
Site Map

AR302698

Appendix A

Exide-Owned Properties Sample Location Maps

Figure 1 Intentionally Excluded
Figure 2 Site Layout
Figure 3 Main Parcel Sample Locations
Figure 4 Warehouse Parcel Sample Locations
Figure 5 Broom Works Parcel Sample Locations
Figure 6 Parking Lot Sample Locations
Figure 7 Stream Sediment Sample Locations
Figure 8 Groundwater Potentiometric Map

LEGEND

GABION MATTRESS

PROPERTY LINE OF EXIDE OWNED PROPERTIES

NOTES:

1. BASEMAP INFORMATION OBTAINED FROM THE "PLOT PLAN" DRAWING No.22-SLI-94-D, DATED JUNE 5, 1979 PROVIDED BY EXIDE TECHNOLOGIES.
2. BUILDING NAMES OBTAINED FROM "STORM WATER OUTFALL" DRAWING NO. 22-SLI-18FD DATED JULY 19, 1999 PROVIDED BY EXIDE TECHNOLOGIES.

130 0 130 260

SCALE IN FEET

J:\EXIDE\DRAWINGS\2002-978-00\2002-978-00-12.dwg

SITE LAYOUT
(PRIOR TO MAIN PARCEL DEMOLITION)

PROJECT MANAGER:	P.G.S.	SCALE:	1" = 130'
CHECKED BY:	P.G.S.	PROJECT NUMBER:	2002-978
DRAWN BY:	C.E.P	DATE:	12/5/07

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FORMER PRICE BATTERY SITE

Hamburg, Pennsylvania

Figure 2

LEGEND

- PROPERTY LINE OF EXIDE OWNED PROPERTIES
- ● COMPLETED SOIL SAMPLING LOCATIONS
- ■ SUPPLEMENTAL SOIL SAMPLING LOCATIONS FOR FUEL OIL INVESTIGATION
- □ PROPOSED SOIL SAMPLING LOCATIONS NOT COLLECTED FOR FUEL OIL INVESTIGATION BASED ON FIELD OBSERVATIONS
- ○ PROPOSED SOIL SAMPLING LOCATIONS REMOVED DUE TO PROXIMITY OF HISTORIC SAMPLE
- ◉ APPROXIMATE SURFACE SOIL SAMPLING LOCATIONS (TETRA TECH 2002)
- ■ APPROXIMATE SUB-SURFACE SOIL SAMPLING LOCATIONS (TETRA TECH 2002)
- ▲ APPROXIMATE LOCATION OF 1995 ADVANCED GEOSERVICES GEOPROBE LOCATIONS

NOTES:

1. BASEMAP INFORMATION OBTAINED FROM THE "PLOT PLAN" DRAWING No.22-SLI-94-D, DATED JUNE 5, 1979 PROVIDED BY EXIDE TECHNOLOGIES.
2. BUILDING NAMES OBTAINED FROM "STORM WATER OUTFALL" DRAWING NO. 22-SLI-18FD DATED JULY 19, 1999 PROVIDED BY EXIDE TECHNOLOGIES.
3. SAMPLE LOCATIONS MP-39 AND MP-35 COULD NOT BE SAMPLED DUE TO REFUSAL AT APPROXIMATELY 3.5 FEET AND 2 FEET BELOW GROUND SURFACE RESPECTIVELY. GEOPROBE EQUIPMENT COULD NOT PENETRATE THE OBSTRUCTION.

J:\CAD\DRAWINGS\2002-978-00\2002-978-00-18.dwg

MAIN PARCEL SAMPLE LOCATIONS

PROJECT MANAGER:	P.G.S.	SCALE:	1" = 50'
CHECKED BY:	P.G.S.	PROJECT NUMBER:	2002-978
DRAWN BY:	C.E.P.	DATE:	12/5/07

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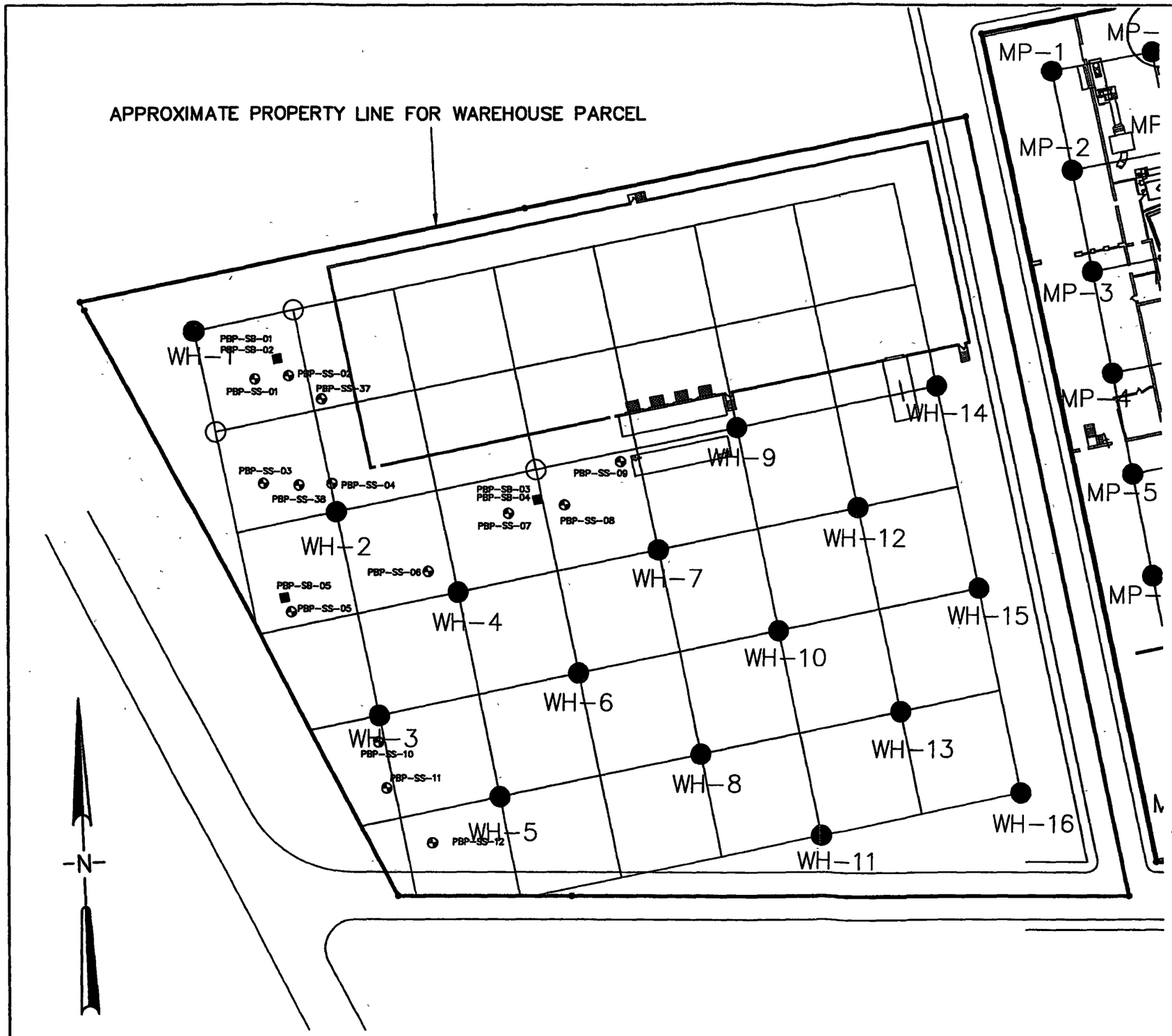
FORMER PRICE BATTERY SITE
Hamburg, Pennsylvania

Figure 3

AR302701



50 0 50 100

SCALE IN FEET

LEGEND

- PROPERTY LINE OF EXIDE OWNED PROPERTIES
- COMPLETED SOIL SAMPLING LOCATIONS
- PROPOSED SOIL SAMPLING LOCATIONS REMOVED DUE TO PROXIMITY OF HISTORIC SAMPLE
- APPROXIMATE SURFACE SOIL SAMPLING LOCATIONS (TETRA TECH 2002)
- APPROXIMATE SUB-SURFACE SOIL SAMPLING LOCATIONS (TETRA TECH 2002)

NOTES:

1. BASEMAP INFORMATION OBTAINED FROM THE "PLOT PLAN" DRAWING No.22-SLI-94-D, DATED JUNE 5, 1979 PROVIDED BY EXIDE TECHNOLOGIES.
2. BUILDING NAMES OBTAINED FROM "STORM WATER OUTFALL" DRAWING NO. 22-SLI-18FD DATED JULY 19, 1999 PROVIDED BY EXIDE TECHNOLOGIES.

WAREHOUSE PARCEL SAMPLE LOCATIONS

PROJECT MANAGER: P.G.S. | SCALE: 1"=50'
CHECKED BY: P.A.S. | PROJECT NUMBER: 2002-978
DRAWN BY: C.L.P. | DATE: 12/5/07

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FORMER PRICE BATTERY SITE
Hamburg, Pennsylvania

Figure 4

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50 0 50 100

SCALE IN FEET

N

BW-1 BW-2 BW-3 BW-4 BW-5 BW-6 BW-7 BW-8

HB-01 HB-02 HB-03 HB-04 HB-05 HB-06 HB-07 HB-08 HB-09 HB-10 HB-11 HB-12 HB-13 HB-14 HB-15 HB-16 HB-17 HB-18 HB-19 HB-20 HB-21 HB-22 HB-23 HB-24 HB-25 HB-26 HB-27 HB-28 HB-29 HB-30 HB-31 HB-32 HB-33 HB-34 HB-35 HB-36 HB-37 HB-38 HB-39 HB-40 HB-41 HB-42 HB-43 HB-44 HB-45 HB-46 HB-47 HB-48

HB-SB-01 HB-SB-02 HB-SB-03 HB-SB-04

97398ESA01 97398ESA02 97398ESA03 97398ESA04 97398ESA05

APPROXIMATE PROPERTY LINE FOR BROOM WORKS PARCEL

LEGEND

- PROPERTY LINE OF EXIDE OWNED PROPERTIES
- COMPLETED SOIL SAMPLING LOCATIONS
- APPROXIMATE SURFACE SOIL SAMPLING LOCATIONS (TETRA TECH 2002)
- APPROXIMATE SUB-SURFACE SOIL SAMPLING LOCATIONS (TETRA TECH 2002)
- APPROXIMATE LOCATION OF 1997 ADVANCED GEOSERVICES SOIL SAMPLING LOCATIONS

NOTES:

1. BASEMAP INFORMATION OBTAINED FROM THE "PLOT PLAN" DRAWING No.22-SLI-94-D, DATED JUNE 5, 1979 PROVIDED BY EXIDE TECHNOLOGIES.
2. BUILDING NAMES OBTAINED FROM "STORM WATER OUTFALL" DRAWING NO. 22-SLI-18FD DATED JULY 19, 1999 PROVIDED BY EXIDE TECHNOLOGIES.

BROOM WORKS PARCEL SAMPLE LOCATIONS

PROJECT MANAGER: P.G.S.	SCALE: 1" = 50'		
CHECKED BY: P.G.S.	PROJECT NUMBER: 2002-978		
DRAWN BY: C.E.P.	DATE: 12/5/07		

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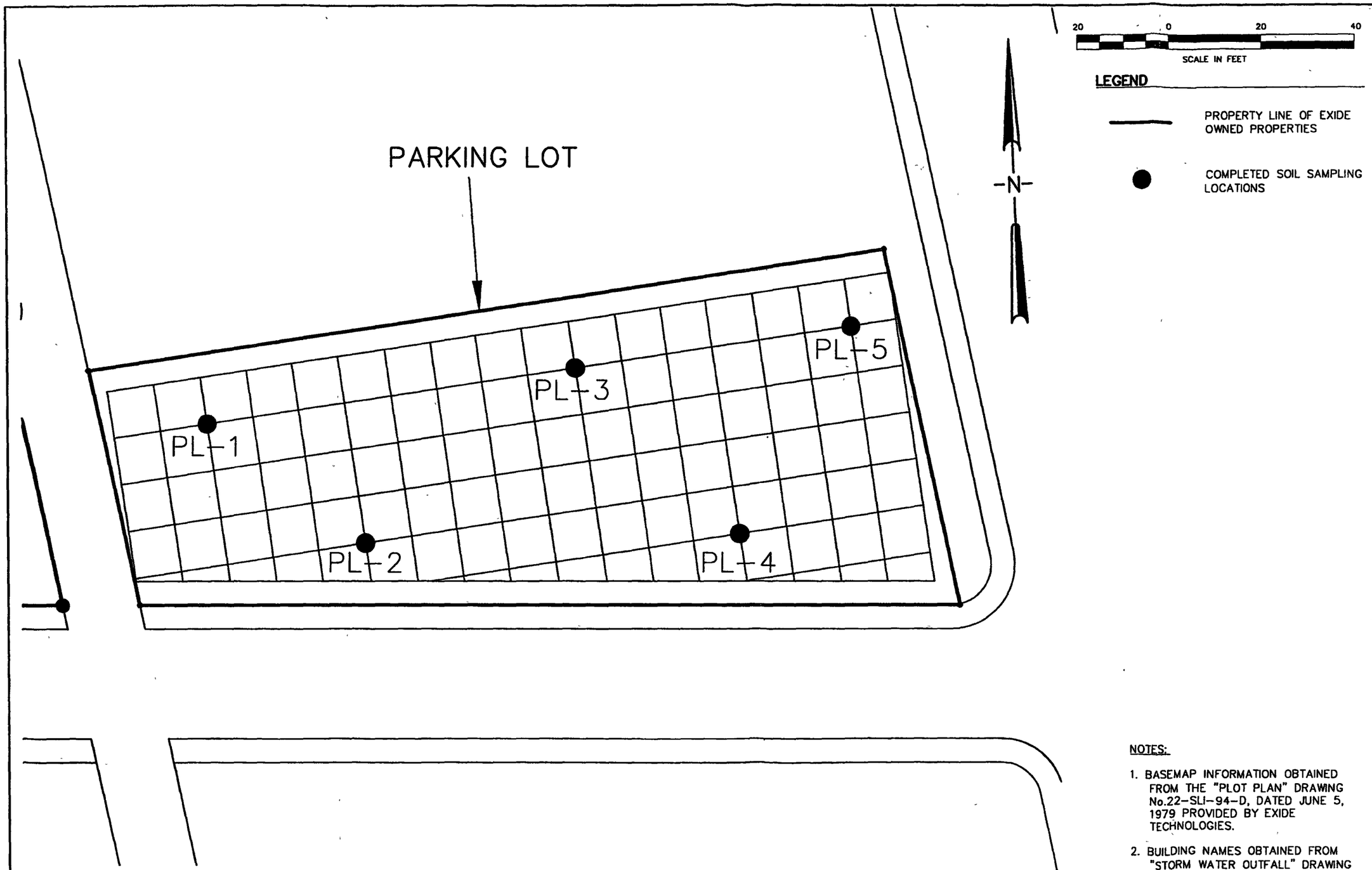
FORMER PRICE BATTERY SITE

Hamburg, Pennsylvania

Figure 5



NOTES:

1. BASEMAP INFORMATION OBTAINED FROM THE "PLOT PLAN" DRAWING No.22-SLI-94-D, DATED JUNE 5, 1979 PROVIDED BY EXIDE TECHNOLOGIES.
2. BUILDING NAMES OBTAINED FROM "STORM WATER OUTFALL" DRAWING NO. 22-SLI-18FD DATED JULY 19, 1999 PROVIDED BY EXIDE TECHNOLOGIES.

PARKING LOT SAMPLE LOCATIONS

PROJECT MANAGER:	P.G.S.	SCALE:	1" = 20'
CHECKED BY:	P.G.S.	PROJECT NUMBER:	2002-978
DRAWN BY:	C.E.P.	DATE:	12/5/07

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FORMER PRICE BATTERY SITE
Hamburg, Pennsylvania

Figure 6

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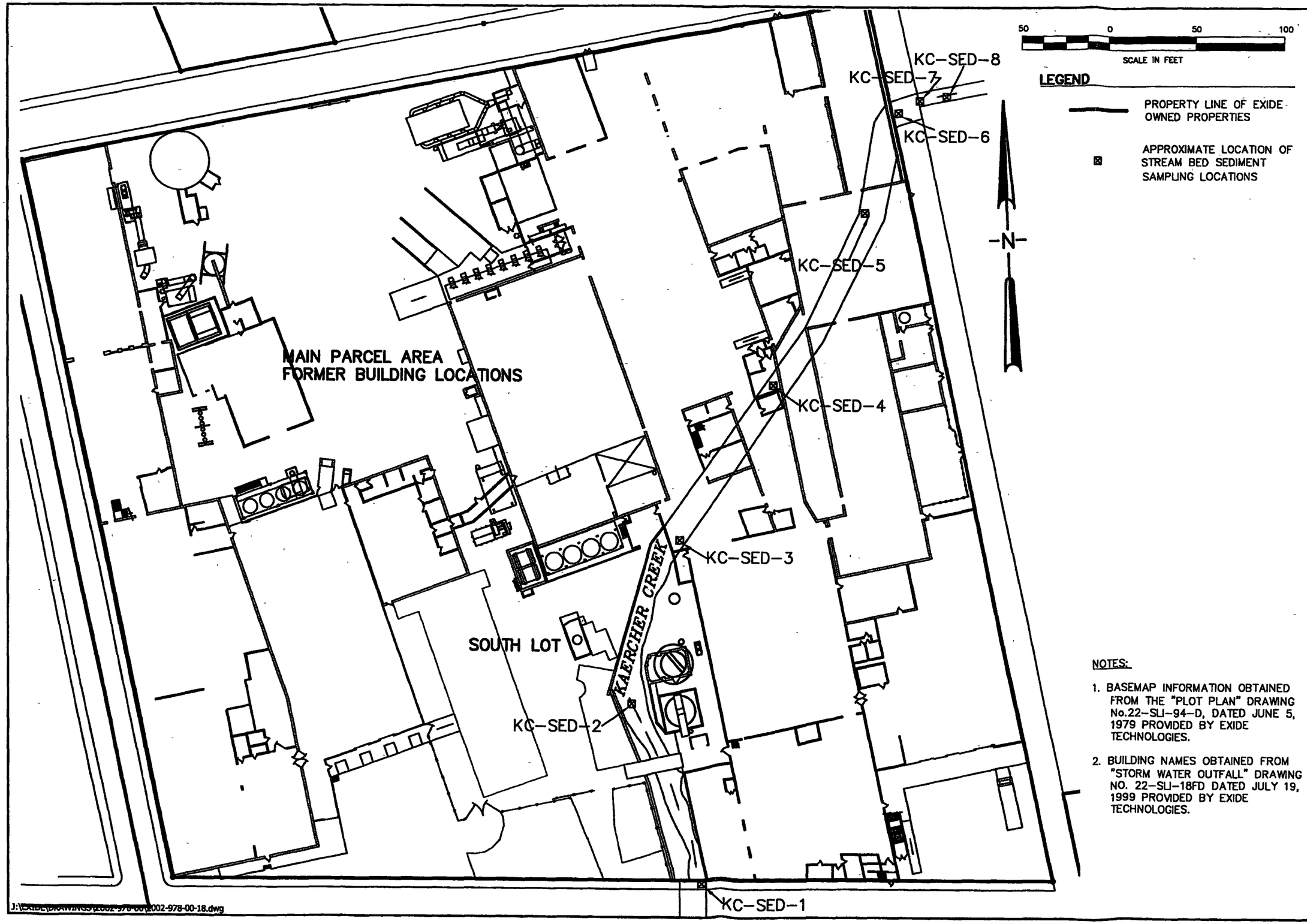

NOTES:

1. BASEMAP INFORMATION OBTAINED FROM THE "PLOT PLAN" DRAWING No.22-SLI-94-D, DATED JUNE 5, 1979 PROVIDED BY EXIDE TECHNOLOGIES.
2. BUILDING NAMES OBTAINED FROM "STORM WATER OUTFALL" DRAWING NO. 22-SLI-18FD DATED JULY 19, 1999 PROVIDED BY EXIDE TECHNOLOGIES.

J:\EXIDE\DRAWINGS\2002-978-00\2002-978-00-18.dwg

STREAM SEDIMENT SAMPLE LOCATIONS

PROJECT MANAGER:	P.G.S.	SCALE:	1" = 50'
CHECKED BY:	P.G.S.	PROJECT NUMBER:	2002-978
DRAWN BY:	C.E.P.	DATE:	12/5/07

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tel 610.840.9100 fax 610.840.9199 www.advancedgeoservices.com

FORMER PRICE BATTERY SITE
Hamburg, Pennsylvania

Figure 7

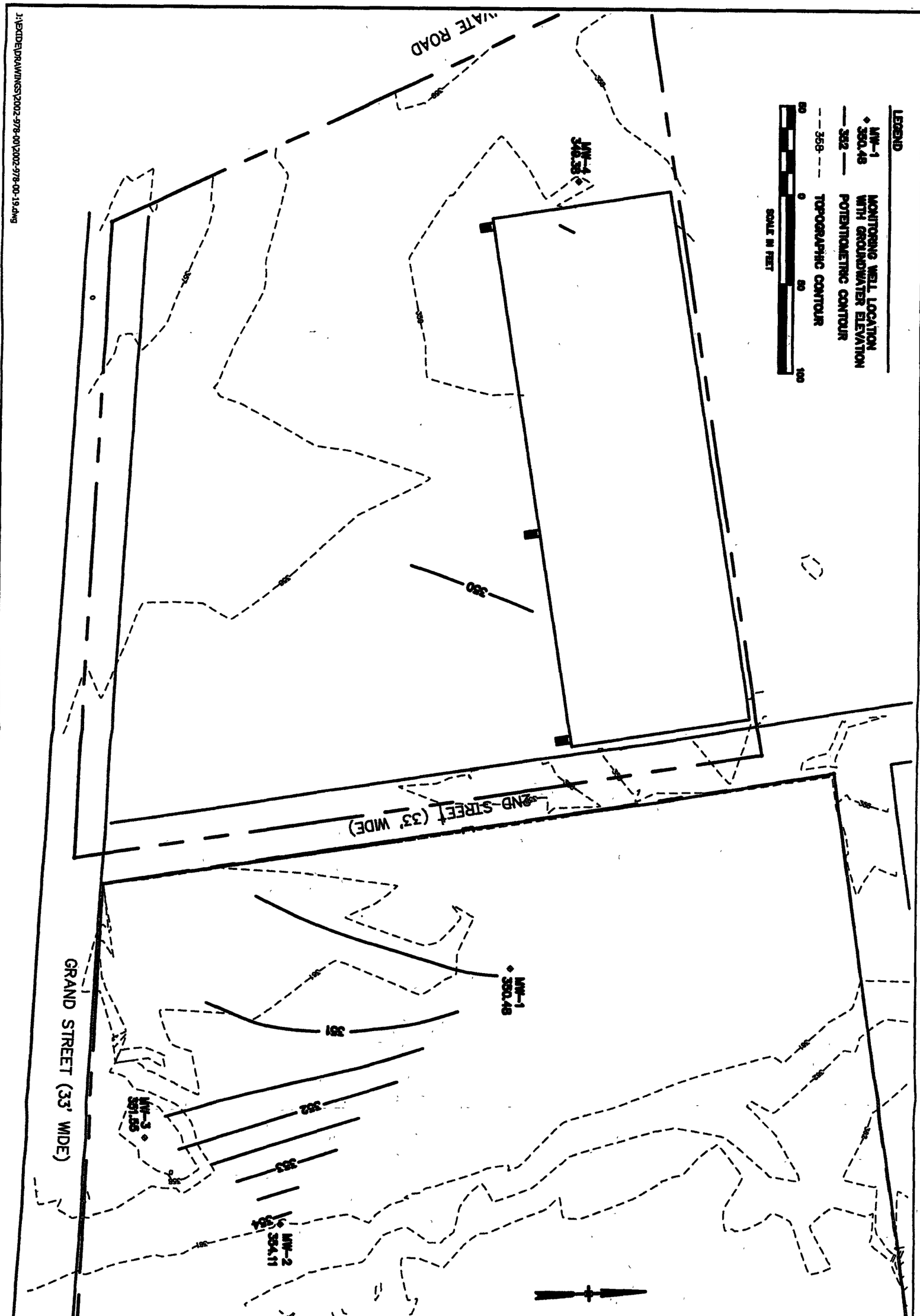

Figure 8

FORMER PRICE BATTERY SITE

Hamburg, Pennsylvania

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GROUNDWATER POTENTIOMETRIC MAP

SEPTEMBER 29, 2008

PROJECT MANAGER:	P.G.S.	SCALE:	1" = 50'
CHECKED BY:	P.G.S.	PROJECT NUMBER:	2002-978
DRAWN BY:	C.E.P.	DATE:	11/4/08

Appendix B

CDM Split Sample Validated Analytical Results

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
ENVIRONMENTAL SCIENCE CENTER
701 MAPES ROAD
FORT MEADE, MARYLAND 20755-5350

DATE : November 12, 2008

SUBJECT: Region III Data QA Review

FROM : Khin-Cho Thaung KCT
Region III ESAT RPO (3ES20)

TO : John Banks
Regional Project Manager (3HS22)

Attached is the organic data validation report for the Price Battery site (Case #:37823 SDG# C8222). completed by the Region 111 Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2743.

Attachments

cc: Lucinda Pype (EPA/CDM)

TO File #: 0014 TDF# 10136

LOCKHEED MARTIN

We never forget who we're working for™

Lockheed Martin Enterprise Solutions & Services
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-530
Telephone 410-305-3037 Facsimile 410-305-3597

DATE: November 4, 2008

SUBJECT: Level M3 Organic Data Validation for Case 37823
SDG: C8222
Site: Price Battery

FROM: Shilpa Udani
Organic Data Reviewer

Mahboobeh Mecanic
Senior Oversight Chemist

TO: Khin-Cho Thaung
ESAT Region 3 Project Officer

OVERVIEW

Case 37823, Sample Delivery Group (SDG) C8222, consisted of one (1) aqueous sample submitted to Shealy Enviromental Services, Inc. (SHEALY) for trace volatile (VOC), semivolatile (SVOC), pesticide and aroclor analyses. Samples were analyzed according to Contract Laboratory Program (CLP) Statement of Work (SOW) SOM01.2 through the Routine Analytical Services (RAS) program.

SUMMARY

Data were validated according to the Region III Modifications to the National Functional Guidelines for Organic Data Review, Level M3. Areas that may impact data usability are listed below.

MAJOR PROBLEM

- Pesticide Laboratory Control Sample (LCS) reported zero percent (0%) recovery for endosulfan sulfate on both analytical columns. The quantitation limit for this compound in pesticide sample C8222 was rejected and qualified "R" on the DSF.

MINOR PROBLEMS

- Relative Response Factors (RRFs) in the trace volatile initial and continuing calibrations were less than 0.05 for acetone. The "L" qualifier for this compound in sample C8222 was superseded by "B" on the DSF.

- Several compounds failed precision criteria [Percent Relative Standard Deviation (%RSD) and/or Percent Difference (%D)] in the trace volatile and semivolatile initial and/or continuing calibrations. The associated positive results for these compounds were qualified "J" on the DSFs unless superseded by "B". Imprecision did not exceed fifty percent (50%) criteria; therefore, quantitation limits were not qualified.

- The Laboratory Control Samples (LCS) reported result outside upper control limit for gamma-chlordane in pesticide analysis. The "K" qualifier for this compound in pesticide sample C8222 was superseded by "B" on the DSF.

- beta-BHC in pesticide sample C8222 had percent difference (%D) greater than twenty-five percent (>25%) between the two analytical columns. The "J" qualifier for beta-BHC in this sample was superseded by "B" on the DSF.

NOTES

- RRFs in the trace volatile initial and continuing calibrations were less than 0.05 for 2-butanone. Method and storage blanks were associated with these calibrations; therefore, no data were qualified based on this outlier.

- The trace volatile method blank (VBLK10) had a recovery of Deuterated Monitoring Compound (DMC) 1,2-dichloropropane-d6 outside the lower Quality Control (QC) limit. No data were qualified based on QC sample outlier.

- Percents breakdown for endrin were outside the QC limit on both columns in pesticide calibration verification. No positive results were reported for endrin or the breakdown compounds. No data were qualified based on these outliers.

- Concentrations of target compounds found in the analysis of method and storage blanks are listed below. Sample C8222 with concentrations of common laboratory contaminants (*) less than ten times (<10X) the blank concentrations or with concentrations of other contaminants less than five times (<5X) blank concentrations have been qualified "B" on the DSFs.

Fraction	Blank	Compound	Concentration	Affected Sample
VOC	Storage (VHBLK01)	Chloromethane	0.31 J ug/L	C8222
		Acetone*	1.6 J ug/L	C8222
		Carbone Disulfide	0.21 J ug/L	C8222
		Chloroform	0.29 J ug/L	C8222

Fraction	Blank	Compound	Concentration	Affected Sample
Pesticide	Method (PBLK84)	beta-BHC	0.086 J ug/L	C8222
		Heptachlor	0.21 J ug/L	C8222
		Gamma-Chlordane	0.070 J ug/L	C8222

- Reported recoveries for aroclors in LCS were within QC limits on both columns.
- Reported recoveries for pesticide and aroclor Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses were within QC limits on both columns.
- Non-spiked compounds, other than blank contaminants, were reported in pesticide sample C8222 and the MS/MSD analyses of this sample. Results and precision estimates are listed below.

		Concentration (μg/L)		
Compound	C8222	C8222MS	C8222MSD	RPD
endrin ketone	ND	0.041 J	0.042 J	2
endrin aldehyde	ND	0.055 J	0.060 J	9
alpha-chlordane	ND	0.0069 J	0.0090 J	26

ND = Non-detect
* = RPD instead of %RSD

- No Tentatively Identified Compound (TIC) other than a semivolatile blank contaminant was reported in sample C8222. The TIC result was crossed off in TIC Form I.
- Compounds detected below Contract Required Quantitation Limits (CRQLs) were qualified "J" on the DSFs unless superseded by "B".

All data for Case 37823, SDG C8222, were reviewed in accordance with Region III Innovative Approaches for Validation of Organic Data (Level 2), June 1995.

ATTACHMENTS

1) Appendix A Glossary of Data Qualifier Terms
2) Appendix B Data Summary Forms
3) Appendix C Chain-of-Custody Records
4) Appendix D Laboratory Case Narrative
4) Appendix E Tentatively Identified Compounds (TICs)

DCN: 37823 – C8222

Appendix A

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

NO CODE = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

Q = No analytical result.

Appendix B

Data Summary Forms

Case #: 37823 SDG : C8222 Number of Soil Samples : 0
Site : PRICE BATTERY Number of Water Samples : 1
Lab. : SHEALY

Sample Number :		C8222									
Sampling Location :		MW3									
Matrix :		Water									
Units :		ug/L									
Date Sampled :		9/30/2008									
Time Sampled :		14:20									
pH :		< 2									
Dilution Factor :		1.0									
Trace Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	0.50										
Chloromethane	0.50	0.28	B								
*Vinyl chloride	0.50										
Bromomethane	0.50										
Chloroethane	0.50										
Trichlorofluoromethane	0.50										
*1,1-Dichloroethene	0.50										
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50										
Acetone	5.0	13	B								
Carbon Disulfide	0.50	0.26	B								
Methyl acetate	0.50										
*Methylene chloride	0.50										
trans-1,2-Dichloroethene	0.50										
Methyl tert-butyl ether	0.50										
1,1-Dichloroethane	0.50	0.59									
cis-1,2-Dichloroethene	0.50										
*2-Butanone	5.0	2.1	J								
Bromochloromethane	0.50										
Chloroform	0.50	0.095	B								
*1,1,1-Trichloroethane	0.50										
Cyclohexane	0.50										
*Carbon tetrachloride	0.50										
*Benzene	0.50										
*1,2-Dichloroethane	0.50										
Trichloroethene	0.50										
Methylcyclohexane	0.50										
*1,2-Dichloropropane	0.50										
Bromodichloromethane	0.50										
cis-1,3-Dichloropropene	0.50										
4-Methyl-2-pentanone	5.0										
*Toluene	0.50										
trans-1,3-Dichloropropene	0.50										
1,1,2-Trichloroethane	0.50										

Case #: 37823 SDG : C8222
Site : PRICE BATTERY
Lab. : SHEALY

Sample Number :	C8222									
Sampling Location :	MW3									
Matrix :	Water									
Units :	ug/L									
Date Sampled :	9/30/2008									
Time Sampled :	14:20									
pH :	< 2									
Dilution Factor :	1.0									
Trace Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
*Tetrachloroethene	0.50									
2-Hexanone	5.0									
Dibromochloromethane	0.50									
1,2-Dibromoethane	0.50									
*Chlorobenzene	0.50									
*Ethylbenzene	0.50									
o-Xylene	0.50									
m,p-Xylene	0.50									
*Styrene	0.50									
Bromoform	0.50									
Isopropylbenzene	0.50									
1,1,2,2-Tetrachloroethane	0.50									
*1,3-Dichlorobenzene	0.50									
*1,4-Dichlorobenzene	0.50									
1,2-Dichlorobenzene	0.50									
1,2-Dibromo-3-chloropropane	0.50									
1,2,4-Trichlorobenzene	0.50									
1,2,3-Trichlorobenzene	0.50									

CRQL = Contract Required Quantitation Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) Revised 09/99

Case #: 37823 SDG : C8222 Number of Soil Samples : 0

Site : PRICE BATTERY Number of Water Samples : 0

Lab. : SHEALY

Sample Number :		C8222									
Sampling Location :		MW3									
Matrix :		Water									
Units :		ug/L									
Date Sampled :		9/30/2008									
Time Sampled :		14:20									
Dilution Factor :		1.0									
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	5.0										
Phenol	5.0										
Bis(2-Chloroethyl)ether	5.0										
2-Chlorophenol	5.0										
2-Methylphenol	5.0										
2,2'-Oxybis(1-chloropropane)	5.0										
Acetophenone	5.0										
4-Methylphenol	5.0										
N-Nitroso-di-n-propylamine	5.0										
Hexachloroethane	5.0										
Nitrobenzene	5.0										
Isophorone	5.0										
2-Nitrophenol	5.0										
2,4-Dimethylphenol	5.0										
Bis(2-Chloroethoxy)methane	5.0										
2,4-Dichlorophenol	5.0										
Naphthalene	5.0										
4-Chloroaniline	5.0										
Hexachlorobutadiene	5.0										
Caprolactam	5.0										
4-Chloro-3-methylphenol	5.0										
2-Methylnaphthalene	5.0										
Hexachlorocyclopentadiene	5.0										
2,4,6-Trichlorophenol	5.0										
2,4,5-Trichlorophenol	5.0										
1,1'-Biphenyl	5.0										
2-Chloronaphthalene	5.0										
2-Nitroaniline	10										
Dimethylphthalate	5.0										
2,6-Dinitrotoluene	5.0										
Acenaphthylene	5.0										
3-Nitroaniline	10										
Acenaphthene	5.0										

Case #: 37823 SDG : C8222
Site : PRICE BATTERY
Lab. : SHEALY

Sample Number :		C8222									
Sampling Location :		MW3									
Matrix :		Water									
Units :		ug/L									
Date Sampled :		9/30/2008									
Time Sampled :		14:20									
Dilution Factor :		1.0									
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	10										
4-Nitrophenol	10										
Dibenzofuran	5.0										
2,4-Dinitrotoluene	5.0										
Diethylphthalate	5.0										
Fluorene	5.0										
4-Chlorophenyl-phenylether	5.0										
4-Nitroaniline	10										
4,6-Dinitro-2-methylphenol	10										
N-Nitrosodiphenylamine	5.0										
1,2,4,5-Tetrachlorobenzene	5.0										
4-Bromophenyl-phenylether	5.0										
*Hexachlorobenzene	5.0										
Atrazine	5.0										
*Pentachlorophenol	10										
Phenanthrene	5.0										
Anthracene	5.0										
Carbazole	5.0										
Di-n-butylphthalate	5.0										
Fluoranthene	5.0										
Pyrene	5.0										
Butylbenzylphthalate	5.0										
3,3'-Dichlorobenzidine	5.0										
Benzo(a)anthracene	5.0										
Chrysene	5.0										
Bis(2-ethylhexyl)phthalate	5.0										
Di-n-octylphthalate	5.0										
Benzo(b)fluoranthene	5.0										
Benzo(k)fluoranthene	5.0										
Benzo(a)pyrene	5.0										
Indeno(1,2,3-cd)pyrene	5.0										
Dibenzo(a,h)anthracene	5.0										
Benzo(g,h,i)perylene	5.0										
2,3,4,6-Tetrachlorophenol	5.0										

CRQL = Contract Required Quantitation Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) Revised 09/99

Case #: 37823 SDG : C8222 Number of Soil Samples : 0
Site : PRICE BATTERY Number of Water Samples : 0
Lab. : SHEALY

Sample Number :		C8222									
Sampling Location :		MW3									
Matrix :		Water									
Units :		ug/L									
Date Sampled :		9/30/2008									
Time Sampled :		14:20									
Dilution Factor :		1.0									
Pesticide Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHC	0.050										
beta-BHC	0.050	0.019	B								
delta-BHC	0.050										
*gamma-BHC (Lindane)	0.050										
*Heptachlor	0.050	0.13	B								
Aldrin	0.050										
Heptachlor epoxide	0.050										
Endosulfan I	0.050										
Dieldrin	0.10										
4,4'-DDE	0.10										
Endrin	0.10										
Endosulfan II	0.10										
4,4'-DDD	0.10										
Endosulfan sulfate	0.10		R								
4,4'-DDT	0.10										
*Methoxychlor	0.50										
Endrin ketone	0.10										
Endrin aldehyde	0.10										
alpha-Chlordane	0.050										
gamma-Chlordane	0.050	0.034	B								
*Toxaphene	5.0										

CRQL = Contract Required Quantitation Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) Revised 09/99

Case #: 37823 SDG : C8222 Number of Soil Samples : 0
Site : PRICE BATTERY Number of Water Samples : 0
Lab. : SHEALY

Sample Number :		C8222									
Sampling Location :		MW3									
Matrix :		Water									
Units :		ug/L									
Date Sampled :		9/30/2008									
Time Sampled :		14:20									
Dilution Factor :		1.0									
Aroclor Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
*Aroclor-1016	1.0										
*Aroclor-1221	1.0										
*Aroclor-1232	1.0										
*Aroclor-1242	1.0										
*Aroclor-1248	1.0										
*Aroclor-1254	1.0										
*Aroclor-1260	1.0										
*Aroclor-1262	1.0										
*Aroclor-1268	1.0										

CRQL = Contract Required Quantitation Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) Revised 09/99

Appendix C

Chain-of-Custody Records

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No:	37823
DAS No:	

R

Region:	3
Project Code:	CT4356
Account Code:	
CERCLIS ID:	PAN000305679
Spill ID:	AE2
Site Name/State:	37823 - Price Battery OU2 - 092008/PA
Project Leader:	Lucinda Pype
Action:	Combined RI/FS
Sampling Co:	CDM

Date Shipped:	10/1/2008
Carrier Name:	FedEx
Airbill:	7927 6079 7691
Shipped to:	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1			
2			
3			
4			

Sampler Signature:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	INORGANIC SAMPLE No.	QC Type
C8222	Ground Water/ David Michailof	L/G	BNA (14), PEST (14), VOA (14)	005-417 (Ice Only), 005-418 (Ice Only), 005-419 (Ice Only), 005-420 (Ice Only), 005-421 (Ice Only), 005-422 (Ice Only), 005-423 (Ice Only), 005-424 (Ice Only), 005-425 (HCL), 005-426 (HCL), 005-427 (HCL) (11)	MW3	S: 9/30/2008 14:20		Lab QC

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	C8222		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

BNA = CLP TCL Semivolatiles, PEST = CLP TCL Pesticide/PCBs, VOA = CLP TCL Volatiles

TR Number: 3-594095470-100108-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

SDG 4-2-08

U.S. EPA Region III Analytical Request Form

Revision 10.06

ASQAB USE ONLY		
RAS#	CT4356	Analytical TAT
DAS#		7/14
NSF#		

37823

Date: 25 August 2008	Site Activity: RI/FS Oversight		
Site Name: Price Battery		Street Address: 251 Grand Street	
City: Hamburg	State: PA	Latitude:	Longitude:
Program: Superfund	Acct. #: 2008 T03 302DD2C A3E2BD02	CERCLIS #: PAN000305679	
Site ID: N/A	Spill ID: N/A	Operable Unit: 2	
Site Specific QA Plan Submitted: ☐ No ☒ Yes	Title: Price Battery Operable Unit 2 RI/FS Oversight Draft SMP		Date Approved: 5/12/08
EPA Project Leader: John Banks	Phone#: 215-814-3214	Cell Phone #:	E-mail: banks.john-d@epa.gov
Request Preparer: Andrea Soo	Phone#: 610 293 0450	Cell Phone #: 610-304-0803	E-mail: sooac@cdm.com
Site Leader: Lucinda Pype	Phone#: 717-560-7500	Cell Phone #:	E-mail: pypelj@cdm.com

Contractor: CDM		EPA CO/PO: Melisa Hoffman		
#Samples 34	Matrix: soil	Parameter: Lead, Antimony, and Arsenic	Bonner	Method: ILM05.4 ICP-AES 28183
#Samples 1	Matrix: soil	Parameter: ICP metals + Hg	↓	Method: ILM05.4 ICP-AES 28184
#Samples 10	Matrix: soil	Parameter: TCL VOC	Shealy	Method: SOM01.2, low soil 28186
#Samples 10	Matrix: soil	Parameter: TCL SVOC	↓	Method: SOM01.2, low soil 28187
#Samples 2	Matrix: soil	Parameter: TCL PCB	↓	Method: SOM01.2 28188
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Total)	Bonner	Method: ILM05.4 ICP-AES 28185
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Dissolved)	↓	Method: ILM05.4 ICP-AES
#Samples 2	Matrix: water non-potable	Parameter: TCL VOC	Shealy	Method: SOM01.2, trace water 28189
#Samples 2	Matrix: water non-potable	Parameter: TCL SVOC	↓	Method: SOM01.2, low water 28190

Ship Date From: 9/08/2008 (9/12)	Ship Date To: 10/31/2008	Org. Validation Level M3	Inorg. Validation Level IM2

Unvalidated Data Requested: ☐ No ☒ Yes If Yes, TAT Needed: ☐ 14 days ☒ 7days ☐ 72hrs ☐ 48hrs ☐ 24hrs ☐ Other (Specify) + 3 days for CADRE ESAT

Validated Data Package Due: ☐ 42 days ☐ 30 days ☐ 21days ☐ 14 days ☒ Other (Specify) 28 days ~~7/21~~ 14/2/14

Electronic Data Deliverables Required: ☐ No ☒ Yes (EDDs will be provided in Region 3 EDD Format)

Special Instructions: The unvalidated data is requested via SMO/ESAT – 7 days analytical TAT + 3 days for compliance review = 10 days at no additional cost. Please note that we will be adopting the CLP methods, SOM01.2 and ILM05.4 in place of the PRP's SW846 methods listed in the attached PDF file. Reporting limits required are listed in the attached PDF file in Table 1a under "RL." If there are any reporting limits that cannot be met by the requested methods, please contact Andrea Soo immediately at sooac@cdm.com or (610)304-0803.. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (sooac@cdm.com) and Nancy Forman (FormanNA@cdm.com), and Jonah Jackson (JacksonJM@cdm.com) when available. Quantitation limits are provided in the PDF file that was attached to this lab request.

Saroj Parikh

From: "Walsh, Colin" <cwalsh20@fedcsc.com>
To: "Saroj Parikh" <sparikh@shealylab.com>
Cc: "Kerry Hinshaw" <khinshaw@shealylab.com>; <slizys.dan@epa.gov>; <Harris.Carroll@epamail.epa.gov>; <thaung.khin-cho@epa.gov>; <kwedar.john@epa.gov>
Sent: Thursday, October 02, 2008 8:40 AM
Attach: ATT00046.htm
Subject: Region 3 | Case 37823 | Lab SHEALY | Issue Discrepancies with tags, jars, and/or TR/COC | FINAL

Saroj,

Summary Start

-Through normal practices, the SMO Coordinator noticed that the analyses listed on the TR/COC do not match the analyses that were scheduled.-

Issue: The TR/COC lists the analysis as VOA/SVOA/ARO/PEST for the 1 water sample (C8222) shipped on 10/1/08; however, the laboratory is only scheduled for VOA/SVOA analysis for the water samples. Please note that the Case request list TVOA, not VOA, and there is no ARO/PEST analys requested for the water samples.

Resolution: Per Region 3, the laboratory will perform TVOA/SVOA/ARO analysis on the water sample. The laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the sample.

Summary End

Please let me know if you have any further questions or problems.

Thanks,

Colin

Colin G. Walsh

Environmental Coordinator - Region 3

CSC

15000 Conference Center Drive, Chantilly, VA 20151

Civil Division | (p) 703-818-4544 | (f) 703-818-4602 | cwalsh20@fedcsc.com | www.csc.com

---

10/2/08, 8:15 AM, Phone conversation between Dan Slizys (Region 3) and Colin Walsh (SMO). Colin indicated that on the Case request the analys is listed as TVOA, not VOA, and there is no ARO analysis listed on the request for the water samples. Dan indicated that the laboratory will perform TVOA/SVOA/ARO analysis on the water sample.

-----Original Message-----
From: Slizys.Dan@epamail.epa.gov [mailto:Slizys.Dan@epamail.epa.gov]
Sent: Thursday, October 02, 2008 6:30 AM
To: Walsh, Colin
Cc: Harris.Carroll@epamail.epa.gov; kwedar.john@epa.gov; thaung.khin-cho@epa.gov
Subject: Re: NEW ISSUE | Case 37823 | Lab SHEALY | Issue Discrepancies with tags, jars, and/or TR/COC |

Colin,

The lab has to perform the analysis that was scheduled--VOC,SVOC,Aroclors.

(See attached file: CT4356.doc)

"Walsh, Colin" <cwalsh20@fedcs c.com>
10/01/2008 03:25 PM

To: Dan Slizys/ESC/R3/USEPA/US@EPA, Carroll Harris/ESC/R3/USEPA/US@EPA
cc: Khin-Cho Thaung/ESC/R3/USEPA/US@EPA, John Kwedar/ESC/R3/USEPA/US@EPA
Subject: NEW ISSUE | Case 37823 | Lab SHEALY | Issue Discrepancies with tags, jars, and/or TR/COC |

Dan/Carroll,

Please see the issue below for Case 37823 (TR/COC attached) and advise.

-Through normal practices, the SMO Coordinator noticed that the analyses listed on the TR/COC does not match the analyses that were scheduled

Issue: The TR/COC lists the analysis as VOA/SVOA/ARO/PEST for the 1 water sample shipped on 10/1/08; however, the laboratory is only scheduled for VOA/SVOA analysis for the water samples. Please note that the laboratory is scheduled for ARO (no PEST) analysis for the soil samples.

Please let me know if you need any further information.

Thanks,

Colin

Colin G. Walsh

Environmental Coordinator - Region 3

CSC

15000 Conference Center Drive, Chantilly, VA 20151 Civil Division | (p) 703-818-4544 | (f) 703-818-4602 | cwalsh20@fedcsc.com | www.csc.com

-----Original Message-----

From: Slizys.Dan@epamail.epa.gov [mailto:Slizys.Dan@epamail.epa.gov]

Sent: Wednesday, October 01, 2008 2:54 PM

To: Walsh, Colin

Subject: Fw: Case 37823

----- Forwarded by Dan Slizys/ESC/R3/USEPA/US on 10/01/2008 02:51 PM -----

"Michallof, David" <MichallofDR@cdm.com>	To	Judy Snyder/ESC/R3/USEPA/US@EPA, Lisa Penix/ESC/R3/USEPA/US, "Michelle Berardino" <mberardino@fedcsc.com>, R3 Clients@EPA, "Soo, Andrea" <SooAC@cdm.com>
10/01/2008 02:47 PM	cc	"Pype, Lucinda" <PypeLJ@cdm.com>,

"Christian, Vanessa"

<ChristianV@cdm.com>

Subject

Case 37823

Clients Team and Michelle –

Samples under case 37823 for the XXXX Site were shipped to Shealy today for delivery tomorrow morning. One cooler containing water samples for organics was shipped under FedEx airbill no 7927 6079 7691. There will be no further organics shipments for this case. The case is still open for inorganics Electronic copies of the TR/COC in .xml and .F2L format are attached for your records.

If you have any questions regarding this shipment, please do not hesitate to call me at 703-859-5233.

Thank you

Dave

<<10_11_2008.pdf>> <<37823_100108.xml>> <<37823_10_01.F2L>> (See attached file: 10_11_2008.pdf)(See attached file: 37823_100108.xml) (See attached file: 37823_10_01.F2L) (See attached file: 10_11_2008.pdf)

Saroj Parikh

From: "Walsh, Colin" <cwalsh20@fedcsc.com>
To: "Saroj Parikh" <sparikh@shealylab.com>
Cc: "Kerry Hinshaw" <khinshaw@shealylab.com>; <mwoodrum@shealylab.com>; <slizys.dan@epa.gov>; <Harris.Carroll@epamail.epa.gov>; <thaung.khin-cho@epa.gov>; <kwedar.john@epa.gov>
Sent: Monday, October 06, 2008 9:05 AM
Attach: ATT00036.htm; Case 37823 SDG C8222 TR.pdf
Subject: Region 03 | Case 37823 | Lab SHEALY | Issue Documentation | FINAL

Saroj,

Summary Start

-Discrepancies with tags, jars, and/or TR/COC-

Issue 1: The TR/COC lists the analyses for sample C8222 as BNA, PEST, and VOA; however, per the Scheduling Notification From the analyses are TVOA, SVOA, and ARO.

Resolution 1: Per Region 3, the laboratory will perform TVOA, SVOA, ARO, and PEST analyses on sample C8222. The laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the sample.

Issue 2: The laboratory received 11 containers for sample C8222; however, they only have 10 sample tags. Sample tag number 005-421 cannot be located.

Resolution 2: Per Region 3, the laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the sample.

-Insufficient/inappropriate designation of laboratory QC-

Issue 3: The TR/COC designated sample C8222 as laboratory QC; however, per the Scheduling Notification Form laboratory QC is not required.

Resolution 3: Per Region 3, the laboratory will not perform laboratory QC on sample C8222. The laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the sample.

Summary End

Please let me know if you have any further questions or problems.

Thanks,

Colin

Colin G. Walsh

Environmental Coordinator - Region 3

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15000 Conference Center Drive, Chantilly, VA 20151

Civil Division | (p) 703-818-4544 | (f) 703-818-4602 |
cwalsh20@fedcsc.com | www.csc.com

10/6/08, 8:45 AM, Phone conversation between Dan Slizys (Region 3) and Colin Walsh (SMO). Colin asked if the PEST analysis should be added to the sample and if laboratory QC is required. Dan indicated that PEST should be added to the sample and that laboratory is not required on the sample.

-----Original Message-----
From: Slizys.Dan@epamail.epa.gov [mailto:Slizys.Dan@epamail.epa.gov]
Sent: Monday, October 06, 2008 7:23 AM
To: Walsh, Colin; sooac@cdm.com; pypelj@cdm.com
Cc: harris.carroll@epa.gov
Subject: Re: NEW ISSUE | Case 37823 | Lab SHEALY | Issue Documentation

Andrea and Lucinda,

There is a missing tag issue which needs to be addressed--Sample tag number 005-421 cannot be located.

Responses are with the text below in bold.

(See attached file: CT4356.doc)

"Walsh, Colin" <cwalsh20@fedcsc.com>

10/03/2008 03:40 PM

To: Dan Slizys/ESC/R3/USEPA/US@EPA, Carroll Harris/ESC/R3/USEPA/US@EPA

cc:

Subject: NEW ISSUE | Case 37823 | Lab SHEALY | Issue Documentation

Dan,

This is Keri Schaffer; Colin has left for the day.

SHEALY is reporting the following issues regarding Case 37823. Issue 1 may be resolved using a standard answers. Please advise on issues 2 and 3.

-Discrepancies with tags, jars, and/or TR/COC- Issue 1: The TR/COC lists the analyses for sample C8222 as BNA, PEST, and VOA; however, per the Scheduling Notification From the analyses are TVOA, SVOA, and ARO.

Resolution 1: In accordance with previous direction from Region 3, the laboratory will note the issue in the Case/SDG Narrative, perform the analyses as indicated on the Scheduling Notification Form, and proceed with the analysis of the samples. The resolution will be applied to all TR/COCs received for this Case that list an incorrect analysis.

Issue 2: The laboratory received 11 containers for sample C8222; however, they only have 10 sample tags. Sample tag number 005-421 cannot be located.

The lab must document the issue inthwe case narrative and proceed with

the analysis. Field personnel will be contacted regarding the missing

tag.

-insufficient/inappropriate designation of laboratory QC- Issue 3: The TR/COC designated sample C8222 as laboratory QC; however, per the Scheduling Notification Form laboratory QC is not required. The analyses for this sample are TVOA, SVOA, and ARO.

Region 3 does not require QC for VOC and SVOC. However, QC is required for aroclors.

Thank you,

Keri Schaffer

Environmental Coordinator/Analyst

Regions 5, 6, and 10

CSC

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---

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-----Original Message-----

From: Slizys.Dan@epamail.epa.gov [mailto:Slizys.Dan@epamail.epa.gov]

Sent: Monday, October 06, 2008 7:37 AM

To: Soo, Andrea

Cc: Walsh, Colin; Michailof, David; clients.r3@epa.gov

Subject: Re: Requesting additional analysis for Case 37823.

Colin,

The customer is requesting to add one PCB sample for case 37823. Please alert the lab. Thanks!

(See attached file: CT4356.doc)

"Soo, Andrea"
<SooAC@cdm.com>

To

10/03/2008 10:49 AM — R3 Clients@EPA

cc

"Walsh, Colin"
<cwalsh20@fedcsc.com>,
"Michailof, David"
<MichailofDR@cdm.com>

Subject

Requesting additional analysis for Case 37823.

Clients Team,

I would like to add the following additional analyses to Price Battery Case 37823:

1 water PEST/PCBs, SOM01.2 for Shealy Environmental (organic lab)

The sample for which this analysis has been added is C8222 in the attached TR/COC. Please let me know if Shealy will accept this additional analysis.

Thanks in advance,

Andrea Soo

CDM Wayne, PA

(610)304-0803

From: Saroj Parikh [mailto:sparikh@shealylab.com]

Sent: Friday, October 03, 2008 3:07 PM

To: Walsh, Colin

Cc: Saroj Parikh; Kerry Hinshaw; Michael A. Woodrum

Subject: Re: Region 3 | Case 37823 | Lab SHEALY | Issue Discrepancies with tags, jars, and/or TR/COC | FINAL

Colin,

Case 37823 SDG C8222: Sample C8222 was received on 10/02/08. Please see attached TR/COC.

Issue 1: As per Scheduling Notification, no lab QC is required. However, sample C8222 is listed for lab QC on the TR/COC. As per your email, we have scheduled this sample for TVOA, SVOA, and ARO analyses. Please let us know if lab QC is required for this Case.

Issue 2: We received 11 containers for sample C8222. We have only 10 sample tags for this sample. Sample tag number 005-421 can not be located.

Thanks,:

Saroj A. Parikh

Project Manager

Shealy Environmental Services, Inc.

www.shealylab.com

Tel.: 803-791-9700, ext. 147

sparikh@shealylab.com

(See attached file: Case 37823 SDG C8222 TR.pdf)

Saroj Parikh

From: "Walsh, Colin" <cwalsh20@fedcsc.com>
To: "Saroj Parikh" <sparikh@shealylab.com>
Cc: "Kerry Hinshaw" <khinshaw@shealylab.com>; <mwoodrum@shealylab.com>; <slizys.dan@epa.gov>; <Harris.Carroll@epamail.epa.gov>; <thaung.khin-cho@epa.gov>; <kwedar.john@epa.gov>
Sent: Tuesday, October 07, 2008 9:04 AM
Attach: ATT00024.htm; Case 37823 SDG C8222 TR.pdf
Subject: Region 03 | Case 37823 | Lab SHEALY | Issue Documentation | FINAL

Saroj,

Summary Start

-Record of Communication-

This ROC has been updated to include that water sample C8222 is a field sample and laboratory QC is required for the PEST and ARO fraction for the sample. Also, sample tag number 005-421 is referenced on one of the SVOA bottle labels.

-Discrepancies with tags, jars, and/or TR/COC-

Issue 1: The TR/COC lists the analyses for sample C8222 as BNA, PEST, and VOA; however, per the Scheduling Notification From the analyses are TVOA, SVOA, and ARO.

Resolution 1: Per Region 3, the laboratory will perform TVOA, SVOA, ARO, and PEST analyses on sample C8222. The laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the sample.

Issue 2: The laboratory received 11 containers for sample C8222; however, they only have 10 sample tags. Sample tag number 005-421 cannot be located.

Resolution 2: Per Region 3, the sample tag number 005-421 should be assigned to one bottle for the SVOA fraction with the bottle label that references tag number 421. The laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the sample.

-Insufficient/inappropriate designation of laboratory QC-

Issue 3: The TR/COC designated sample C8222 as laboratory QC; however, per the Scheduling Notification Form laboratory QC is not required.

Resolution 3: Per Region 3, the laboratory will perform laboratory QC on the PEST and ARO fraction for sample C8222. The laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the sample.

Summary End

Please let me know if you have any further questions or problems.

Thanks,

Colin

Colin G. Walsh

Environmental Coordinator - Region 3

CSC

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Civil Division | (p) 703-818-4544 | (f) 703-818-4602 |
cwalsh20@fedcsc.com | www.csc.com

10/7/08, 8:35 AM, Phone conversation between Dan Slizys (Region 3) and Colin Walsh (SMO). Colin indicated that the sampler confirmed that water sample C8222 is a field sample and not a field QC (rinsate blank) sample. Colin asked if laboratory QC is required for the PEST and ARO fractions for the sample. Dan indicated that laboratory QC is required on the PEST and ARO fraction for sample C8222.

10/6/08, 3:30 PM, Phone conversation between Andrea Soo (CDM) and Colin Walsh (SMO). Colin asked if the water sample C8222 was a field sample or a field QC (rinsate blank) sample due to the QC type designation on the Regional TR/COC. Andrea Soo indicated that the sample was a field sample.

-----Original Message-----
From: Soo, Andrea [mailto:SooAC@cdm.com]
Sent: Monday, October 06, 2008 3:02 PM
To: Slizys.Dan@epamail.epa.gov; Walsh, Colin
Cc: harris.carroll@epa.gov; Pype, Lucinda
Subject: RE: NEW ISSUE | Case 37823 | Lab SHEALY | Issue Documentation

Dan,

Please note the following responses for each issue:

Issue 1 - PEST/PCB analysis was added for one aqueous sample under Case 37823.

Issue 2 - Sample tag number 421 should be assigned to one bottle for SVOC analysis for sample number C8222, with the label referencing tag 421..

Issue 3 - Please discard additional volume provided for MS/MSD for SVOC analysis for sample number C8222. An MS/MSD designation is still

assigned for the PEST/PCB portion, as indicated below.

If you have any further questions or concerns, please do not hesitate to contact me directly at (610)304-0803.

Thanks,

Andrea C. Soo, P.G.

Office: 610.263.2615 or speed dial ext. 32615

Fax: 610.293.1920 | Cell: 610.304.0803

sooac@cdm.com

CDM consulting. engineering. construction. operations.

993 Old Eagle School Road, Suite 408

Wayne, PA 19087 | www.cdm.com

From: Walsh, Colin
Sent: Monday, October 06, 2008 8:58 AM
To: Saroj Parikh
Cc: 'Kerry Hinshaw'; 'mwoodrum@shealylab.com'; 'slizys.dan@epa.gov'; 'Harris.Carroll@epamail.epa.gov'; 'thaung.khin-cho@epa.gov'; 'kwedar.john@epa.gov'
Subject: Region 03 | Case 37823 | Lab SHEALY | Issue Documentation | FINAL

Saroj,

Summary Start

-Discrepancies with tags, jars, and/or TR/COC-

Issue 1: The TR/COC lists the analyses for sample C8222 as BNA, PEST, and VOA; however, per the Scheduling Notification From the analyses are TVOA, SVOA, and ARO.

Resolution 1: Per Region 3, the laboratory will perform TVOA, SVOA, ARO, and PEST analyses on sample C8222. The laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the sample.

Issue 2: The laboratory received 11 containers for sample C8222; however, they only have 10 sample tags. Sample tag number 005-421 cannot be located.

Resolution 2: Per Region 3, the laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the sample.

-Insufficient/inappropriate designation of laboratory QC-

Issue 3: The TR/COC designated sample C8222 as laboratory QC; however, per the Scheduling Notification Form laboratory QC is not required.

Resolution 3: Per Region 3, the laboratory will not perform laboratory QC on sample C8222. The laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the sample.

Summary End

Please let me know if you have any further questions or problems.

Thanks,

Colin

Colin G. Walsh

Environmental Coordinator - Region 3

CSC

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Civil Division | (p) 703-818-4544 | (f) 703-818-4602 |
cwalsh20@fedcsc.com | www.csc.com

10/6/08, 8:45 AM, Phone conversation between Dan Slizys (Region 3) and Colin Walsh (SMO). Colin asked if the PEST analysis should be added to the sample and if laboratory QC is required. Dan indicated that PEST should be added to the sample and that laboratory is not required on the sample.

-----Original Message-----
From: Slizys.Dan@epamail.epa.gov [mailto:Slizys.Dan@epamail.epa.gov]
Sent: Monday, October 06, 2008 7:23 AM
To: Walsh, Colin; sooac@cdm.com; pypelj@cdm.com
Cc: harris.carroll@epa.gov
Subject: Re: NEW ISSUE | Case 37823 | Lab SHEALY | Issue Documentation

Andrea and Lucinda,

There is a missing tag issue which needs to be addressed--Sample tag number 005-421 cannot be located.

Responses are with the text below in bold.

(See attached file: CT4356.doc)

"Walsh, Colin"
<cwalsh20@fedcsc
.com>
10/03/2008 03:40 PM

To
Dan Slizys/ESC/R3/USEPA/US@EPA,
Carroll
Harris/ESC/R3/USEPA/US@EPA

cc

Subject
NEW ISSUE | Case 37823 | Lab
SHEALY | Issue Documentation

Dan,

This is Keri Schaffer; Colin has left for the day.

SHEALY is reporting the following issues regarding Case 37823. Issue 1 may be resolved using a standard answers. Please advise on issues 2 and 3.

-Discrepancies with tags, jars, and/or TR/COC- Issue 1: The TR/COC lists the analyses for sample C8222 as BNA, PEST, and VOA; however, per the Scheduling Notification From the analyses are TVOA, SVOA, and ARO.

Resolution 1: In accordance with previous direction from Region 3, the laboratory will note the issue in the Case/SDG Narrative, perform the analyses as indicated on the Scheduling Notification Form, and proceed with the analysis of the samples. The resolution will be applied to all TR/COCs received for this Case that list an incorrect analysis.

Issue 2: The laboratory received 11 containers for sample C8222; however, they only have 10 sample tags. Sample tag number 005-421 cannot be located.

The lab must document the issue inthwe case narrative and proceed with

the analysis. Field personnel will be contacted regarding the missing

tag.

-Insufficient/inappropriate designation of laboratory QC- Issue 3: The TR/COC designated sample C8222 as laboratory QC; however, per the Scheduling Notification Form laboratory QC is not required. The analyses for this sample are TVOA, SVOA, and ARO.

Region 3 does not require QC for VOC and SVOC. However, QC is required for aroclors.

Thank you,

Keri Schaffer

Environmental Coordinator/Analyst

Regions 5, 6, and 10

CSC

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-----Original Message-----

From: Slizys.Dan@epamail.epa.gov [mailto:Slizys.Dan@epamail.epa.gov]

Sent: Monday, October 06, 2008 7:37 AM

To: Soo, Andrea

Cc: Walsh, Colin; Michailof, David; clients.r3@epa.gov

Subject: Re: Requesting additional analysis for Case 37823.

Colin,

The customer is requesting to add one PCB sample for case 37823. Please alert the lab. Thanks!

(See attached file: CT4356.doc)

"Soo, Andrea"

<SooAC@cdm.com>

To

10/03/2008 10:49 AM

R3 Clients@EPA

cc

"Walsh, Colin" <cwalsh20@fedcsc.com>,
"Michailof, David" <MichailofDR@cdm.com>

Subject

Requesting additional analysis for Case 37823.

Clients Team,

I would like to add the following additional analyses to Price Battery Case 37823:

1 water PEST/PCBs, SOM01.2 for Shealy Environmental (organic lab)

The sample for which this analysis has been added is C8222 in the attached TR/COC. Please let me know if Shealy will accept this additional analysis.

Thanks in advance,

Andrea Soo

CDM Wayne, PA

(610)304-0803

From: Saroj Parikh [mailto:sparikh@shealylab.com]

Sent: Friday, October 03, 2008 3:07 PM

To: Walsh, Colin

Cc: Saroj Parikh; Kerry Hinshaw; Michael A. Woodrum

Subject: Re: Region 3 | Case 37823 | Lab SHEALY | Issue Discrepancies with tags, jars, and/or TR/COC | FINAL

Colin,

Case 37823 SDG C8222: Sample C8222 was received on 10/02/08. Please see attached TR/COC.

Issue 1: As per Scheduling Notification, no lab QC is required. However,

sample C8222 is listed for lab QC on the TR/COC. As per your email, we have scheduled this sample for TVOA, SVOA, and ARO analyses. Please let us know if lab QC is required for this Case.

Issue 2: We received 11 containers for sample C8222. We have only 10 sample tags for this sample. Sample tag number 005-421 can not be located.

Thanks,:

Saroj A. Parikh

Project Manager

Shealy Environmental Services, Inc.

www.shealylab.com

Tel.: 803-791-9700, ext. 147

sparikh@shealylab.com

(See attached file: Case 37823 SDG C8222 TR.pdf)

Saroj Parikh

From: "Schaffer, Keri" <kschaffer@fedcsc.com>
To: "Kerry Hinshaw" <khinshaw@shealylab.com>; "Saroj Parikh" <sparikh@shealylab.com>
Cc: <slizys.dan@epa.gov>; <harris.carroll@epa.gov>; <kwedar.john@epa.gov>; <thaung.khin-cho@epa.gov>
Sent: Thursday, October 23, 2008 9:56 AM
Attach: ATT00027.htm
Subject: Region 03 | Case 37823 | Lab SHEALY | SDG C8222 | Issue Laboratory problems | FINAL

Kerry,

This is Keri Schaffer; I'm helping Colin today.

Summary Start

Issue: SDG C8222 contained one water sample for VOA, SVOC, Pest, and ARO analysis. The PEST sample and associated method blank are contaminated with PEST compounds from a high level sample that was processed through the extractions laboratory concurrently with this SDG. Eight bottles were received, MS/MSDs were required for the Pest and ARO analyses, and the SVOC had one re-extraction, so there is no remainir volume left for this sample.

Resolution: Per Region 3, the laboratory shall report the results for this sample as is and note the issue in the Case/SDG Narrative.

Summary End

Please let me know if you have any questions.

Thank you,

Keri for

Colin G. Walsh

Environmental Coordinator - Region 3

CSC

15000 Conference Center Drive, Chantilly, VA 20151 Civil Division | (p)

703-818-4544 | (f) 703-818-4602 | cwalsh20@fedcsc.com | www.csc.com <http://www.csc.com>

10/23/2008 9:35am

Phone conversation between Keri Schaffer (SMO) and Dan Slizys (Region 3). Per Region 3, the laboratory shall report the sample as is and note issue in the SDG Narrative.

-----Original Message-----
From: Slizys.Dan@epamail.epa.gov [mailto:Slizys.Dan@epamail.epa.gov]
Sent: Tuesday, October 21, 2008 1:41 PM

To: Schaffer, Keri; sooac@cdm.com
Cc: harris.carroll@epa.gov; kwedar.john@epa.gov; thaung.khin-cho@epa.gov
Subject: RE: NEW ISSUE | Case 37823 | Lab SHEALY | SDG C8222 | Issue Insufficient volume

Keri and Andrea,

I will check with the sampler. The warter sample for pesticide analysis was cross contaminated. Can you collect another sample for pesticide fraction and submit it to the lab. The sample is C8222.

"Schaffer, Keri" <kschaffer@fedcs c.com>
10/21/2008 01:22 PM

To: Dan Slizys/ESC/R3/USEPA/US@EPA
cc: Carroll Harris/ESC/R3/USEPA/US@EPA, John Kwedar/ESC/R3/USEPA/US@EPA, Khin-Cho Thaung/ESC/R3/USEPA/US@EPA
Subject: RE: NEW ISSUE | Case 37823 | Lab SHEALY | SDG C8222 | Issue Insufficient volume

Dan,

Per the resolution provided by the Region on 10/7, sample C8222 requires TVOA, SVOA, ARO, and PEST analyses.

Thanks,

Keri Schaffer
Environmental Coordinator/Analyst

Regions 5, 6, and 10

CSC

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-----Original Message-----

From: Slizys.Dan@epamail.epa.gov [mailto:Slizys.Dan@epamail.epa.gov]

Sent: Tuesday, October 21, 2008 1:12 PM

To: Schaffer, Keri; Walsh, Colin

Cc: harris.carroll@epa.gov; kwedar.john@epa.gov; thaung.khin-cho@epa.gov

Subject: Re: NEW ISSUE | Case 37823 | Lab SHEALY | SDG C8222 | Issue Insufficient volume

Keri,

Pesticides were not requested for this case. The fractions ordered were VOC,SVOC and PCB.

(See attached file: CT4356.doc)

"Schaffer, Keri" <kschaffer@fedcs c.com>
10/21/2008 11:23 AM

To: Dan Slizys/ESC/R3/USEPA/US@EPA, Carroll Harris/ESC/R3/USEPA/US@EPA, John Kwedar/ESC/R3/USEPA/US@EPA, Khin-Cho Thaung/ESC/R3/USEPA/US@EPA

cc:

Subject: NEW ISSUE | Case 37823 | Lab SHEALY | SDG C8222 | Issue Insufficient volume

Dan/Carroll,

SHEALY is reporting the following issue for Case 37823/SDG C8222.

Issue: Case 37823/SDG C8222 contained one water sample for VOA, SVOC, Pest, and ARO analysis. The PEST sample and associated method blank are contaminated with PEST compounds from a high level sample that was processed through the extractions laboratory concurrently with this SDG. The method blank has beta-BHC at 0.086 ug/L, Heptachlor at 0.21 ug/L and gamma-Chlordane at 0.070 ug/L. Sample C8222 has beta-BHC at 0.019 ug/L, Heptachlor at 0.13 ug/L and gamma-Chlordane at 0.034 ug/L. The CRQL for these compounds is 0.050 ug/L. Eight bottles were received, MS/MSDs were required for the Pest and ARO analyses, and the SVOC had one

re-extraction, so there is no remaining volume left for this sample.

Does the Region want the laboratory to report the sample and note the issue in the SDG Narrative or cancel the PEST analysis in this SDG?

Thank you,

Keri Schaffer for

Colin G. Walsh

Environmental Coordinator - Region 3

CSC

15000 Conference Center Drive, Chantilly, VA 20151 Civil Division | (p) 703-818-4544 | (f) 703-818-4602 | cwalsh20@fedcsc.com | www.csc.com

From: Kerry Hinshaw [mailto:khinshaw@shealylab.com]

Sent: Tuesday, October 21, 2008 11:08 AM

To: Walsh, Colin

Cc: 'Saroj Parikh'

Subject: Case 37823, SDG C8222

Colin,

Case 37823, SDG C8222 contained one water sample for VOA, SVOC, Pest and Aroclor analysis. The pesticide sample and associated method blank are contaminated with pesticide compounds from a high level sample that was processed through the extractions laboratory concurrently with this SDG. The method blank has beta-BHC at 0.086 ug/L, Heptachlor at 0.21 ug/L and gamma-Chlordane at 0.070 ug/L. Sample C8222 has beta-BHC at 0.019 ug/L, Heptachlor at 0.13 ug/L and gamma-Chlordane at 0.034 ug/L. The CRQL for these compounds is 0.050 ug/L. There is no sample left for re-extraction. Eight bottles were received – MS/MSDs were required for the Pest and Aroclor and the SVOC had one re-extraction so all of the sample has been consumed.

Does the Region want us to report the sample and narrate, or cancel the pesticide analysis in this SDG? Please advise.

Kerry S. Hinshaw

Technical Director

Shealy Environmental Services

khinshaw@shealylab.com

(803) 227-3164

Appendix D

Laboratory Case Narrative

Shealy Environmental Services, Inc.

Contract Number: EPW05031

Date: 10/28/2008

SDG Narrative

Case 37823

SDG C8222

EPA Sample Numbers

EPA Sample Number	TVOA Fraction	DL/RE	BNA Fraction	DL/RE	PEST Fraction	DL/RE	Aroclor Fraction	DL/RE	Aqueous TVOA Sample pH Value
C8222	Yes	No	Yes	No	No	No	Yes	No	<2
C8222MS	No	No	No	No	Yes	Yes	Yes	No	N/A
C8222MSD	No	No	No	No	Yes	Yes	Yes	No	N/A

Columns	TVOA DB-624, 20m x 0.18mm x 1.0um BNA DB-5MS, 30m x 0.25mm x 0.5um PEST/Aroclor DB-35MS 30m x 0.32mm x 0.25um PEST/Aroclor DB-XLB 30m x 0.32mm x 0.50um

VOA Equation

Water sample concentration (ug/L) = $$\frac{(A_x)(I_s)(DF)}{(A_{is})(\overline{RRF})(V_o)}$$

Where

A_x is the area of the characteristic ion (EICP) for the compound to be measured.

A_{is} is the area of the characteristic ion (EICP) for the internal standard.

I_s is the amount of internal standard added, in ng.

$\overline{RRF}$ is the mean relative response factor from the initial calibration.

DF is the dilution factor.

V_o is total volume of water purged, in mL.

BNA Equation	Water sample concentration ug/L = $\frac{(A_x)(I_s)(V_t)(DF)(GPC)}{(A_{is})(\overline{RRF})(V_o)(V_i)}$ Where A_x is the area of the characteristic ion (EICP) for the compound to be measured. A_{is} is the area of the characteristic ion (EICP) for the internal standard. I_s is the amount of internal standard added, in ng. $\overline{RRF}$ is the mean relative response factor from the initial calibration. DF is the dilution factor. GPC = V_{in}/V_{out}: GPC factor. V_{in} is the volume of extract loaded onto GPC column. V_{out} is the volume of extract collected after GPC cleanup. V_t is volume of the concentrated extract in uL. (If no GPC cleanup is performed, then V_t = 1000uL. If GPC cleanup is performed, then $V_t = V_{out}$.). V_i is the volume of the extract injected in uL. V_o: Volume of water extracted in mL
PEST/Aroclor Equation	Water sample concentration ug/L = $\frac{(A_x)(V_t)(DF)(GPC)}{(\overline{CF})(V_o)(V_i)}$ Where A_x is the response (peak area) of the compound to be measured. $\overline{CF}$ is the mean calibration factor from the initial calibration (area/ng). DF is the dilution factor. GPC = V_{in}/V_{out}: GPC factor. V_{in} is the volume of extract loaded onto GPC column. V_{out} is the volume of extract collected after GPC cleanup. V_t is volume of the concentrated extract in uL. (If no GPC cleanup is performed, then V_t = 1000uL. If GPC cleanup is performed, then $V_t = V_{out}$.). V_i is the volume of the extract injected in uL. V_o: Volume of water extracted in mL.

Sample Receiving

The cooler temperature associated with this sample was 4.5°C.

The TR/COC listed the analysis for water sample C8222 in this SDG for SVOA, VOA, PEST, and AROCLOR. This Case was originally scheduled for only VOA and SVOA analyses for water sample. As per Region 3, sample C8222 in this Case was scheduled for SVOA, VOA, PEST, and AROCLOR analyses.

Eleven sample containers were received for sample C8222, but there were only ten sample tags received with this sample, Sample tag number 005-421 could not be located. As per Region 3, the missing sample tag number 005-421 was assigned to the SVOA sample bottle labeled with reference tag number 421.

As per Scheduling Notification, laboratory QC is not required for water sample. However, sample C8222 was designated for laboratory QC on the TR/COC. As per Region 3, sample C8222 was scheduled for laboratory QC for PEST and AROCLOR fractions.

TVOA Fraction

The method blank VBLK10 had 1,2-Dichloropropane-d_6 DMC recovery marginally low and outside the acceptance limit. Due to an analyst's oversight, no re-analysis was performed for this method blank.

Manual integration was performed on Chloroethane for VSTD00121 due to incorrect auto integration.

Manual integration was performed on Chloromethane for VSTD005E0 due to incorrect auto integration.

Manual integration was performed on 1,2-Dichloropropane for VSTD00109 and VSTD0.521 due to incorrect auto integration.

Manual integration was performed on 1,1,2,2-Tetrachloroethane for VSTD0.509 due to incorrect auto integration.

The peak eluting at ~4.3min on MSD8 in all analyses is Pentafluorobenzene. This is an internal standard compound that is not being used for quantitation. This compound is not being identified as a TIC.

BNA Fraction

None.

PEST Fraction

Sample C8222 and associated method blank were contaminated with beta-BHC, gamm-Chloradane, and/or Heptachlor target compounds from a high level sample that was processed through the extractions laboratory concurrently with this SDG. The percent recovery of gamm-Chlordane in the LCS PLCS84 on both the DB-35MS and DB-XLB columns was above the QC limits. Endosulfan sulfate I was not recovered in the LCS PLCS84 on both the DB-35MS and DB-XLB columns. Eight bottles were received for sample C8222, MS/MSDs were required for the PEST and ARO analyses, and the SVOC had one re-extraction, so there was no remaining volume left for this sample for re-extraction. The results are being released without any corrective action.

Manual integration was performed on alpha-Chlordane and Endosulfan I on the DB-XLB column for INDC3G3 standard due to incorrect auto integration.

Manual integration was performed on Toxaphene for several standards due to incorrect auto integration.

Aroclor Fraction

None.

I certify that this Sample Data Package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy Sample Data Package and in the electronic data deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

S.A. Parikh

Saroj A. Parikh
Project Manager
October 28, 2008

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE : October 31, 2008

SUBJECT: Region III Data QA Review

FROM : Khin Cho Thaung KCT
Region III ESAT RPO (3ES20)

TO : John Banks
Regional Project Manager (3HS22)

Attached is the **inorganic** data validation report for the **Price Battery** site (Case#: **37823**, SDG#: **MC8223**) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2743.

Attachments

cc: Andrea Soo (CDM Federal)

TO File #: 0014 TDF#: 1084

Lockheed Martin Enterprise Solutions & Services
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597

LOCKHEED MARTIN
We never forget who we're working for™

Date: October 30, 2008

Subject: Inorganic Data Validation (IM2 Level)
Case: 37823
SDG : MC8223
Site : Price Battery

From: Kurt Roby
Inorganic Data Reviewer

Mahboobeh Mecanic
Senior Oversight Chemist

To: Khin-Cho Thaung
ESAT Region 3 Project Officer

OVERVIEW

Case 37823, Sample Delivery Group (SDG) MC8223, consisted of one (1) soil sample analyzed for antimony (Sb), arsenic (As) and lead (Pb) by ICP-AES. The sample was analyzed by Bonner Analytical Testing Company (BONNER) according to Contract Laboratory Program (CLP) Statement of Work (SOW) ILM05.4 through the Routine Analytical Services (RAS) program.

SUMMARY

Data were validated according to Region III Modifications to the National Functional Guidelines for Inorganic Data Review, Level IM2. Areas of concern with respect to data usability are listed below.

Data in this case have been impacted by an outlier present in the matrix spike analysis. The detail of this outlier is discussed under "Minor Problem," the effect on sample MC8223 is outlined in "Table 1A" and qualified analytical results for sample MC8223 is summarized on the Data Summary Form (DSF).

MINOR PROBLEM

The matrix spike recovery was low (<75% but >30%) for antimony (Sb). Low recoveries may be attributed to matrix interferences or analyte lost during the digestion process. The "L" qualifier for this outlier was superseded by "J" on the Data Summary Form (DSF). The post-digestion spike recovery was within the quality control limit; however, data are not qualified based on the post-digestion spike recovery.

NOTES

Reported results between MDLs and Contract Required Quantitation Limits (CRQLs) were qualified "J" on the DSF.

Data for Case 37823, SDG MC8223, were reviewed in accordance with the National Functional Guidelines for Evaluating Inorganic Analyses with Modifications for use within Region III.

ATTACHMENTS

INFORMATION REGARDING REPORT CONTENT

Table 1A is a summary of qualifiers applied to the laboratory-generated results during data validation.

Table 1A	Summary of qualifiers on data summary forms after data validation
Table 1B	Codes used in comments column of Table 1A
Appendix A	Glossary of Data Qualifier Codes
Appendix B	Data Summary Form(s)
Appendix C	Chain of Custody Records
Appendix D	Laboratory Case Narrative

DCN: 37823_MC8223

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

Case 37823, SDG MC8223

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Sb	MC8223	J			>MDL<CRQL MSL (50%)

* See explanation of comments in Table 1B

TABLE 1B
CODES USED IN COMMENTS COLUMN

>MDL<CRQL	=	Reported result is greater than MDL but less than CRQL and is considered estimated.
MSL	=	Matrix spike recovery was low (<75% but >30%) [percent recovery is in parenthesis]. Positive result may be biased low.

Appendix A

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

Appendix B

Data Summary Forms

Case #: 37823 SDG : MC8223 Number of Soil Samples : 1
Site : PRICE BATTERY Number of Water Samples : 0
Lab. : BONNER

Sample Number :		MC8223									
Sampling Location :		KC-SED 2									
Matrix :		Soil									
Units :		mg/Kg									
Date Sampled :		10/2/2008									
Time Sampled :		09:00									
%Solids :		84.5									
Dilution Factor :		1.0									
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6	0.70	J								
ARSENIC	1	1.7									
*LEAD	1	200									

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100) Revised 09/99

Appendix C

Chain of Custody Records

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 37823 **R**
DAS No:

Region:	3	**Date Shipped:**	10/2/2008	**Chain of Custody Record**	**Sampler Signature:**
Project Code:	CT4356	**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	7921 1802 3635	1	
CERCLIS ID:	PAN000305679	**Shipped to:**	Bonner Analytical Testing Company 2703 Oak Grove Rd Hattiesburg MS 39402 (601) 264-2854	2	
Spill ID:	AE2			3	
Site Name/State:	37823 - Price Battery OU2 - 092008/PA			4	
Project Leader:	Lucinda Pype				
Action:	Combined RI/FS				
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MC8221	Ground Water/ David Michailof	L/G	DM (14)	005-408 (HNO3) (1)	MW3 DIS	S: 9/30/2008	14:20		Lab QC
MC8222	Ground Water/ David Michailof	L/G	TM/Hg (14)	005-428 (HNO3) (1)	MW3	S: 9/30/2008	14:20	C8222	Lab QC
MC8223	Soil/Sediment/ David Michailof	L/G	ICP Sb, As (14)	005-429 (Ice Only) (1)	KC-SED 2	S: 10/2/2008	9:00		Lab QC

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	MC8223		
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

DM = CLP TAL Dissolved Metals/Hg, ICP Sb, As = ICP Sb, As, Pb, TM/Hg = CLP TAL Total Metals/HG

TR Number: 3-594095470-100208-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

U.S. EPA Region III Analytical Request Form

Revision 10.06

ASO/AB USE ONLY		
RAS#	CT4356	Analytical TAT
DAS#		7/14
NSE#		

37823

Date: 25 August 2008	Site Activity: RI/FS Oversight			
Site Name: Price Battery		Street Address: 251 Grand Street		
City: Hamburg	State: PA	Latitude:	Longitude:	
Program: Superfund	Acct. #: 2008 T03W 302DD2C A3E2BD02		CERCLIS #: PAN000305679	
Site ID: N/A	Spill ID: N/A		Operable Unit: 2	
Site Specific QA Plan Submitted: ☐ No ☒ Yes	Title: Price Battery Operable Unit 2 RI/FS Oversight Draft SMP			Date Approved: 5/12/08
EPA Project Leader: John Banks	Phone#: 215-814-3214	Cell Phone #:	E-mail: banks.john-d@epa.gov	
Request Preparer: Andrea Soo	Phone#: 610 293 0450	Cell Phone #: 610-304-0803	E-mail: sooac@cdm.com	
Site Leader: Lucinda Pype	Phone#: 717-560-7500	Cell Phone #:	E-mail: pypelj@cdm.com	

Contractor: CDM		EPA CO/PO: Melisa Hoffman		
#Samples 34	Matrix: soil	Parameter: Lead, Antimony, and Arsenic	Bonner	Method: ILM05.4 ICP-AES 28183
#Samples 1	Matrix: soil	Parameter: ICP metals + Hg	↓	Method: ILM05.4 ICP-AES 28184
#Samples 10	Matrix: soil	Parameter: TCL VOC	Shraly	Method: SOM01.2, low soil 28186
#Samples 10	Matrix: soil	Parameter: TCL SVOC	↓	Method: SOM01.2, low soil 28187
#Samples 2	Matrix: soil	Parameter: TCL PCB	↓	Method: SOM01.2 28188
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Total)	Bonner	Method: ILM05.4 ICP-AES 28185
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Dissolved)	↓	Method: ILM05.4 ICP-AES
#Samples 2	Matrix: water non-potable	Parameter: TCL VOC	Shraly	Method: SOM01.2, trace water 28189
#Samples 2	Matrix: water non-potable	Parameter: TCL SVOC	↓	Method: SOM01.2, low water 28190

Ship Date From: 9/08/2008 (9/12)	Ship Date To: 10/31/2008	Org. Validation Level M3	Inorg. Validation Level IM2

Unvalidated Data Requested: ☐ No ☒ Yes If Yes, TAT Needed: ☐ 14 days ☒ 7days ☐ 72hrs ☐ 48hrs ☐ 24hrs ☐ Other (Specify) + 3 days for CADRE ESAT

Validated Data Package Due: ☐ 42 days ☐ 30 days ☐ 21days ☐ 14 days ☒ Other (Specify) 28 days 7/25 14/E14

Electronic Data Deliverables Required: ☐ No ☒ Yes (EDDs will be provided in Region 3 EDD Format)

Special Instructions: The unvalidated data is requested via SMO/ESAT – 7 days analytical TAT + 3 days for compliance review = 10 days at no additional cost. Please note that we will be adopting the CLP methods, SOM01.2 and ILM05.4 in place of the PRP's SW846 methods listed in the attached PDF file. Reporting limits required are listed in the attached PDF file in Table 1a under "RL." If there are any reporting limits that cannot be met by the requested methods, please contact Andrea Soo immediately at sooac@cdm.com or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (sooac@cdm.com) and Nancy Forman (FormanNA@cdm.com), and Jonah Jackson (JacksonJM@cdm.com) when available. Quantitation limits are provided in the PDF file that was attached to this lab request.

FORM ARF- 10/06

Appendix D

Laboratory Case Narrative

USEPA - CLP

COVER PAGE

Lab Name: Bonner Analytical Testing Contract: EPW06055

Lab Code: BONNER Case No.: 37823 NRAS No.: SDG No.: MC8223

SOW No.: ILM05.4

EPA SAMPLE NO.	Lab Sample ID:
MC8223	0810040-01
MC8223D	0810040-01DUP
MC8223S	0810040-01MS

		ICP-AES	ICP-MS
Were ICP-AES and ICP interelement corrections applied?	(Yes/No)	Yes	Yes
Were ICP-AES and ICP background corrections applied?	(Yes/No)	Yes	Yes
If yes, were raw data generated before application of background corrections?	(Yes/No)	No	No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance designee, as verified by the following signature.

Signature: Name: Brandon G. Beck For Chris Bonner

Date: 10/16/08 Title: President

Bonner Analytical Testing Company

2703 Oak Grove Road, Hattiesburg, MS 39402
Phone: (601) 264-2854 Fax: (601) 268-7084

SDG NARRATIVE:

SDG Number: MC8223
Case Number: 37823
Contract Number: EPW06055

Sample Receipt:
On October 3, 2008, we received 1 soil sample under FedEx airbill number 7921 1802 3635. Custody seals were present and intact. Cooler temp was determined to be 5°C. Samples were received in good condition with no discrepancies.

Metals
The analytical run began 10/16/2008 @ 1011 hrs. The matrix spike failed for Sb; a post spike was analyzed at twice the CRQL for Sb.

CSF:
No Discrepancies

Sample Equation:

Lab ID 0810040-01 EPA Sample # MC8223

Date & Time 10/16/2008 @ 1107

Metals: 14.25 µg/L * (0.100 L) / (1.00 g) * 100 % / 84.5 % * 1000 g / 1 kg * 1 mg / 1000 µg = 1.7 mg/kg
(Analyte As)

Authorized by _____
Daniel Antrim
Document Control Officer

Bethany Whitehead

From: Bethany Whitehead
Sent: Friday, October 03, 2008 10:59 AM
To: 'Colin Walsh (cwalsh20@fedcsc.com)'
Cc: Chris Bonner
Subject: Region 3 | Case 37823 | Sample Receipt

Colin:

Today we received 2 water samples and 1 soil sample under FedEx airbill number 7921 1802 3635. Custody seals were present and intact. Cooler temp was determined to be 5°C. Samples were received in good condition except for the following discrepancies:

1. The TR/COC states that the water samples are 14 TAT and soil samples are 14 TAT; however, SUPRS states that water samples are 14 TAT and soil samples are 7 TAT. Please advise.

Thanks,

Beth Whitehead
Bonner Analytical

Total Solids/Percent Solids/Moisture by Drying at 105°C

Import Spec. - WC_TS and WC_PMOIST

Analyst:	Test Code: PMOIST
Analyte: PMOIST Dried at 105°C	Units: wt%

Batch ID: 8101617

Calculation: % Solids = ((Dry Pan and Sample Weight - Pan Weight)/(Wet pan and Sample Weight - Pan Weight)) X 100
% Moisture = 100- % Solids

105°C Oven: Fisher Isotemp S/N 70600094
Balance: #9

Import Spec. - WC_TS and WC_PMOIST

Pan #	SampID	Client ID Source ID	SampType	Pan Weight (g)	Wet Pan and Sample Weight (g)	Dry Pan and Sample Weight (g)	Dry Sample Weight (g)	(Time in Oven) AnalDate	(Time out of Oven)	units	% Solids RawVal	% Moisture RawVal	Recovery or RPD	PQL
	0810040-01	MC8223	Sample	1.0300	9.3300	2.3200	1.2900				15.542	84.458		
	8101617-DUP1	0810040-01	Duplicate	1.0000	9.9000	2.6300	1.6300				18.315	81.685		

AR302767

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE : October 31, 2008

SUBJECT: Region III Data QA Review

FROM : Khin Cho Thaung KCT
Region III ESAT RPO (3ES20)

TO : John Banks
Regional Project Manager (3HS22)

Attached is the **inorganic** data validation report for the **Price Battery** site (Case#: **37823**, SDG#: **MC8221, MC8222**) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2743.

Attachments

cc: Andrea Soo (CDM Federal)

TO File #: 0014 TDF#: 1083

Lockheed Martin Enterprise Solutions & Services
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597

LOCKHEED MARTIN
We never forget who we're working for™

Date: October 29, 2008

Subject: Inorganic Data Validation (IM2 Level)
Case: 37823
SDGs : MC8221, MC8222
Site : Price Battery

From: Kurt Roby
Inorganic Data Reviewer

Mahboobeh Mecanic
Senior Oversight Chemist

To: Khin-Cho Thaung
ESAT Region 3 Project Officer

OVERVIEW

Case 37823, Sample Delivery Groups (SDGs) MC8221 and MC8222, consisted of one (1) filtered aqueous sample analyzed for dissolved metals and one (1) unfiltered sample analyzed for total metals, by ICP-AES. The two samples were analyzed by Bonner Analytical Testing Company (BONNER) according to Contract Laboratory Program (CLP) Statement of Work (SOW) ILM05.4 through the Routine Analytical Services (RAS) program.

SUMMARY

Data were validated according to Region III Modifications to the National Functional Guidelines for Inorganic Data Review, Level IM2. Areas of concern with respect to data usability are listed below.

Data in this case have been impacted by outliers present in the laboratory blank analyses. Details of these outliers are discussed under "Minor Problems," specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on the Data Summary Forms (DSFs).

MINOR PROBLEMS

Continuing calibration blanks (CCBs) had reported results greater than the Method Detection Limits (MDLs) for cobalt (Co) and iron (Fe) in SDG MC8221 and cadmium (Cd) and Co in SDG MC8222. Positive results for these analytes in affected samples which are less than or equal to five times (≤5X) the blank concentration may be biased high and have been qualified "B" on the DSFs.

CCBs had negative results greater than the absolute values of the MDLs regarding lead (Pb) and mercury (Hg) in both SDGs MC8221 and MC8222. Quantitation limits for these analytes in both samples may be biased low and have been qualified "UL" on the DSFs.

NOTES

Reported results between MDLs and Contract Required Quantitation Limits (CRQLs) were qualified "J" unless superseded by "B" on the DSFs.

Data for Case 37823, SDGs MC8221 and MC8222, were reviewed in accordance with the National Functional Guidelines for Evaluating Inorganic Analyses with Modifications for use within Region III.

ATTACHMENTS

INFORMATION REGARDING REPORT CONTENT

Table 1A is a summary of qualifiers applied to the laboratory-generated results during data validation.

Table 1A	Summary of qualifiers on data summary forms after data validation
Table 1B	Codes used in comments column of Table 1A
Appendix A	Glossary of Data Qualifier Codes
Appendix B	Data Summary Form(s)
Appendix C	Chain of Custody Records
Appendix D	Laboratory Case Narrative

DCN: 37823_MC8221_MC8222

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

Case 37823, SDG MC8221

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Co	MC8221	B		High	CCB (0.760 J ug/L)
Fe	MC8221	B		High	CCB (5.544 J ug/L)
Pb	MC8221		UL	Low	CBN (-0.931 J ug/L)
Hg	MC8221		UL	Low	CBN (-0.038 J ug/L)

Case 37823, SDG MC8222

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Cd	MC8222	B		High	CCB (0.361 J ug/L)
Co	MC8222	B		High	CCB (0.760 J ug/L)
Pb	MC8222		UL	Low	CBN (-0.931 J ug/L)
Hg	MC8222		UL	Low	CBN (-0.038 J ug/L)

* See explanation of comments in Table 1B

TABLE 1B
CODES USED IN COMMENTS COLUMN

CCB	=	Continuing calibration blanks had results >MDLs [results are in parenthesis]. Positive results which are ≤5X the blank concentrations may be biased high.
CBN	=	Continuing calibration blanks had negative results with absolute values > MDLs [results are in parenthesis]. Quantitation limits may be biased low.

Appendix A

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

Appendix B

Data Summary Forms

Case #: 37823 SDG : MC8221 Number of Soil Samples : 0
Site : PRICE BATTERY Number of Water Samples : 1
Lab. : BONNER

Dissolved Metals

Sample Number :		MC8221									
Sampling Location :		MW3 DIS									
Matrix :		Water									
Units :		ug/L									
Date Sampled :		9/30/2008									
Time Sampled :		14:20									
Dilution Factor :		1.0									
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200										
ANTIMONY	60										
*ARSENIC	10										
BARIUM	200	32.9	J								
BERYLLIUM	5										
*CADMIUM	5										
CALCIUM	5000	26000									
*CHROMIUM	10										
COBALT	50	1.1	B								
COPPER	25	1.3	J								
IRON	100	15.5	B								
*LEAD	10		UL								
MAGNESIUM	5000	11000									
MANGANESE	15	170									
MERCURY	0.2		UL								
*NICKEL	40	1.4	J								
POTASSIUM	5000	2290	J								
SELENIUM	35										
SILVER	10										
SODIUM	5000	16500									
THALLIUM	25										
VANADIUM	50										
ZINC	60	6.6	J								

CRQL = Contract Required Quantitation Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) Revised 09/99

Case #: 37823 SDG : MC8222 Number of Soil Samples : 0
Site : PRICE BATTERY Number of Water Samples : 1
Lab. : BONNER

Total Metals

Sample Number :		MC8222									
Sampling Location :		MW3									
Matrix :		Water									
Units :		ug/L									
Date Sampled :		9/30/2008									
Time Sampled :		14:20									
Dilution Factor :		1.0									
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	180	J								
ANTIMONY	60										
*ARSENIC	10										
BARIUM	200	33.7	J								
BERYLLIUM	5										
*CADMIUM	5	0.093	B								
CALCIUM	5000	25900									
*CHROMIUM	10										
COBALT	50	1.2	B								
COPPER	25	0.86	J								
IRON	100	292									
*LEAD	10		UL								
MAGNESIUM	5000	11100									
MANGANESE	15	173									
MERCURY	0.2		UL								
*NICKEL	40	1.5	J								
POTASSIUM	5000	2290	J								
SELENIUM	35										
SILVER	10										
SODIUM	5000	16800									
THALLIUM	25										
VANADIUM	50										
ZINC	60	5.2	J								

CRQL = Contract Required Quantitation Limit *Action Level Exists SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) Revised 09/99

Appendix C

Chain of Custody Records

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 37823 **R**
DAS No:

Region:	3	**Date Shipped:**	10/2/2008	**Chain of Custody Record**	**Sampler Signature:**
Project Code:	CT4356	**Carrier Name:**	FedEx	**Relinquished By (Date / Time)**	**Received By (Date / Time)**
Account Code:		**Airbill:**	7921 1802 3635	1	
CERCLIS ID:	PAN000305679	**Shipped to:**	Bonner Analytical Testing Company 2703 Oak Grove Rd Hattiesburg MS 39402 (601) 264-2854	2	
Spill ID:	AE2			3	
Site Name/State:	37823 - Price Battery OU2 - 092008/PA			4	
Project Leader:	Lucinda Pype				
Action:	Combined RI/FS				
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MC8221	Ground Water/ David Michailof	L/G	DM (14)	005-408 (HNO3) (1)	MW3 DIS	S: 9/30/2008	14:20		Lab QC
MC8222	Ground Water/ David Michailof	L/G	TM/Hg (14)	005-428 (HNO3) (1)	MW3	S: 9/30/2008	14:20	C8222	Lab QC
MC8223	Soil/Sediment/ David Michailof	L/G	ICP Sb, As (14)	005-429 (Ice Only) (1)	KC-SED 2	S: 10/2/2008	9:00		Lab QC

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
	MC8223		
Analysis Key:	**Concentration:** L = Low, M = Low/Medium, H = High	**Type/Designate:** Composite = C, Grab = G	**Shipment Iced?** _____

DM = CLP TAL Dissolved Metals/Hg, ICP Sb, As = ICP Sb, As, Pb, TM/Hg = CLP TAL Total Metals/HG

TR Number: 3-594095470-100208-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

JTS 9-2-08

U.S. EPA Region III Analytical Request Form

Revision 10.06

ASQAB USE ONLY		
RAS#	CT4356	Analytical TAT
DAS#		T 14
NSF#		

37823

Date: 25 August 2008	Site Activity: RI/FS Oversight		
Site Name: Price Battery	Street Address: 251 Grand Street		
City: Hamburg	State: PA	Latitude:	Longitude:
Program: Superfund	Acct. #: 2008 T03 302DD2C A3E2BD02	CERCLIS #: PAN000305679	
Site ID: N/A	Spill ID: N/A	Operable Unit: 2	
Site Specific QA Plan Submitted: ☐ No ☒ Yes	Title: Price Battery Operable Unit 2 RI/FS Oversight Draft SMP		Date Approved: 5/12/08
EPA Project Leader: John Banks	Phone#: 215-814-3214	Cell Phone #:	E-mail: banks.john-d@epa.gov
Request Preparer: Andrea Soo	Phone#: 610 293 0450	Cell Phone #: 610-304-0803	E-mail: sooac@cdm.com
Site Leader: Lucinda Pype	Phone#: 717-560-7500	Cell Phone #:	E-mail: pypelj@cdm.com
Contractor: CDM	EPA CO/PO: Melisa Hoffman		

#Samples 34	Matrix: soil	Parameter: Lead, Antimony, and Arsenic	Bonner	Method: ILM05.4 ICP-AES 25183
#Samples 1	Matrix: soil	Parameter: ICP metals + Hg	↓	Method: ILM05.4 ICP-AES 25184
#Samples 10	Matrix: soil	Parameter: TCL VOC	Shealy	Method: SOM01.2, low soil 25186
#Samples 10	Matrix: soil	Parameter: TCL SVOC	↓	Method: SOM01.2, low soil 25187
#Samples 2	Matrix: soil	Parameter: TCL PCB	↓	Method: SOM01.2 25188
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Total)	Bonner	Method: ILM05.4 ICP-AES 25185
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Dissolved)	↓	Method: ILM05.4 ICP-AES
#Samples 2	Matrix: water non-potable	Parameter: TCL VOC	Shealy	Method: SOM01.2, trace water 25189
#Samples 2	Matrix: water non-potable	Parameter: TCL SVOC	↓	Method: SOM01.2, low water 25190

Ship Date From: 9/08/2008 (9/12)	Ship Date To: 10/31/2008	Org. Validation Level M3	Inorg. Validation Level IM2

Unvalidated Data Requested: ☐ No ☒ Yes If Yes, TAT Needed: ☐ 14 days ☒ 7days ☐ 72hrs ☐ 48hrs ☐ 24hrs ☐ Other (Specify) + 3 days for CADRE ESAT

Validated Data Package Due: ☐ 42 days ☐ 30 days ☐ 21days ☐ 14 days ☒ Other (Specify) 28 days 7/ESAT 14/ESAT

Electronic Data Deliverables Required: ☐ No ☒ Yes (EDDs will be provided in Region 3 EDD Format)

Special Instructions: The unvalidated data is requested via SMO/ESAT – 7 days analytical TAT + 3 days for compliance review = 10 days at no additional cost. Please note that we will be adopting the CLP methods, SOM01.2 and ILM05.4 in place of the PRP's SW846 methods listed in the attached PDF file. Reporting limits required are listed in the attached PDF file in Table 1a under "RL." If there are any reporting limits that cannot be met by the requested methods, please contact Andrea Soo immediately at sooac@cdm.com or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (sooac@cdm.com) and Nancy Forman (FormanNA@cdm.com), and Jonah Jackson (JacksonJM@cdm.com) when available. Quantitation limits are provided in the PDF file that was attached to this lab request.

FORM ARF- 10/06

Appendix D

Laboratory Case Narrative

SDG MC8221

USEPA - CLP

COVER PAGE

Lab Name: Bonner Analytical Testing Contract: EPW06055

Lab Code: BONNER Case No.: 37823 NRAS No.: _____ SDG No.: MC8221

SOW No.: ILM05.4

EPA SAMPLE NO.	Lab Sample ID:
MC8221	0810037-01
MC8221D	0810037-01DUP
MC8221S	0810037-01MS

		ICP-AES	ICP-MS
Were ICP-AES and ICP interelement corrections applied?	(Yes/No)	Yes	Yes
Were ICP-AES and ICP background corrections applied?	(Yes/No)	Yes	Yes
If yes, were raw data generated before application of background corrections?	(Yes/No)	No	No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance designee, as verified by the following signature.

Signature: _____ Name: Brandon G. Beck For Chris Bonner

Date: 10/16/08 Title: President

Bonner Analytical Testing Company

2703 Oak Grove Road, Hattiesburg, MS 39402
Phone: (601) 264-2854 Fax: (601) 268-7084

SDG NARRATIVE:

SDG Number: MC8221
Case Number: 37823
Contract Number: EPW06055

Sample Receipt:
On October 3, 2008, we received 1 water sample under FedEx airbill number 7921 1802 3635. Custody seals were present and intact. Cooler temp was determined to be 5°C. Samples were received in good condition with no discrepancies.

Metals
The analytical run began 10/16/2008 @ 1147 hrs. The sample introduction tubing came loose during the closing CCV causing it to fail; since there was room left in the analytical sequence, the run was stopped, the tubing was reattached and the closing QC was reanalyzed.

Mercury
The analytical run began 10/07/2008 @ 1342 hrs. S0.5 was not used in the calibration curve.

CSF:
No Discrepancies

Sample Equation:

Lab ID 0810037-01 EPA Sample # MC8221

Date & Time 10/16/2008@1306

Metals: 26011 µg/L * 1 (Dilution Factor) = 26,000 µg/L
(Analyte Ca)

Date & Time 10/07/2008@1407

Hg: -0.0060 µg/L * 1 (Dilution Factor) = -0.0060 µg/L (CRQL reported)

Authorized by _____
Daniel Antrim
Document Control Officer

Bonner Analytical Testing Company

98

Corrective Action

04268

Topic: MC8221 & MC08223 Date: 10/14/08

Nature of Problem: While running the closing QC the sample introduction line came loose causing the CCV to fail for everything.

Action Requested:

1 New Sample Requested: YES ~~NO~~

2 Retest or Reanalysis Necessary: YES ~~NO~~

3 Other Action: _____

Submitter

Signature: [signature] Date: 10/14/08

Corrective Action Taken: Since there was run left in the analytical sequence the run was stopped, tubing reattached & the full closing QC was reanalyzed

Was the problem resolved: YES NO

Responder

Signature: [signature] Date: 10/16/2008

SDG MC8222

USEPA - CLP

COVER PAGE

Lab Name: Bonner Analytical Testing Contract: EPW06055

Lab Code: BONNER Case No.: 37823 NRAS No.: SDG No.: MC8222

SOW No.: ILM05.4

EPA SAMPLE NO.	Lab Sample ID:
MC8222	0810039-01
MC8222D	0810039-01DUP
MC8222S	0810039-01MS

		ICP-AES	ICP-MS
Were ICP-AES and ICP interelement corrections applied?	(Yes/No)	Yes	Yes
Were ICP-AES and ICP background corrections applied?	(Yes/No)	Yes	Yes
If yes, were raw data generated before application of background corrections?	(Yes/No)	No	No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance designee, as verified by the following signature.

Signature: Name: Brandon G. Beck For Chris Bonner

Date: 10/14/08 Title: President

Bonner Analytical Testing Company

2703 Oak Grove Road, Hattiesburg, MS 39402
Phone: (601) 264-2854 Fax: (601) 268-7084

SDG NARRATIVE:

SDG Number: MC8222
Case Number: 37823
Contract Number: EPW06055

Sample Receipt:
On October 3, 2008, we received 1 water sample under FedEx airbill number 7921 1802 3635. Custody seals were present and intact. Cooler temp was determined to be 5°C. Samples were received in good condition with no discrepancies.

Metals
The analytical run began 10/16/2008 @ 1147 hrs. The sample introduction line became loose during the analysis of the closing QC causing the CCV to fail for everything; since there was room in the analytical sequence, the run was stopped, the tubing was replaced and full closing QC was analyzed.

Mercury
No Discrepancies

CSF:
No Discrepancies

Sample Equation:

Lab ID 08/0039-01 EPA Sample # MC8222

Date & Time 10/16/2008@1242

Metals: 180.27 µg/L * 1 (Dilution Factor) = 180 µg/L
(Analyte Al)

Date & Time 10/07/2008@1413

Hg: -0.0295 µg/L * 1 (Dilution Factor) = -0.030 µg/L (CRQL reported)

Authorized by
Daniel Antrim
Document Control Officer

Bonner Analytical Testing Company

99

Corrective Action

04268

Topic: MC8221 & MC08223 Date: 10/10/08

Nature of Problem: While running the closing CC the sample introduction line came loose causing the CCV to fail for everything.

Action Requested:

1 New Sample Requested: YES (NO)

2 Retest or Reanalysis Necessary: YES (NO)

3 Other Action: _____

Submitter

Signature: [signature] Date: 10/10/08

Corrective Action Taken: Since there was run left in the analytical sequence the run was stopped, tubing reattached & the full closing CC was reanalyzed

Was the problem resolved: (YES) NO

Responder

Signature: [signature] Date: 10/10/2008

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
ENVIRONMENTAL SCIENCE CENTER
701 MAPES ROAD
FORT MEADE, MARYLAND 20755-5350

DATE : October 30, 2008

SUBJECT: Region III Data QA Review

FROM : Khin-Cho Thaung KCT
Region III ESAT RPO (3ES20)

TO : John Banks
Regional Project Manager (3HS22)

Attached is the inorganic data validation report for the Price Battery site (Case #: 37823 SDG# MC0050) completed by the Region 111 Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2743.

Attachments

cc: Andrea Soo (CDM Federal)

TO File #: 0014 TDF# 1058

Lockheed Martin Enterprise Solutions & Services
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597

LOCKHEED MARTIN
We never forget who we're working for™

Date: October 21, 2008

Subject: Inorganic Data Validation (IM2 Level)
Case: 37823
SDG : MC0050
Site : Price Battery

From: Kurt Roby
Inorganic Data Reviewer

Mahboobeh Mecanic
Senior Oversight Chemist

To: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Case 37823, Sample Delivery Group (SDG) MC0050, consisted of four (4) soil samples analyzed for total metals by ICP-AES. Samples were analyzed by Bonner Analytical Testing Company (BONNER) according to the Contract Laboratory Program (CLP) Statement of Work (SOW) ILM05.4 through the Routine Analytical Services (RAS) program.

SUMMARY

Data were validated according to Region III Modifications to the National Functional Guidelines for Inorganic Data Review, Level IM2. Areas of concern with respect to data usability are listed below.

Data in this case have been impacted by outliers present in laboratory blank, ICP serial dilution, laboratory duplicate, matrix spike and laboratory control sample analyses. Details of these outliers are discussed under "Minor Problems," specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on the Data Summary Form (DSF).

MINOR PROBLEMS

A continuing calibration blank (CCB) had reported a result greater than the Method Detection Limit (MDL) for cadmium (Cd). Positive results for this analyte in affected samples which are less than or equal to five times (≤5X) the blank concentration may be biased high and have been qualified "B" on the DSF.

Percent differences (%Ds) in the ICP serial dilution analyses were outside the control limit (>10%) for aluminum (Al), barium (Ba), beryllium (Be), calcium (Ca), chromium (Cr), cobalt (Co), copper (Cu), iron (Fe), lead (Pb), magnesium (Mg), manganese (Mn), nickel (Ni), potassium (K), vanadium (V) and zinc (Zn). Positive results for these analytes in all samples are estimated due to possible matrix interferences and have been qualified "J" on the DSF.

The relative percent difference (RPD) in the laboratory duplicate analysis was outside control limits (35% RPD, ±2XCRQL) for Mn. Positive results for this analyte in all samples are estimated and have been qualified "J" on the DSF.

Matrix spike recoveries were low (<75% but >30%) for arsenic (As), Cd, selenium (Se), silver (Ag) and Zn. In the case of antimony (Sb), recovery was extremely low (<30%). Low recoveries may be attributed to matrix interferences or analyte lost during the digestion process. Positive results for these analytes in affected samples may be biased low or extremely low and were qualified "L" unless superseded by "B" or "J" on the DSF. The quantitation limits for Ag in samples MC0050 and MC8204 may be biased low and have been qualified "UL" on the DSF.

The laboratory control sample spike recovery was below the EPA established control limit (<80%) for Ba. The "L" qualifier for positive results for this analyte was superseded by "J" on the DSF.

NOTES

The post-digestion spike recoveries were low (<75% but >30%) for Sb, As and Se; however, data are not qualified based on the post-digestion spike recovery. Post-digestion recoveries for Cd, Ag and Zn reported results within QC limits.

Reported results between MDLs and Contract Required Quantitation Limits (CRQLs) were qualified "J" unless superseded by "B" on the DSFs.

Data for Case 37823, SDG MC0050, were reviewed in accordance with the National Functional Guidelines for Evaluating Inorganic Analyses with Modifications for use within Region III.

ATTACHMENTS

INFORMATION REGARDING REPORT CONTENT

Table 1A is a summary of qualifiers applied to the laboratory-generated results during data validation.

Table 1A	Summary of qualifiers on data summary forms after data validation
Table 1B	Codes used in comments column of Table 1A
Appendix A	Glossary of Data Qualifier Codes
Appendix B	Data Summary Form(s)
Appendix C	Chain of Custody Records
Appendix D	Laboratory Case Narrative

DCN: 37823_MC0050

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

Case 37823, SDG MC0050

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Al	All samples	J			ISD (23%)
Sb	MC81Y1	L		Low	MSEL (12%)
	MC0050, MC8201, MC8204	J			>MDL<CRQL MSEL (12%)
As	All samples	L		Low	MSL (70%)
Ba	All samples	J			ISD (24%) LCSL (9%)
Be	All samples	J			ISD (12%)
Cd	MC0050, MC8201	B		High	CCB (0.266 J ug/L) MSL (74%)
	MC81Y1, MC8204	J			>MDL<CRQL MSL (74%)
Ca	All samples	J			ISD (25%)
Cr	All samples	J			ISD (16%)
Co	All samples	J			ISD (30%)
Cu	All samples	J			ISD (23%)
Fe	All samples	J			ISD (29%)
Pb	All samples	J			ISD (34%)
Mg	All samples	J			ISD (25%)
Mn	All samples	J			ISD (25%) DUP (36%)
Ni	All samples	J			ISD (28%)

* See explanation of comments in Table 1B

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

Case 37823, SDG MC0050

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
K	All samples	J			ISD (25%)
Se	All samples	J			>MDL<CRQL MSL (60%)
Ag	MC0050, MC8204		UL	Low	MSL (57%)
	MC81Y1, MC8201	J			>MDL<CRQL MSL (57%)
V	All samples	J			ISD (15%)
Zn	All samples	J			ISD (31%) MSL (73%)

* See explanation of comments in Table 1B

TABLE 1B
CODES USED IN COMMENTS COLUMN

ISD	=	Percent differences (%Ds) in the ICP serial dilution analysis were outside the control limit (>10%) [%Ds are in parenthesis]. Positive results are estimated.
MSEL	=	Matrix spike recovery was extremely low (<30%) [percent recovery is in parenthesis]. Positive results may be biased extremely low.
>MDL<CRQL	=	Reported results are greater than MDLs but less than CRQLs and are considered estimated.
MSL	=	Matrix spike recoveries were low (<75% but >30%) [percent recoveries are in parenthesis]. Positive results and quantitation limits may be biased low.
LCSL	=	Laboratory control spike recovery was low (<80%) [percent recovery is in parenthesis]. Positive results may be biased low.
CCB	=	A continuing calibration blank had a result >MDL [result is in parenthesis]. Positive results which are $\leq$5X the blank concentration may be biased high.
DUP	=	The relative percent difference (RPD) for the laboratory duplicate analysis was outside the control limit (35% RPD, $\pm$2XCRQL) [percent recovery is in parenthesis]. Positive results are to be considered estimates.

Appendix A

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

Appendix B

Data Summary Forms

DATA SUMMARY FORM: INORGANIC

Case #: 37823 SDG : MC0050 Number of Soil Samples : 4
Site : PRICE BATTERY Number of Water Samples : 0
Lab. : BONNER

Sample Number :		MC0050		MC81Y1		MC8201		MC8204			
Sampling Location :		MP45-33		BW1-9		BW8-9		PL3-9			
Matrix :		Soil		Soil		Soil		Soil			
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg			
Date Sampled :		9/18/2008		9/22/2008		9/24/2008		9/24/2008			
Time Sampled :		14:55		16:05		08:20		09:30			
%Solids :		77.3		84.8		84.0		88.2			
Dilution Factor :		1.0		1.0		1.0		1.0			
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	20	14900	J	2940	J	7000	J	8110	J		
ANTIMONY	6	0.48	J	54.6	L	2.3	J	2.1	J		
ARSENIC	1	4.0	L	13.7	L	56.0	L	9.4	L		
BARIUM	20	123	J	44.2	J	79.8	J	101	J		
BERYLLIUM	0.5	0.86	J	0.22	J	0.28	J	0.66	J		
CADMIUM	0.5	0.032	B	0.26	J	0.073	B	0.32	J		
CALCIUM	500	2030	J	47200	J	13800	J	18900	J		
CHROMIUM	1	15.4	J	22.2	J	15.7	J	8.1	J		
COBALT	5	10.1	J	4.1	J	8.6	J	5.3	J		
COPPER	2.5	15.1	J	141	J	51.2	J	57.8	J		
IRON	10	19500	J	18900	J	47800	J	23100	J		
LEAD	1	45.0	J	1790	J	104	J	184	J		
MAGNESIUM	500	2070	J	3170	J	2920	J	4710	J		
MANGANESE	1.5	1230	J	269	J	940	J	260	J		
MERCURY	0.1	0.11	J	0.086	J	0.14		0.20			
NICKEL	4	14.8	J	12.4	J	13.4	J	10.6	J		
POTASSIUM	500	1050	J	355	J	829	J	1530	J		
SELENIUM	3.5	2.1	J	1.8	J	1.6	J	1.7	J		
SILVER	1		UL	0.34	J	0.31	J		UL		
SODIUM	500	77.4	J	70.9	J	64.4	J	233	J		
THALLIUM	2.5										
VANADIUM	5	22.9	J	12.6	J	33.4	J	17.4	J		
ZINC	6	52.3	J	47.2	J	37.7	J	68.5	J		

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100) Revised 09/99

Appendix C

Chain of Custody Records

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	Date Shipped:	9/25/2008	Chain of Custody Record	Sampler Signature:
Project Code:	CT4356	Carrier Name:	FedEx		
Account Code:		Airbill:	792113123305	Relinquished By (Date/Time)	Received By (Date/Time)
CERCLIS ID:		Shipped to:	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC0050	Soil (>12")/ David Michailof	2	TM/Hg (14)	006-389 (Ice Only) (1)	MP45-33	S: 09/18/2008 14:55	--
MC0068	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-301 (Ice Only) (1)	WH13-18	S: 09/19/2008 11:20	--
MC0070	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-307 (Ice Only) (1)	WH7-09	S: 09/22/2008 10:30	--
MC0071	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-313 (Ice Only) (1)	WH2-33	S: 09/22/2008 11:25	--
MC81W8	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-314 (Ice Only) (1)	WH12-09	S: 09/19/2008 10:25	--
MC81W9	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-315 (Ice Only) (1)	WH12-33	S: 09/19/2008 10:45	--

Rec'd 10-10-08 JTS MC0050 TM&Hg

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?**

ICP Sb, As = ICP Sb, As, Pb&TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-594095470-092508-0001

AR302801

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	Date Shipped:	9/25/2008	**Chain of Custody Record**	Sampler Signature:
Project Code:	CT4356	Carrier Name:	FedEx		
Account Code:		Airbill:	792113123305	Relinquished By (Date/Time)	Received By (Date/Time)
CERCLIS ID:		Shipped to:	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC81X6	Soil (>12")/ David Michailofv	2	ICP Sb, As (14)	006-322 (Ice Only) (1)	WH2-81	S: 09/22/2008 12:20	-
MC81X7	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-323 (Ice Only) (1)	WH5-9	S: 09/22/2008 14:44	-
MC81X8	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-324 (Ice Only) (1)	WH5-33	S: 09/22/2008 14:52	-
MC81X9	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-325 (Ice Only) (1)	BW1-21	S: 09/22/2008 16:10	-
MC81Y0	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-326 (Ice Only) (1)	BW1-33	S: 09/22/2008 16:15	-
MC81Y1	Soil (>12")/ David Michailof	2	TM/Hg (14)	006-327 (Ice Only) (1)	BW1-9	S: 09/22/2008 16:05	-

rec'd 10-10-08 JTS MC0050 TM+Hg

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

ICP Sb, As = ICP Sb, As, Pb; TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-594095470-092508-0001

AR302802

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	Date Shipped:	9/25/2008	Chain of Custody Record	Sampler Signature:
Project Code:	CT4356	Carrier Name:	FedEx		
Account Code:		Airbill:	792113123305	Relinquished By (Date/Time)	Received By (Date/Time)
CERCLIS ID:		Shipped to:	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC81Y2	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-328 (Ice Only) (1)	WH5-57	S: 09/22/2008 15:10	--
MC81Y3	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-329 (Ice Only) (1)	WH5-81	S: 09/22/2008 15:20	--
MC81Z8	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	005-364 (Ice Only) (1)	BW5-21	S: 09/23/2008 11:10	--
MC81Z9	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	005-365 (Ice Only) (1)	BW5-33	S: 09/23/2008 11:20	--
MC8200	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	005-366 (Ice Only) (1)	BW5-9	S: 09/23/2008 11:00	--
MC8201	Soil (>12")/ David Michailof	2	TM/Hg (14)	005-367 (Ice Only) (1)	BW8-9	S: 09/24/2008 08:20	--

Rec'd 10-10-08 JTS TM+Hg MC0050

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: Concentration : L = Low, M = Medium, H = High, L/M = Low/Medium Type/Designate : Composite = C, Grab = G, Both = B Shipment Iced? ____

ICP Sb, As = ICP Sb, As, Pb, TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-594095470-092508-0001

AR302803

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	Date Shipped:	9/25/2008	Chain of Custody Record	Sampler Signature:
Project Code:	CT4356	Carrier Name:	FedEx		
Account Code:		Airbill:	792113123305	Relinquished By (Date/Time)	Received By (Date/Time)
CERCLIS ID:		Shipped to:	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC8202	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	005-377 (Ice Only) (1)	BW8-21	S: 09/24/2008 08:30	--
MC8203	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	005-378 (Ice Only) (1)	BW8-33	S: 09/24/2008 08:40	--
MC8204	Soil (>12")/ David Michailof	2	TM/Hg (14)	005-379 (Ice Only) (1)	PL3-9	S: 09/24/2008 09:30	--
MC8205	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-385 (Ice Only) (1)	MP41-33	S: 09/18/2008 11:41	--
MC8206	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-386 (Ice Only) (1)	MP41-57	S: 09/18/2008 11:49	--
MC8207	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-387 (Ice Only) (1)	MP41-81	S: 09/18/2008 11:55	--

Rec'd 10-10-08 JTS TM+Hg MC0050

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:.	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: Concentration : L = Low, M = Medium, H = High, L/M = Low/Medium Type/Designate : Composite = C, Grab = G, Both = B Shipment Iced?

ICP Sb, As = ICP Sb, As, Pb, TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-594095470-092508-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

AR302804

JTS 9-2-08

U.S. EPA Region III Analytical Request Form

Revision 10.06

ASQAB USE ONLY		
RAS#	CT4356	Analytical TAT
DAS#		T14
NSF#		

37823

Date: 25 August 2008	Site Activity: RI/FS Oversight		
Site Name: Price Battery		Street Address: 251 Grand Street	
City: Hamburg	State: PA	Latitude:	Longitude:
Program: Superfund	Acct. #: 2008 T03N 302DD2C A3E2BD02	CERCLIS #: PAN000305679	
Site ID: N/A	Spill ID: N/A	Operable Unit: 2	
Site Specific QA Plan Submitted: ☐ No ☒ Yes	Title: Price Battery Operable Unit 2 RI/FS Oversight Draft SMP		Date Approved: 5/12/08
EPA Project Leader: John Banks	Phone#: 215-814-3214	Cell Phone #:	E-mail: banks.john-d@epa.gov
Request Preparer: Andrea Soo	Phone#: 610 293 0450	Cell Phone #: 610-304-0803	E-mail: sooac@cdm.com
Site Leader: Lucinda Pype .	Phone#: 717-560-7500	Cell Phone #:	E-mail: pypelj@cdm.com

Contractor: CDM		EPA CO/PO: Melisa Hoffman		
#Samples 34	Matrix: soil	Parameter: Lead, Antimony, and Arsenic	Bonnee	Method: ILM05.4 ICP-AES 28183
#Samples 1	Matrix: soil	Parameter: ICP metals + Hg	↓	Method: ILM05.4 ICP-AES 28184
#Samples 10	Matrix: soil	Parameter: TCL VOC	Shirley	Method: SOM01.2, low soil 28186
#Samples 10	Matrix: soil	Parameter: TCL SVOC	↓	Method: SOM01.2, low soil 28187
#Samples 2	Matrix: soil	Parameter: TCL PCB	↓	Method: SOM01.2 28195
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Total)	Bonnee	Method: ILM05.4 ICP-AES 28185
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Dissolved)	↓	Method: ILM05.4 ICP-AES
#Samples 2	Matrix: water non-potable	Parameter: TCL VOC	Shirley	Method: SOM01.2, trace water 28189
#Samples 2	Matrix: water non-potable	Parameter: TCL SVOC	↓	Method: SOM01.2, low water 28190

Ship Date From: 9/08/2008 (9/12)	Ship Date To: 10/31/2008	Org. Validation Level M3	Inorg. Validation Level IM2

Unvalidated Data Requested: ☐ No ☒ Yes If Yes, TAT Needed: ☐ 14 days ☒ 7days ☐ 72hrs ☐ 48hrs ☐ 24hrs ☐ Other (Specify) + 3 days for CADRE ESAT

Validated Data Package Due: ☐ 42 days ☐ 30 days ☐ 21days ☐ 14 days ☒ Other (Specify) 28 days ~~7/21~~ 14/E14

Electronic Data Deliverables Required: ☐ No ☒ Yes (EDDs will be provided in Region 3 EDD Format)

Special Instructions: The unvalidated data is requested via SMO/ESAT – 7 days analytical TAT + 3 days for compliance review = 10 days at no additional cost. Please note that we will be adopting the CLP methods, SOM01.2 and ILM05.4 in place of the PRP's SW846 methods listed in the attached PDF file. Reporting limits required are listed in the attached PDF file in Table 1a under "RL." If there are any reporting limits that cannot be met by the requested methods, please contact Andrea Soo immediately at sooac@cdm.com or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (sooac@cdm.com) and Nancy Forman (FormanNA@cdm.com), and Jonah Jackson (JacksonJM@cdm.com) when available. Quantitation limits are provided in the PDF file that was attached to this lab request.

Appendix D

Laboratory Case Narrative

USEPA - CLP

COVER PAGE

Lab Name: Bonner Analytical Testing Contract: EPW06055

Lab Code: BONNER Case No.: 37823 NRAS No.: SDG No.: MC0050

SOW No.: ILM05.4

EPA SAMPLE NO.	Lab Sample ID:
MC0050	0809330-01
MC0050D	0809330-01DUP
MC0050S	0809330-01MS
MC81Y1	0809330-02
MC8201	0809330-03
MC8204	0809330-04

		ICP-AES	ICP-MS
Were ICP-AES and ICP interelement corrections applied?	(Yes/No)	Yes	Yes
Were ICP-AES and ICP background corrections applied?	(Yes/No)	Yes	Yes
If yes, were raw data generated before application of background corrections?	(Yes/No)	No	No

Comments:

Al, Ba, Be, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Ni, K, V, & Zn were flagged as "E" estimated due to interferences occuring during the analysis of the Serial Dilution.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance designee, as verified by the following signature.

Signature: Name: Brandon G. Beck For Chris Bonner

Date: 10/02/08 Title: President

Bonner Analytical Testing Company

2703 Oak Grove Road, Hattiesburg, MS 39402
Phone: (601) 264-2854 Fax: (601) 268-7084

SDG NARRATIVE:

SDG Number: MC0050
Case Number: 37823
Contract Number: EPW06055

Sample Receipt:
On September 26, 2008, we received 4 soil samples under FedEx airbill number 7921 1312 3305. Custody seals were present and intact. Cooler temp was determined to be 5 C. Samples were received in good condition except for the following discrepancies:

1. No QCs are listed on the TR/COC. We would like to use the following if acceptable:

SDG	QC
MC0050	MC0050
MC0068	MC0068
MC8200	MC8200

Resolution: In accordance with previous direction from Region 3, the laboratory will select a sample for laboratory QC as long as the sample is not a PE, blank, or rinsate sample. The laboratory will note the issue in the Case/SDG Narrative, notify the SMO coordinator of the sample selected for laboratory QC, and proceed with the analysis of the samples. SMO will note that the laboratory selected samples MC0050 (SDG MC0050), MC0068 (SDG MC0068), and MC8200 (SDG MC8200) as laboratory QC.

Metals
The analytical run began 9/30/2008 @ 1227 hrs. The matrix spike failed for Sb, As, Cd, Se, Ag and Zn; a post spike was analyzed at twice the CRQL for Sb, Cd, Se and Ag and at twice the indigenous level for As and Zn.

Mercury
The analytical run began 9/29/2008 @ 1404 hrs. S0.5 was not used in the calibration curve.

CSF:
No Discrepancies

Sample Equation:
Lab ID 0809330-02 EPA Sample # MC81Y1

Date & Time 9/30/2008@1353

Metals: 24923 µg/L * (0.100 L) * 100 % * 1000 g * 1 mg = 2940 mg/Kg
(Analyte Al) (1.00 g) 84.8 % 1 kg 1000 µg

Date & Time 9/29/2008@1511

Hg: 0.1462 µg/L * (0.100 L) * 100 % * 1000 g * 1 mg = 0.086 mg/Kg
(0.20 g) 84.8 % 1 kg 1000 µg

Authorized by
Daniel Antrim
Document Control Officer

Bonner Analytical Testing Company

Total Solids

SDG No: MC0050 Case No.: 37823 Batch No.:

Date Began: 09/29/08 Time Began: 13:58 Temperature Began: 102.0

Date Finished: 09/30/08 Time Finished 08:20 Temperature Finished: 104.5

EPA Sample ID	MC0050		MC81Y1	MC8201	MC8204						
Laboratory ID	0809330-01		0809330-02	0809330-03	0809330-04						
Pan ID	1	1	2	3	4	5	6	7	8	9	10
Pan Weight	1.02	1.02	0.99	0.99	1.01						
Pan + Sample (Initial)	8.47	8.62	8.37	7.31	8.46						
Sample Weight (initial)	7.45	7.60	7.38	6.32	7.45	0.00	0.00	0.00	0.00	0.00	0.00
Pan + Sample (Final)	6.78	6.99	7.25	6.30	7.58						
Sample Weight (Final)	5.76	5.97	6.26	5.31	6.57	0.00	0.00	0.00	0.00	0.00	0.00
Total Solids	77.3%	78.6%	84.8%	84.0%	88.2%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
% RSD	1.59%										

Sample ID										
Laboratory ID										
Pan ID	11	12	13	14	15	16	17	18	19	20
Pan Weight										
Pan + Sample (Initial)										
Sample Weight (initial)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pan + Sample (Final)										
Sample Weight (Final)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Solids	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Weighed By ASE Date: 9/29/2008

Analyst: BAK Date: 9/30/2008

Supervisor: CMB Date: 10/6/2008

Bethany Whitehead

From: Walsh, Colin [cwalsh20@fedcsc.com]
Sent: Friday, September 26, 2008 11:38 AM
To: Bethany Whitehead
Cc: Chris Bonner; slizys.dan@epa.gov; Harris.Carroll@epamail.epa.gov; thaung.khin-cho@epa.gov; kwedar.john@epa.gov
Subject: Region 03 | Case 37823 | Lab BONNER | Issue Insufficient/inappropriate designation of laboratory QC | FINAL

Beth,

Summary Start
Issue: Laboratory QC is not designated on the TR/COC; however, the Scheduling Notification Form lists that laboratory QC is required. The laboratory would like to select samples MC0050 (SDG MC0050), MC0068 (SDG MC0068), and MC8200 (SDG MC8200) as laboratory QC.

Resolution: In accordance with previous direction from Region 3, the laboratory will select a sample for laboratory QC as long as the sample is not a PE, blank, or rinsate sample. The laboratory will note the issue in the Case/SDG Narrative, notify the SMO coordinator of the sample selected for laboratory QC, and proceed with the analysis of the samples.
SMO will note that the laboratory selected samples MC0050 (SDG MC0050), MC0068 (SDG MC0068), and MC8200 (SDG MC8200) as laboratory QC.
Summary End

Please let me know if you have any further questions or problems.

Thanks,

Colin

Colin G. Walsh
Environmental Coordinator - Region 3
CSC

15000 Conference Center Drive, Chantilly, VA 20151
Civil Division | (p) 703-818-4544 | (f) 703-818-4602 | cwalsh20@fedcsc.com | www.csc.com

From: Bethany Whitehead [mailto:bwhitehead@batco.com]
Sent: Friday, September 26, 2008 1:11 PM
To: Walsh, Colin
Cc: Chris Bonner
Subject: Region 3 | Case 37823 | Sample Receipt

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
ENVIRONMENTAL SCIENCE CENTER
701 MAPES ROAD
FORT MEADE, MARYLAND 20755-5350

DATE : October 30, 2008

SUBJECT: Region III Data QA Review

FROM : Khin-Cho Thaung KCT
Region III ESAT RPO (3ES20)

TO : John Banks
Regional Project Manager (3HS22)

Attached is the inorganic data validation report for the Price Battery site (Case #: 37823 SDG# MC0068, MC8200) completed by the Region 111 Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2743.

Attachments

cc: Andrea Soo (CDM Federal)

TO File #: 0014 TDF# 1057

Lockheed Martin Enterprise Solutions & Services
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597

LOCKHEED MARTIN
We never forget who we're working for™

Date: October 21, 2008

Subject: Inorganic Data Validation (IM2 Level)
Case: 37823
SDGs : MC0068, MC8200
Site : Price Battery

From: Kurt Roby
Inorganic Data Reviewer

Mahboobeh Mecanic
Senior Oversight Chemist

To: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Case 37823, Sample Delivery Groups (SDGs) MC0068 and MC8200, consisted of thirty-one (31) soil samples analyzed for antimony (Sb), arsenic (As) and lead (Pb) by ICP-AES. Samples were analyzed by Bonner Analytical Testing Company (BONNER) according to the Contract Laboratory Program (CLP) Statement of Work (SOW) ILM05.4 through the Routine Analytical Services (RAS) program.

SUMMARY

Data were validated according to Region III Modifications to the National Functional Guidelines for Inorganic Data Review, Level IM2. Areas of concern with respect to data usability are listed below.

Data in this case have been impacted by outliers present in laboratory blank, matrix spike, laboratory duplicate and ICP serial dilution analyses. Details of these outliers are discussed under "Major Problem" and "Minor Problems," specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on the Data Summary Forms (DSFs).

MAJOR PROBLEM

The matrix spike recovery was extremely low (<30%) for Sb in SDG MC0068. Low recoveries may be attributed to matrix interferences or analyte lost during the digestion process. Positive results for this analyte in affected samples were qualified "L" unless superseded by "J" on the DSFs. The quantitation limit for Sb in sample MC81X2 was rejected and has been qualified "R" on the DSF.

MINOR PROBLEMS

A continuing calibration blank (CCB) had reported a result greater than the Method Detection Limit (MDL) for Sb in SDG MC8200. Positive results for this analyte in affected samples which are less than or equal to five times (≤5X) the blank concentration may be biased high and have been qualified "B" on the DSF.

Matrix spike recoveries were low (<75% but >30%) for Sb in SDG MC8200 and As in SDG MC0068. Low recoveries may be attributed to matrix interferences or analyte lost during the digestion process. Positive results for these analytes in affected samples were qualified "L" unless superseded by "B" or "J" on the DSFs.

Percent differences (%Ds) in the ICP serial dilution analyses were outside the control limit (>10%) for Pb in both SDGs. Positive results for this analyte in all samples are estimated due to possible matrix interferences and have been qualified "J" on the DSFs.

The relative percent difference (RPD) in the laboratory duplicate analysis was outside control limits (35% RPD, ±2XCRQL) for Pb in SDG MC0068. Positive results for this analyte in all samples of this SDG are estimated and have been qualified "J" on the DSFs.

NOTES

The concentration of Pb in SDG MC0068 exceeded the calibration range in the initial analysis for samples MC0071, MC81W8, MC81X0, MC81X4 and MC81X5. These samples were re-analyzed at five (5X), ten (10X), three (3X), twenty (20X) and twenty (20X) fold dilutions, respectively, to bring the concentration of the analyte within the calibration range. Results for this analyte were reported from the diluted analyses and annotated with a (+) symbol on the DSFs by the reviewer.

The post-digestion spike recovery was low (<75% but >30%) for As in SDG MC0068; however, data are not qualified based on the post-digestion spike recovery. The post-digestion spike recovery for Sb in both SDGs reported results within QC criteria.

Reported results between MDLs and Contract Required Quantitation Limits (CRQLs) were qualified "J" unless superseded by "B" on the DSFs.

Data for Case 37823, SDGs MC0068 and MC8200, were reviewed in accordance with the National Functional Guidelines for Evaluating Inorganic Analyses with Modifications for use within Region III.

ATTACHMENTS

INFORMATION REGARDING REPORT CONTENT

Table 1A is a summary of qualifiers applied to the laboratory-generated results during data validation.

Table 1A	Summary of qualifiers on data summary forms after data validation
Table 1B	Codes used in comments column of Table 1A
Appendix A	Glossary of Data Qualifier Codes
Appendix B	Data Summary Form(s)
Appendix C	Chain of Custody Records
Appendix D	Laboratory Case Narrative

DCN: 37823_MC0068

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

Case 37823, SDG MC0068

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Sb	MC0071, MC81W8, MC81X0, MC81X2, MC81X4, MC81X5, MC81X9, MC81Y2	L	R	Extremely Low	MSEL (27%)
	All samples except MC0071, MC81W8, MC81X0, MC81X2, MC81X4, MC81X5, MC81X9, MC81Y2	J			>MDL<CRQL MSEL (27%)
As	All samples	L		Low	MSL (72%)
Pb	All samples	J			DUP (38%) ISD (23%)

* See explanation of comments in Table 1B

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

Case 37823, SDG MC8200

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Sb	MC8207, MC8210	B		High	CCB (2.588 J ug/L) MSL (47%)
	MC8200, MC8208	L		Low	MSL (47%)
	MC8202, MC8203, MC8205, MC8206, MC8209, MC8211, MC8212	J			>MDL<CRQL MSL (47%)
Pb	All samples	J			ISD (16%)

* See explanation of comments in Table 1B

TABLE 1B
CODES USED IN COMMENTS COLUMN

MSEL	=	Matrix spike recovery was extremely low (<30%) [percent recovery is in parenthesis]. Positive results and quantitation limits may be biased extremely low.
>MDL<CRQL	=	Reported results are greater than MDL but less than CRQL and are considered estimated.
MSL	=	Matrix spike recoveries were low (<75% but >30%) [percent recoveries are in parenthesis]. Positive results and quantitation limits may be biased low.
DUP	=	The relative percent difference (RPD) for the laboratory duplicate analysis was outside the control limit (35% RPD, ±2XCRQL) [percent recovery is in parenthesis]. Positive results are to be considered estimates.
ISD	=	Percent differences (%Ds) in the ICP serial dilution analyses were outside the control limit (>10%) [%Ds are in parenthesis]. Positive results are estimated.
CCB	=	Continuing calibration blank had a result >MDL [result is in parenthesis]. Positive results which are ≤5X the blank concentration may be biased high.

Appendix A

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

Appendix B

Data Summary Forms

Case #: 37823 SDG : MC0068 Number of Soil Samples : 20
Site : PRICE BATTERY Number of Water Samples : 0
Lab. : BONNER

Sample Number :		MC0068		MC0070		MC0071		MC81W8		MC81W9	
Sampling Location :		WH13-18		WH7-09		WH2-33		WH12-09		WH12-33	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		9/19/2008		9/22/2008		9/22/2008		9/19/2008		9/19/2008	
Time Sampled :		11:20		10:30		11:25		10:25		10:45	
%Solids :		85.3		95.6		87.7		86.1		84.9	
Dilution Factor :		1.0		1.0		1.0 / 5.0		1.0 / 10		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6	1.1	J	4.2	J	116	L	97.0	L	0.94	J
ARSENIC	1	4.6	L	6.9	L	44.2	L	20.4	L	4.3	L
*LEAD	1	58.8	J	308	J	9860 +	J	23200 +	J	24.2	J

Sample Number :		MC81X0		MC81X1		MC81X2		MC81X3		MC81X4	
Sampling Location :		WH13-9		WH13-33		WH7-33		WH7-57		WH2-09	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		9/19/2008		9/19/2008		9/22/2008		9/22/2008		9/22/2008	
Time Sampled :		11:15		11:25		10:40		10:50		11:35	
%Solids :		88.6		86.8		84.0		90.7		90.7	
Dilution Factor :		1.0 / 3.0		1.0		1.0		1.0		1.0 / 20	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6	16.9	L	0.67	J		R	0.46	J	15.9	L
ARSENIC	1	7.4	L	3.2	L	3.7	L	3.2	L	12.1	L
*LEAD	1	4540 +	J	21.8	J	63.7	J	9.5	J	45100 +	J

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100) Revised 09/99

"+" = Result reported from the diluted analysis

Case #: 37823 SDG : MC0068
Site : PRICE BATTERY
Lab. : BONNER

Sample Number :		MC81X5		MC81X6		MC81X7		MC81X8		MC81X9	
Sampling Location :		WH2-57		WH2-81		WH5-9		WH5-33		BW1-21	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		9/22/2008		9/22/2008		9/22/2008		9/22/2008		9/22/2008	
Time Sampled :		12:10		12:20		14:44		14:52		16:10	
%Solids :		82.2		69.1		92.0		91.1		82.8	
Dilution Factor :		1.0 / 20		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6	251	L	1.1	J	3.1	J	4.0	J	54.4	L
ARSENIC	1	61.2	L	5.7	L	4.9	L	6.8	L	13.6	L
*LEAD	1	39400 +	J	71.6	J	1120	J	2090	J	1720	J

Sample Number :		MC81Y0		MC81Y2		MC81Y3		MC81Z8		MC81Z9	
Sampling Location :		BW1-33		WH5-57		WH5-81		BW5-21		BW5-33	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		9/22/2008		9/22/2008		9/22/2008		9/23/2008		9/23/2008	
Time Sampled :		16:15		15:10		15:20		11:10		11:20	
%Solids :		78.2		81.6		70.6		83.4		80.9	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6	3.1	J	9.8	L	1.9	J	2.4	J	4.1	J
ARSENIC	1	5.7	L	8.2	L	9.2	L	6.2	L	11.4	L
*LEAD	1	127	J	1780	J	454	J	1290	J	362	J

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100) Revised 09/99

"+" = Result reported from the diluted analysis

DATA SUMMARY FORM: INORGANIC

Case #: 37823 SDG : MC8200 Number of Soil Samples : 11
Site : PRICE BATTERY Number of Water Samples : 0
Lab. : BONNER

Sample Number :		MC8200		MC8202		MC8203		MC8205		MC8206	
Sampling Location :		BW5-9		BW8-21		BW8-33		MP41-33		MP41-57	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		9/23/2008		9/24/2008		9/24/2008		9/18/2008		9/18/2008	
Time Sampled :		11:00		08:30		08:40		11:41		11:49	
%Solids :		89.4		80.3		78.5		83.7		81.7	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6	7.4	L	0.56	J	0.54	J	0.46	J	0.77	J
ARSENIC	1	5.3		5.3		4.8		2.9		2.9	
*LEAD	1	1060	J	80.7	J	80.8	J	28.0	J	10.6	J

Sample Number :		MC8207		MC8208		MC8209		MC8210		MC8211	
Sampling Location :		MP41-81		MP41-9		MP46-33		MP46-57		PL3-21	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		9/18/2008		9/18/2008		9/18/2008		9/18/2008		9/24/2008	
Time Sampled :		11:55		11:35		12:45		13:00		10:00	
%Solids :		87.1		70.9		85.1		82.1		90.0	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6	0.57	B	25.3	L	5.9	J	0.56	B	2.5	J
ARSENIC	1	2.1		7.0		49.9		1.9		67.7	
*LEAD	1	9.7	J	2440	J	725	J	22.5	J	42.4	J

Sample Number :		MC8212									
Sampling Location :		PL3-33									
Matrix :		Soil									
Units :		mg/Kg									
Date Sampled :		9/24/2008									
Time Sampled :		10:10									
%Solids :		86.1									
Dilution Factor :		1.0									
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6	2.6	J								
ARSENIC	1	105									
*LEAD	1	26.3	J								

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100) Revised 09/99

Appendix C

Chain of Custody Records

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	Date Shipped:	9/25/2008	**Chain of Custody Record**	Sampler Signature:
Project Code:	CT4356	Carrier Name:	FedEx		
Account Code:		Airbill:	792113123305		
CERCLIS ID:		Shipped to:	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854		
Spill ID:	AE2				
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA				
Project Leader:	Lucinda Pype				
Action:					
Sampling Co:	CDM				

Relinquished By	(Date/Time)	Received By	(Date/Time)
1			
2			
3			
4			

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC0050	Soil (>12")/ David Michailof	2	TM/Hg (14)	006-389 (Ice Only) (1)	MP45-33	S: 09/18/2008 14:55	–
MC0068	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-301 (Ice Only) (1)	WH13-18	S: 09/19/2008 11:20	–
MC0070	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-307 (Ice Only) (1)	WH7-09	S: 09/22/2008 10:30	–
MC0071	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-313 (Ice Only) (1)	WH2-33	S: 09/22/2008 11:25	–
MC81W8	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-314 (Ice Only) (1)	WH12-09	S: 09/19/2008 10:25	–
MC81W9	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-315 (Ice Only) (1)	WH12-33	S: 09/19/2008 10:45	–

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

ICP Sb, As = ICP Sb, As, Pb, TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-594095470-092508-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	Date Shipped:	9/25/2008	**Chain of Custody Record**	Sampler Signature:
Project Code:	CT4356	Carrier Name:	FedEx		
Account Code:		Airbill:	792113123305	Relinquished By (Date/Time)	Received By (Date/Time)
CERCLIS ID:		Shipped to:	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC81X0	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-316 (Ice Only) (1)	WH13-9	S: 09/19/2008 11:15	-
MC81X1	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-317 (Ice Only) (1)	WH13-33	S: 09/19/2008 11:25	-
MC81X2	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-318 (Ice Only) (1)	WH7-33	S: 09/22/2008 10:40	-
MC81X3	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-319 (Ice Only) (1)	WH7-57	S: 09/22/2008 10:50	-
MC81X4	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-320 (Ice Only) (1)	WH2-09	S: 09/22/2008 11:35	-
MC81X5	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-321 (Ice Only) (1)	WH2-57	S: 09/22/2008 12:10	-

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

ICP Sb, As = ICP Sb, As, Pb, TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-594095470-092508-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	Date Shipped:	9/25/2008	**Chain of Custody Record**	Sampler Signature:
Project Code:	CT4356	Carrier Name:	FedEx		
Account Code:		Airbill:	792113123305		
CERCLIS ID:		Shipped to:	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854		
Spill ID:	AE2				
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA				
Project Leader:	Lucinda Pype				
Action:					
Sampling Co:	CDM				

Relinquished By	(Date/Time)	Received By	(Date/Time)
1			
2			
3			
4			

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC81X6	Soil (>12")/ David Michailofv	2	ICP Sb, As (14)	006-322 (Ice Only) (1)	WH2-81	S: 09/22/2008 12:20	-
MC81X7	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-323 (Ice Only) (1)	WH5-9	S: 09/22/2008 14:44	-
MC81X8	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-324 (Ice Only) (1)	WH5-33	S: 09/22/2008 14:52	-
MC81X9	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-325 (Ice Only) (1)	BW1-21	S: 09/22/2008 16:10	-
MC81Y0	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-326 (Ice Only) (1)	BW1-33	S: 09/22/2008 16:15	-
MC81Y1	Soil (>12")/ David Michailof	2	TM/Hg (14)	006-327 (Ice Only) (1)	BW1-9	S: 09/22/2008 16:05	-

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

ICP Sb, As = ICP Sb, As, Pb, TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-594095470-092508-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	Date Shipped:	9/25/2008	**Chain of Custody Record**	Sampler Signature:
Project Code:	CT4356	Carrier Name:	FedEx		
Account Code:		Airbill:	792113123305	Relinquished By (Date/Time)	Received By (Date/Time)
CERCLIS ID:		Shipped to:	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC81Y2	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-328 (Ice Only) (1)	WH5-57	S: 09/22/2008 15:10	-
MC81Y3	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-329 (Ice Only) (1)	WH5-61	S: 09/22/2008 15:20	-
MC81Z8	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	005-364 (Ice Only) (1)	BW5-21	S: 09/23/2008 11:10	-
MC81Z9	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	005-365 (Ice Only) (1)	BW5-33	S: 09/23/2008 11:20	-
MC8200	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	005-366 (Ice Only) (1)	BW5-9	S: 09/23/2008 11:00	-
MC8201	Soil (>12")/ David Michailof	2	TM/Hg (14)	005-367 (Ice Only) (1)	BW8-9	S: 09/24/2008 08:20	-

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

ICP Sb, As = ICP Sb, As, Pb, TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-594095470-092508-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

AR302828

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	Date Shipped:	9/25/2008	**Chain of Custody Record**	Sampler Signature:
Project Code:	CT4356	Carrier Name:	FedEx		
Account Code:		Airbill:	792113123305	Relinquished By (Date/Time)	Received By (Date/Time)
CERCLIS ID:		Shipped to:	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC8202	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	005-377 (Ice Only) (1)	BW8-21	S: 09/24/2008 08:30	-
MC8203	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	005-378 (Ice Only) (1)	BW8-33	S: 09/24/2008 08:40	-
MC8204	Soil (>12")/ David Michailof	2	TM/Hg (14)	005-379 (Ice Only) (1)	PL3-9	S: 09/24/2008 09:30	-
MC8205	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-385 (Ice Only) (1)	MP41-33	S: 09/18/2008 11:41	-
MC8206	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-386 (Ice Only) (1)	MP41-57	S: 09/18/2008 11:49	-
MC8207	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-387 (Ice Only) (1)	MP41-81	S: 09/18/2008 11:55	-

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

ICP Sb, As = ICP Sb, As, Pb, TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-594095470-092508-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	Date Shipped:	9/25/2008	**Chain of Custody Record**	Sampler Signature:
Project Code:	CT4356	Carrier Name:	FedEx		
Account Code:		Airbill:	792113123305	Relinquished By (Date/Time)	Received By (Date/Time)
CERCLIS ID:		Shipped to:	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC8208	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-388 (Ice Only) (1)	MP41-9	S: 09/18/2008 11:35	-
MC8209	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-390 (Ice Only) (1)	MP46-33	S: 09/18/2008 12:45	-
MC8210	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-391 (Ice Only) (1)	MP46-57	S: 09/18/2008 13:00	-
MC8211	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-392 (Ice Only) (1)	PL3-21	S: 09/24/2008 10:00	-
MC8212	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-393 (Ice Only) (1)	PL3-33	S: 09/24/2008 10:10	-

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

ICP Sb, As = ICP Sb, As, Pb, TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-594095470-092508-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

U.S. EPA Region III Analytical Request Form

Revision 10.06

YIS 7-2-08

ASQAB USE ONLY		
RAS#	CT4556	Analytical TAT
DAS#		7/14
NSI#		

37823

Date: 25 August 2008	Site Activity: RI/FS Oversight			
Site Name: Price Battery		Street Address: 251 Grand Street		
City: Hamburg	State: PA	Latitude:	Longitude:	
Program: Superfund	Acct. #: 2008 T03N 302DD2C A3E2BD02		CERCLIS #: PAN000305679	
Site ID: N/A	Spill ID: N/A		Operable Unit: 2	
Site Specific QA Plan Submitted: ☐ No ☒ Yes	Title: Price Battery Operable Unit 2 RI/FS Oversight Draft SMP		Date Approved: 5/12/08	
EPA Project Leader: John Banks	Phone#: 215-814-3214	Cell Phone #:	E-mail: banks.john-d@epa.gov	
Request Preparer: Andrea Soo	Phone#: 610 293 0450	Cell Phone #: 610-304-0803	E-mail: sooac@cdm.com	
Site Leader: Lucinda Pype	Phone#: 717-560-7500	Cell Phone #:	E-mail: pypelj@cdm.com	

Contractor: CDM		EPA CO/PO: Melisa Hoffman		
#Samples 34	Matrix: soil	Parameter: Lead, Antimony, and Arsenic	Bonner	Method: ILM05.4 ICP-AES 28183
#Samples 1	Matrix: soil	Parameter: ICP metals + Hg	↓	Method: ILM05.4 ICP-AES 28184
#Samples 10	Matrix: soil	Parameter: TCL VOC	Shealy	Method: SOM01.2, low soil 28186
#Samples 10	Matrix: soil	Parameter: TCL SVOC	↓	Method: SOM01.2, low soil 28187
#Samples 2	Matrix: soil	Parameter: TCL PCB	↓	Method: SOM01.2 28188
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Total)	Bonner	Method: ILM05.4 ICP-AES 28185
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Dissolved)	↓	Method: ILM05.4 ICP-AES
#Samples 2	Matrix: water non-potable	Parameter: TCL VOC	Shealy	Method: SOM01.2, trace water 28189
#Samples 2	Matrix: water non-potable	Parameter: TCL SVOC	↓	Method: SOM01.2, low water 28190

Ship Date From: 9/08/2008 (9/12)	Ship Date To: 10/31/2008	Org. Validation Level M3	Inorg. Validation Level IM2

Unvalidated Data Requested: ☐ No ☒ Yes If Yes, TAT Needed: ☐ 14 days ☒ 7days ☐ 72hrs ☐ 48hrs ☐ 24hrs ☐ Other (Specify) + 3 days for CADRE ESAT

Validated Data Package Due: ☐ 42 days ☐ 30 days ☐ 21days ☐ 14 days ☒ Other (Specify) 28 days 7/21 14/28/14

Electronic Data Deliverables Required: ☐ No ☒ Yes (EDDs will be provided in Region 3 EDD Format)

Special Instructions: The unvalidated data is requested via SMO/ESAT – 7 days analytical TAT + 3 days for compliance review = 10 days at no additional cost. Please note that we will be adopting the CLP methods, SOM01.2 and ILM05.4 in place of the PRP's SW846 methods listed in the attached PDF file. Reporting limits required are listed in the attached PDF file in Table 1a under "RL." If there are any reporting limits that cannot be met by the requested methods, please contact Andrea Soo immediately at sooac@cdm.com or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (sooac@cdm.com) and Nancy Forman (FormanNA@cdm.com), and Jonah Jackson (JacksonJM@cdm.com) when available. Quantitation limits are provided in the PDF file that was attached to this lab request.

Appendix D

Laboratory Case Narrative

USEPA - CLP

COVER PAGE

Lab Name: Bonner Analytical Testing Contract: EPW06055

Lab Code: BONNER Case No.: 37823 NRAS No.: SDG No.: MC0068

SOW No.: ILM05.4

EPA SAMPLE NO.	Lab Sample ID:
MC0068	0809331-01
MC0068D	0809331-01DUP
MC0068S	0809331-01MS
MC0070	0809331-02
MC0071	0809331-03
MC81W8	0809331-04
MC81W9	0809331-05
MC81X0	0809331-06
MC81X1	0809331-07
MC81X2	0809331-08
MC81X3	0809331-09
MC81X4	0809331-10
MC81X5	0809331-11
MC81X6	0809331-12
MC81X7	0809331-13
MC81X8	0809331-14
MC81X9	0809331-15
MC81Y0	0809331-16
MC81Y2	0809331-17
MC81Y3	0809331-18
MC81Z8	0809331-19
MC81Z9	0809331-20

		ICP-AES	ICP-MS
Were ICP-AES and ICP interelement corrections applied?	(Yes/No)	Yes	Yes
Were ICP-AES and ICP background corrections applied?	(Yes/No)	Yes	Yes
If yes, were raw data generated before application of background corrections?	(Yes/No)	No	No

Comments:

Lead is flagged as "E" estimated due to interferences occuring during the analysis of the Serial Dilution.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance designee, as verified by the following signature.

Signature: Name: Brandon G. Beck For Chris Bonner

Date: 10/09/08 Title: President

Bonner Analytical Testing Company

2703 Oak Grove Road, Hattiesburg, MS 39402
Phone: (601) 264-2854 Fax: (601) 268-7084

SDG NARRATIVE:

SDG Number: MC0068
Case Number: 37823
Contract Number: EPW06055

Sample Receipt:
On September 26, 2008, we received 20 soil samples under FedEx airbill number 7921 1312 3305. Custody seals were present and intact. Cooler temp was determined to be 5°C. Samples were received in good condition except for the following discrepancies:

1. No QCs are listed on the TR/COC. We would like to use the following if acceptable:

SDG	QC
MC0050	MC0050
MC0068	MC0068
MC8200	MC8200

Resolution: In accordance with previous direction from Region 3, the laboratory will select a sample for laboratory QC as long as the sample is not a PE, blank, or rinsate sample. The laboratory will note the issue in the Case/SDG Narrative, notify the SMO coordinator of the sample selected for laboratory QC, and proceed with the analysis of the samples. SMO will note that the laboratory selected samples MC0050 (SDG MC0050), MC0068 (SDG MC0068), and MC8200 (SDG MC8200) as laboratory QC.

Metals
The analytical run began 10/07/2008 @ 1621 hrs. The matrix spike failed for As and Sb; a post spike was analyzed at twice the CRQL for Sb and at twice the indigenous level for As. MC0071, W8, X0, X4 and X5 were over the range for Pb; the samples were reanalyzed at appropriate dilutions.

CSF:
No Discrepancies

Sample Equation:

Lab ID 0809331-01 EPA Sample # MC0068

Date & Time 10/07/2008@1714

Metals: 9.6239 µg/L * (0.100 L) / (1.00 g) * 100 % / 85.3 % * 1000 g / 1 kg * 1 mg / 1000 µg = 1.1 mg/kg

(Analyte Sb)

Authorized by _____
Daniel Antrim
Document Control Officer

Bonner Analytical Testing Company
Total Solids

SDG No: MC0068 Case No.: 37823 Batch No.: 8100206

Date Began: 10/01/08 Time Began: 16:00 Temperature Began: 103.0
Date Finished: 10/02/08 Time Finished 10:25 Temperature Finished: 104.0

EPA Sample ID	MC0068		MC0070	MC0071	MC81W8	MC81W9	MC81X0	MC81X1	MC81X2	MC81X3	MC81X4
Laboratory ID	0809331-01		0809331-02	0809331-03	0809331-04	0809331-05	0809331-06	0809331-07	0809331-08	0809331-09	0809331-10
Pan ID	1	1	2	3	4	5	6	7	8	9	10
Pan Weight	1.03	1.02	0.99	1.01	1.03	0.97	1.02	1.00	0.99	0.99	0.99
Pan + Sample (Initial)	5.44	5.47	5.73	5.82	5.91	7.39	6.37	6.01	6.42	5.52	5.95
Sample Weight (initial)	4.41	4.45	4.74	4.81	4.88	6.42	5.35	5.01	5.43	4.53	4.96
Pan + Sample (Final)	4.79	4.88	5.52	5.23	5.23	6.42	5.76	5.35	5.55	5.10	5.49
Sample Weight (Final)	3.76	3.86	4.53	4.22	4.20	5.45	4.74	4.35	4.56	4.11	4.50
Total Solids	85.3%	86.7%	95.6%	87.7%	86.1%	84.9%	88.6%	86.8%	84.0%	90.7%	90.7%
% RSD	1.72%										

Sample ID	MC81X5	MC81X6	MC81X7	MC81X8	MC81X9	MC81Y0	MC81Y2	MC81Y3	MC81Z8	MC81Z9
Laboratory ID	0809331-11	0809331-12	0809331-13	0809331-14	0809331-15	0809331-16	0809331-17	0809331-18	0809331-19	0809331-20
Pan ID	11	12	13	14	15	16	17	18	19	20
Pan Weight	1.00	1.03	1.02	1.02	1.02	1.00	1.02	1.01	1.02	1.02
Pan + Sample (Initial)	5.66	5.66	5.75	5.64	6.13	5.87	6.12	5.60	6.09	5.69
Sample Weight (initial)	4.66	4.63	4.73	4.62	5.11	4.87	5.10	4.59	5.07	4.67
Pan + Sample (Final)	4.83	4.23	5.37	5.23	5.25	4.81	5.18	4.25	5.25	4.80
Sample Weight (Final)	3.83	3.20	4.35	4.21	4.23	3.81	4.16	3.24	4.23	3.78
Total Solids	82.2%	69.1%	92.0%	91.1%	82.8%	78.2%	81.6%	70.6%	83.4%	80.9%

Weighed By DAB Date: 10/1/2008

Analyst: BAK Date: 10/2/2008

Supervisor: BGB Date: 10/9/2008

Bethany Whitehead

From: Walsh, Colin [cwalsh20@fedcsc.com]
Sent: Friday, September 26, 2008 11:38 AM
To: Bethany Whitehead
Cc: Chris Bonner; slizys.dan@epa.gov; Harris.Carroll@epamail.epa.gov; thaung.khin-cho@epa.gov; kwedar.john@epa.gov
Subject: Region 03 | Case 37823 | Lab BONNER | Issue Insufficient/inappropriate designation of laboratory QC | FINAL

Beth,

Summary Start
Issue: Laboratory QC is not designated on the TR/COC; however, the Scheduling Notification Form lists that laboratory QC is required. The laboratory would like to select samples MC0050 (SDG MC0050), MC0068 (SDG MC0068), and MC8200 (SDG MC8200) as laboratory QC.

Resolution: In accordance with previous direction from Region 3, the laboratory will select a sample for laboratory QC as long as the sample is not a PE, blank, or rinsate sample. The laboratory will note the issue in the Case/SDG Narrative, notify the SMO coordinator of the sample selected for laboratory QC, and proceed with the analysis of the samples.
SMO will note that the laboratory selected samples MC0050 (SDG MC0050), MC0068 (SDG MC0068), and MC8200 (SDG MC8200) as laboratory QC.
Summary End

Please let me know if you have any further questions or problems.

Thanks,

Colin

Colin G. Walsh
Environmental Coordinator - Region 3
CSC

15000 Conference Center Drive, Chantilly, VA 20151
Civil Division | (p) 703-818-4544 | (f) 703-818-4602 | cwalsh20@fedcsc.com | www.csc.com

From: Bethany Whitehead [mailto:bwhitehead@batco.com]
Sent: Friday, September 26, 2008 1:11 PM
To: Walsh, Colin
Cc: Chris Bonner
Subject: Region 3 | Case 37823 | Sample Receipt

Bonner Analytical Testing Company

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Corrective Action

04266

Topic: MC0083 Date: 10/1/8

Nature of Problem: 1. Matrix spike failed for As, Pb, & Sb
2.) Samples MC0071, MC81N8, MC81X0, MC81X4, MC81X8, were above the linear range for lead.

Action Requested:

1 New Sample Requested: YES (NO)

2 Retest or Reanalysis Necessary: (YES) NO

3 Other Action:

Submitter

Signature: Brandon St Pierre Date: 10/9/8

Corrective Action Taken: 1. Post spike was analyzed @ 2X CRQL for Sb & 2X the spike for As & Pb (75 & 100 respectively)

Was the problem resolved: (YES) NO

Responder

Signature: Date: 10/08/08

AR302837

USEPA - CLP

COVER PAGE

Lab Name: Bonner Analytical Testing Contract: EPW06055

Lab Code: BONNER Case No.: 37823 NRAS No.: _____ SDG No.: MC8200

SOW No.: ILM05.4

EPA SAMPLE NO.	Lab Sample ID:
MC8200	0809332-01
MC8200D	0809332-01DUP
MC8200S	0809332-01MS
MC8202	0809332-02
MC8203	0809332-03
MC8205	0809332-04
MC8206	0809332-05
MC8207	0809332-06
MC8208	0809332-07
MC8209	0809332-08
MC8210	0809332-09
MC8211	0809332-10
MC8212	0809332-11

		ICP-AES	ICP-MS
Were ICP-AES and ICP interelement corrections applied?	(Yes/No)	Yes	Yes
Were ICP-AES and ICP background corrections applied?	(Yes/No)	Yes	Yes
If yes, were raw data generated before application of background corrections?	(Yes/No)	No	No

Comments:

Pb is flagged as "E" estimated due to interferences occuring during the analysis of the Serial Dilution.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance designee, as verified by the following signature.

Signature: _____ Name: Brandon G. Beck For Chris Bonner

Date: 10/09/08 Title: President

Bonner Analytical Testing Company

2703 Oak Grove Road, Hattiesburg, MS 39402
Phone: (601) 264-2854 Fax: (601) 268-7084

SDG NARRATIVE:

SDG Number: MC8200
Case Number: 37823
Contract Number: EPW06055

Sample Receipt:
On September 26, 2008, we received 11 soil samples under FedEx airbill number 7921 1312 3305. Custody seals were present and intact. Cooler temp was determined to be 5°C. Samples were received in good condition except for the following discrepancies:

1. No QCs are listed on the TR/COC. We would like to use the following if acceptable:

SDG	QC
MC0050	MC0050
MC0068	MC0068
MC8200	MC8200

Resolution: In accordance with previous direction from Region 3, the laboratory will select a sample for laboratory QC as long as the sample is not a PE, blank, or rinsate sample. The laboratory will note the issue in the Case/SDG Narrative, notify the SMO coordinator of the sample selected for laboratory QC, and proceed with the analysis of the samples. SMO will note that the laboratory selected samples MC0050 (SDG MC0050), MC0068 (SDG MC0068), and MC8200 (SDG MC8200) as laboratory QC.

Metals
The analytical run began 9/30/2008 @ 1436 hrs. The matrix spike failed for Sb; a post spike was analyzed at twice the indigenous level for Sb.

CSF:
No Discrepancies

Sample Equation:

Lab ID 0809332-01 EPA Sample # MC8200

Date & Time 9/30/2008@1529

Metals: 47.276 µg/L * (0.100 L) / (1.00 g) * 100 % / 89.4 % * 1000 g / 1 kg * 1 mg / 1000 µg = 5.3 mg/kg

(Analyte As)

Authorized by _____
Daniel Antrim
Document Control Officer

Bonner Analytical Testing Company

Total Solids

SDG No: MC8200 Case No.: 37823 Batch No.:

Date Began: 09/29/08 Time Began: 12:30 Temperature Began: 102.0

Date Finished: 09/30/08 Time Finished 08:20 Temperature Finished: 104.5

EPA Sample ID	MC8200		MC8202	MC8203	MC8205	MC8206	MC8207	MC8208	MC8209	MC8210	MC8211
Laboratory ID	0809332-01		0809332-02	0809332-03	0809332-04	0809332-05	0809332-06	0809332-07	0809332-08	0809332-09	0809332-10
Pan ID	1	1	2	3	4	5	6	7	8	9	10
Pan Weight	1.00	1.02	1.03	1.03	1.02	1.02	1.04	1.02	0.99	0.99	1.01
Pan + Sample (Initial)	9.55	9.02	8.44	9.28	9.23	9.55	8.69	8.07	8.22	9.35	8.38
Sample Weight (initial)	8.55	8.00	7.41	8.25	8.21	8.53	7.65	7.05	7.23	8.36	7.37
Pan + Sample (Final)	8.64	8.32	6.98	7.51	7.89	7.99	7.70	6.02	7.14	7.85	7.64
Sample Weight (Final)	7.64	7.30	5.95	6.48	6.87	6.97	6.66	5.00	6.15	6.86	6.63
Total Solids	89.4%	91.3%	80.3%	78.5%	83.7%	81.7%	87.1%	70.9%	85.1%	82.1%	90.0%
% RSD	2.10%										

Sample ID	MC8212									
Laboratory ID	0809332-11									
Pan ID	11	12	13	14	15	16	17	18	19	20
Pan Weight	1.01									
Pan + Sample (Initial)	9.02									
Sample Weight (initial)	8.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pan + Sample (Final)	7.91									
Sample Weight (Final)	6.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Solids	86.1%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Weighed By ASE Date: 9/29/2008

Analyst: BAK Date: 9/30/2008

Supervisor: CMB Date: 10/1/2008

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Bonner Analytical Testing Company

Corrective Action

04264

Topic: MC8200 Date: 9/30/08

Nature of Problem: ① Matrix Spike failed for Sb.

Action Requested:

1 New Sample Requested: YES NO

2 Retest or Reanalysis Necessary: YES NO

3 Other Action: _____

Submitter

Signature: _____ Date: 10/01/08

Corrective Action Taken: ① Postspike Sb @ 2X finding (182 ppb)

Was the problem resolved: YES NO

Responder

Signature: _____ Date: 10/1/08

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
ENVIRONMENTAL SCIENCE CENTER
701 MAPES ROAD
FORT MEADE, MARYLAND 20755-5350

DATE : October 27, 2008

SUBJECT: Region III Data QA Review

FROM : Khin-Cho Thaung KCT
Region III ESAT RPO (3ES20)

TO : John Banks
Regional Project Manager (3HS22)

Attached is the organic data validation report for the Price Battery site (Case #: 37823 SDG#C0040) completed by the Region 111 Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2743.

Attachments

cc: Andrea Soo (CDM Federal)

TO File #: 0014 TDF# 1059

Lockheed Martin Enterprise Solutions & Services
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597

LOCKHEED MARTIN
We never forget who we're working for™

Date: October 23, 2008

Subject: Organic Data Validation (M3 Level)
Case: 37823
SDG : C0040
Site : Price Battery

From: Kurt Roby
Organic Data Reviewer

Mahboobeh Mecanic
Senior Oversight Chemist

To: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Case 37823, Sample Delivery Group (SDG) C0040, consisted of eleven (11) soil samples analyzed for volatile, semivolatile and/or aroclor compounds. Analyses were performed by Shealy Environmental Services, Inc. (SHEALY) according to the Contract Laboratory Program (CLP) Statement of Work (SOW) SOM01.2 through the Routine Analytical Services (RAS) program.

SUMMARY

Data were validated according to Region III Modifications to the National Functional Guidelines for Organic Data Review, Level M3. Areas of concern with respect to data usability are listed below.

It should be noted that in SOM01.2, 1,4-dioxane is no longer a target analyte by Trace VOA and Trace VOA SIM analyses. Using SOM01.2 for the detection and reporting of 1,4-dioxane at low and medium levels has not consistently generated data of sufficiently known quality. This is due to poor purge efficiency. Results for 1,4-dioxane using this method should be considered advisory.

MAJOR PROBLEM

- In the volatile fraction, the Relative Response Factor (RRF) for 1,4-dioxane was less than 0.005 in initial and continuing calibration associated with these samples. Quantitation limits for 1,4-dioxane in affected samples were rejected and qualified "R" on the Data Summary Forms (DSFs).

MINOR PROBLEM

- In the volatile and semivolatile fractions, several compounds failed precision criteria [Percent Relative Standard Deviation (%RSD) and/or Percent Difference (%D)] in the initial and/or continuing calibrations. The "J" qualifier for positive results for these compounds in affected samples was superseded by "B" on the DSFs. Quantitation limits were not impacted as the 50% criterion was not exceeded.

- In the volatile fraction, area counts for Internal Standards (ISs) chlorobenzene-d_5 in sample C8201 and 1,4-dichlorobenzene-d_4 in samples C0070 and C8201 reported results below lower control limits. These samples were re-analyzed with similar results. Positive results reported for compounds associated with these ISs in affected samples were qualified "J" unless superseded by "B" on the DSFs. Quantitation limits for compounds associated with these ISs in affected samples were qualified "UJ" on the DSFs.

- In the volatile fraction, the following Deuterated Monitoring Compounds (DMCs) in the samples listed below reported recoveries below lower control limits. In each instance that a compound associated with these DMCs in affected samples reported a positive result; the "L" qualifier was superseded by "J" or "B" on the DSFs. Quantitation limits for compounds associated with these DMCs in affected samples were qualified "UL" unless superseded by "UJ" on the DSFs.

DMC	Sample
1,2-dichloroethane-d_4	C81W3, C8201
benzene-d_6	C81W3
toluene-d_8	C81W3, C8201
trans-1,3-dichloropropene-d_4	C8201
1,2-dichlorobenzene-d_4	C81W3, C0070, C8201

- In the volatile fraction, DMC 1,2-dichloropropane-d_6 reported a recovery above the upper control limit in sample C8201. The "K" qualifier for this outlier for compounds associated with this DMC in sample C8201 reporting positive results was superseded by "J" on the DSFs.

- The sample cooler containing samples C8201 and C8204 had an interior temperature of 6.2°C, which exceeded the required cooler temperature of 4°C±2°C. Positive results for volatile compounds in these samples may be biased low and have been qualified "L" unless superseded by "J" or "B" on the DSFs. Quantitation limits for volatile compounds in these samples may be biased low and have been qualified "UL" unless superseded by "UJ" on the DSFs. Due to thermostability of semivolatile compounds, no data were qualified in this fraction based on the sample cooler chest temperature

- The holding time of fourteen (14) days from the time of sample collection to sample analysis for volatile compounds has been exceeded by one (1) day for sample C0050. Positive results for volatile compounds in sample C0050 may be biased low and have been qualified "L" unless superseded by "J" or "B" on the DSFs. Quantitation limits for volatile compounds in sample C0050 may be biased low and have been qualified "UL" on the DSFs.

- Aroclor compounds with percent difference (%D) greater than twenty five percent (>25%) between the two analytical columns were qualified "J" on the DSFs.

NOTES

- Concentrations of target compounds found in the analysis of the associated blanks are listed below. Only the compounds used to qualify data are listed. Samples with concentrations of common laboratory contaminants (*) less than ten times (<10X) the blank concentration or with concentrations of other contaminants less than five times (<5X) blank concentration have been qualified "B" on the DSFs.

Fraction	Blanks	Compound	Concentration (ug/Kg)	Affected Samples
Volatile	Method (VBLKB1)	Methylene chloride*	2.1 J	C81W2, C81W3
		2-butanone	4.5 J	C81W2
		Chloroform	0.70 J	C81W2
		2-hexanone	5.6 J	C81W2, C81W3
		1,2,4-trichlorobenzene	0.84 J	C81W3
		1,2,3-trichlorobenzene	0.99 J	C81W3
	Method (VBLKE1)	1,1-dichloroethene	0.91 J	C0071
		Methylene chloride*	0.97 J	C0070
		2-butanone	8.2 J	C0071
		Toluene	0.62 J	C0071
		2-hexanone	10	C0070, C0071
		Ethylbenzene	0.59 J	C0070, C0071
		o-xylene	0.68 J	C0070, C0071
		m,p-xylene	1.5 J	C0070, C0071
		1,4-dichlorobenzene	0.68 J	C0070
		1,2-dichlorobenzene	0.71 J	C0070
		1,2,4-trichlorobenzene	1.4 J	C0070
	Method (VBLKJ1)	Methylene chloride*	0.88 J	C8201
	Storage (VHBLK01)	Acetone*	8.0 J	C0070, C0071, C81W2, C81W3, C8201, C8204
		Tetrachloroethene	7.8	C8201, C8204
Semivolatile	Method (SBLK86)	bis(2-ethylhexyl)phthalate*	21 J	C0068, C0070, C0071

- The concentration of naphthalene and 2-methylnaphthalene exceeded the calibration range in the initial analysis for sample C0050 in the semivolatile fraction. This sample was re-analyzed at a five fold (5X) dilution to bring the concentration of these compounds within the calibration range. Results for these compounds were reported from the diluted analysis and annotated with a (+) symbol on the DSF by the reviewer.

- In the volatile fraction, DMCs vinyl chloride-d_3 in sample C0070 and 1,4-dioxane-d_8 in sample C0071 reported recoveries above upper control limits. As there were no positive results reported for compounds associated with these DMCs in these samples, no data were qualified based on these outliers.

- In the volatile fraction, samples C0070, C8201 and C81W3 were re-analyzed due to several QC criteria not meeting control limits. The re-analyses for these samples reported similar results, and in some instances, additional QC criteria did not meet control limits. Results from the initial analyses for these samples were reported on the DSFs.

- In the volatile fraction, DMC 2-hexanone-d_5 reported a recovery below the lower control limit in method blank VBLKE1. No data were qualified based on this outlier.

- The soil samples were collected utilizing Encore samplers. The samples were transferred and placed in a freezer upon sample receipt until sample analysis by the laboratory.

- Sample weights other than five (5) grams for the volatile fraction and thirty (30) grams for the semivolatile fraction were used in the analyses of the soil samples associated with this case. The dilution factors reported on the DSFs reflect actual sample weights analyzed. The CRQLs for these samples are elevated due to the dilutions.

- In the volatile fraction, sample C0050 was initially analyzed using a medium level compound quantitation at the dilution listed below based on sample screening. In the semivolatile fraction, the following samples were analyzed at the dilutions listed below due to insufficient sample availability. The CRQLs for these samples are elevated due to the dilutions.

Fraction	Sample	Dilution
Volatile	C0050	500X
Semivolatile	C0071	5X
	C8201	2X

- In the aroclor fraction, an initial sample weight of fifteen (15) grams instead of thirty (30) grams were used and brought to a final extraction volume of five milliliters (5.0 mL) instead of ten milliliters (10 mL), preserving the Contract Required Quantitation Limits (CRQLs) for these compounds. Samples C0041 and C81W3 used an initial sample weight other than fifteen (15) grams in the analyses of the soil samples. The dilution factors reported on the DSF reflect actual sample weights analyzed. The CRQLs for these samples are elevated due to the dilutions.

- Samples with aroclors detected were initially analyzed under a five point calibration curve and results were reported on the DSF.

- Reported recoveries for aroclors in Laboratory Control Sample (LCS) and Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses were within QC limits on both columns.

- In the aroclor fraction, sample C81W1 was re-analyzed at a two fold (2X) dilution due to results on column DB-XLB reporting above the calibration range. Results from the diluted analysis were comparable to the initial analysis. However, results were reported from column DB-35MS from the initial analysis, as being the lesser of the two values in addition to the result reporting within the calibration range.

- Tentatively Identified Compounds (TICs) were reviewed during data validation. TIC Form Is for samples in which TICs were identified are included in Appendix E. Compounds identified as blank contaminants were crossed off TIC Form Is by the reviewer. Compounds identified with more than one retention time were crossed off TIC Form Is and identified as "unknown" by the reviewer.

- Compounds detected below CRQLs are qualified "J" unless superseded by "B" on the DSFs.

Data for Case 37823, SDG C0040, were reviewed in accordance with Region III Modifications to the National Functional Guidelines Level M3 for Validation of Organic Data, September 1994.

ATTACHMENTS

Appendix A – Glossary of Data Qualifier Codes
Appendix B – Data Summary Form(s)
Appendix C – Chain of Custody Records
Appendix D – Laboratory Case Narrative
Appendix E – Tentatively Identified Compounds (TICs)

DCN: 37823_C0040

Appendix A

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

NO CODE = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

Q = No analytical result.

Appendix B

Data Summary Forms

DATA SUMMARY FORM: Volatiles

Case #: 37823 | SDG : C0040 | Number of Soil Samples : 7
Site : | PRICE BATTERY | Number of Water Samples : 0
Lab. : | SHEALY | Number of Sediment Samples : 0

Sample Number :		C0050		C0070		C0071		C81W2		C81W3	
Sampling Location :		MP45-33		WH7-09		WH2-33		MP48-33		MP48-57	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :		9/18/2008		9/22/2008		9/22/2008		9/17/2008		9/17/2008	
Time Sampled :		14:55		10:30		11:25		08:00		08:15	
%Moisture :		22		3.7		12		16		7.4	
Dilution Factor :		24730		1.47		0.89		1.01		0.88	
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	5.0		UL								
Chloromethane	5.0	34000	J								
Vinyl chloride	5.0		UL								
Bromomethane	5.0		UL								
Chloroethane	5.0		UL								
Trichlorofluoromethane	5.0		UL								UL
1,1-Dichloroethene	5.0		UL			0.73	B				UL
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		UL								UL
Acetone	10		UL	8.4	B	10	B	12	B	4.4	B
Carbon Disulfide	5.0		UL								
Methyl acetate	5.0		UL								UL
Methylene chloride	5.0	22000	J	0.79	B			1.4	B	1.1	B
trans-1,2-Dichloroethene	5.0		UL								
Methyl tert-butyl ether	5.0		UL								UL
1,1-Dichloroethane	5.0		UL								
cis-1,2-Dichloroethene	5.0		UL								
2-Butanone	10		UL			4.5	B	7.4	B		
Bromochloromethane	5.0		UL								
Chloroform	5.0	61000	J					0.62	B		
1,1,1-Trichloroethane	5.0		UL								UL
Cyclohexane	5.0	1400000	L								
Carbon tetrachloride	5.0		UL								UL
Benzene	5.0		UL								UL
1,2-Dichloroethane	5.0		UL								UL
1,4-Dioxane	100		UL		R		R		R		R
Trichloroethene	5.0	24000	J								UL
Methylcyclohexane	5.0	1100000	L								
1,2-Dichloropropane	5.0		UL								
Bromodichloromethane	5.0		UL								
cis-1,3-Dichloropropene	5.0		UL								
4-Methyl-2-pentanone	10		UL								
Toluene	5.0	23000	J			0.55	B				UL
trans-1,3-Dichloropropene	5.0		UL								

Case #: 37823 SDG : C0040
Site : PRICE BATTERY
Lab. : SHEALY

Sample Number :		C0050		C0070		C0071		C81W2		C81W3	
Sampling Location :		MP45-33		WH7-09		WH2-33		MP48-33		MP48-57	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :		9/18/2008		9/22/2008		9/22/2008		9/17/2008		9/17/2008	
Time Sampled :		14:55		10:30		11:25		08:00		08:15	
%Moisture :		22		3.7		12		16		7.4	
Dilution Factor :		24730		1.47		0.89		1.01		0.88	
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0		UL								
Tetrachloroethene	5.0		UL								UL
2-Hexanone	10		UL	11	B	5.9	B	8.5	B	5.3	B
Dibromochloromethane	5.0		UL								
1,2-Dibromoethane	5.0		UL								UL
Chlorobenzene	5.0		UL		UL						UL
Ethylbenzene	5.0	2400000	L	0.91	B	0.63	B				UL
o-Xylene	5.0		UL	1.2	B	0.76	B				UL
m,p-Xylene	5.0	600000	L	1.2	B	0.72	B				UL
Styrene	5.0		UL								UL
Bromoform	5.0		UL		UJ						
Isopropylbenzene	5.0	530000	L								UL
1,1,2,2-Tetrachloroethane	5.0		UL								
1,3-Dichlorobenzene	5.0		UL		UJ						UL
1,4-Dichlorobenzene	5.0		UL	1.1	B						UL
1,2-Dichlorobenzene	5.0		UL	0.85	B						UL
1,2-Dibromo-3-chloropropane	5.0		UL		UJ						
1,2,4-Trichlorobenzene	5.0		UL	1.6	B					0.48	B
1,2,3-Trichlorobenzene	5.0		UL		UJ					0.63	B

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) / [(100 - %Moisture) / 100] Revised 09/99

Case #: 37823 SDG : C0040
Site : PRICE BATTERY
Lab. : SHEALY

Sample Number :		C8201		C8204							
Sampling Location :		BW8-9		PL3-9							
Matrix :		Soil		Soil							
Units :		ug/Kg		ug/Kg							
Date Sampled :		9/24/2008		9/24/2008							
Time Sampled :		08:20		09:30							
%Moisture :		11		11							
Dilution Factor :		0.92		0.91							
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	5.0		UL		UL						
Chloromethane	5.0		UL		UL						
Vinyl chloride	5.0		UL		UL						
Bromomethane	5.0		UL		UL						
Chloroethane	5.0		UL		UL						
Trichlorofluoromethane	5.0		UL		UL						
1,1-Dichloroethene	5.0		UL		UL						
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		UL		UL						
Acetone	10	21	B	21	B						
Carbon Disulfide	5.0		UL		UL						
Methyl acetate	5.0		UL		UL						
Methylene chloride	5.0	0.81	B		UL						
trans-1,2-Dichloroethene	5.0		UL		UL						
Methyl tert-butyl ether	5.0		UL		UL						
1,1-Dichloroethane	5.0		UL		UL						
cis-1,2-Dichloroethene	5.0		UL		UL						
2-Butanone	10		UL		UL						
Bromochloromethane	5.0		UL		UL						
Chloroform	5.0		UL		UL						
1,1,1-Trichloroethane	5.0		UJ		UL						
Cyclohexane	5.0	1.5	J		UL						
Carbon tetrachloride	5.0		UJ		UL						
Benzene	5.0		UJ		UL						
1,2-Dichloroethane	5.0		UL		UL						
1,4-Dioxane	100		UL		UL						
Trichloroethene	5.0		UJ		UL						
Methylcyclohexane	5.0		UJ		UL						
1,2-Dichloropropane	5.0		UJ		UL						
Bromodichloromethane	5.0		UJ		UL						
cis-1,3-Dichloropropene	5.0		UJ		UL						
4-Methyl-2-pentanone	10		UJ		UL						
Toluene	5.0	0.55	J		UL						
trans-1,3-Dichloropropene	5.0		UJ		UL						

Case #: 37823 SDG : C0040
Site : PRICE BATTERY
Lab. : SHEALY

Sample Number :		C8201		C8204							
Sampling Location :		BW8-9		PL3-9							
Matrix :		Soil		Soil							
Units :		ug/Kg		ug/Kg							
Date Sampled :		9/24/2008		9/24/2008							
Time Sampled :		08:20		09:30							
%Moisture :		11		11							
Dilution Factor :		0.92		0.91							
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0		UJ		UL						
Tetrachloroethene	5.0	23	B	9.7	B						
2-Hexanone	10		UJ		UL						
Dibromochloromethane	5.0		UJ		UL						
1,2-Dibromoethane	5.0		UJ		UL						
Chlorobenzene	5.0		UJ		UL						
Ethylbenzene	5.0		UJ		UL						
o-Xylene	5.0		UJ		UL						
m,p-Xylene	5.0		UJ		UL						
Styrene	5.0		UJ		UL						
Bromoform	5.0		UJ		UL						
Isopropylbenzene	5.0		UJ		UL						
1,1,2,2-Tetrachloroethane	5.0		UJ		UL						
1,3-Dichlorobenzene	5.0		UJ		UL						
1,4-Dichlorobenzene	5.0		UJ		UL						
1,2-Dichlorobenzene	5.0		UJ		UL						
1,2-Dibromo-3-chloropropane	5.0		UJ		UL						
1,2,4-Trichlorobenzene	5.0		UJ		UL						
1,2,3-Trichlorobenzene	5.0		UJ		UL						

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) / [(100 - %Moisture) / 100] Revised 09/99

Case #: 37823 SDG : C0040 Number of Soil Samples : 8
Site : PRICE BATTERY Number of Water Samples : 0
Lab. : SHEALY Number of Sediment Samples : 0

Sample Number :		C0050		C0068		C0070		C0071		C81W2	
Sampling Location :		MP45-33		WH13-18		WH7-09		WH2-33		MP48-33	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :		9/18/2008		9/19/2008		9/22/2008		9/22/2008		9/17/2008	
Time Sampled :		14:55		11:20		10:30		11:25		08:00	
%Molsture :		22		18		3.7		12		16	
Dilution Factor :		0.99 / 4.93		1.0		1.0		4.95		1.0	
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	170										
Phenol	170										
Bis(2-Chloroethyl)ether	170										
2-Chlorophenol	170										
2-Methylphenol	170										
2,2'-Oxybis(1-chloropropane)	170										
Acetophenone	170										
4-Methylphenol	170										
N-Nitroso-di-n-propylamine	170	180	J								
Hexachloroethane	170										
Nitrobenzene	170										
Isophorone	170										
2-Nitrophenol	170										
2,4-Dimethylphenol	170										
Bis(2-Chloroethoxy)methane	170										
2,4-Dichlorophenol	170										
Naphthalene	170	3500 +									
4-Chloroaniline	170										
Hexachlorobutadiene	170										
Caprolactam	170										
4-Chloro-3-methylphenol	170										
2-Methylnaphthalene	170	4300 +									
Hexachlorocyclopentadiene	170										
2,4,6-Trichlorophenol	170										
2,4,5-Trichlorophenol	170										
1,1'-Biphenyl	170	73	J								
2-Chloronaphthalene	170										
2-Nitroaniline	330										
Dimethylphthalate	170										
2,6-Dinitrotoluene	170										
Acenaphthylene	170										
3-Nitroaniline	330										
Acenaphthene	170	70	J								

"+" = Result reported from the diluted analysis

Case #: 37823 SDG : C0040
Site : PRICE BATTERY
Lab. : SHEALY

Sample Number :		C0050		C0068		C0070		C0071		C81W2	
Sampling Location :		MP45-33		WH13-18		WH7-09		WH2-33		MP48-33	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :		9/18/2008		9/19/2008		9/22/2008		9/22/2008		9/17/2008	
Time Sampled :		14:55		11:20		10:30		11:25		08:00	
%Moisture :		22		18		3.7		12		16	
Dilution Factor :		0.99 / 4.93		1.0		1.0		4.95		1.0	
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	330										
4-Nitrophenol	330										
Dibenzofuran	170										
2,4-Dinitrotoluene	170										
Diethylphthalate	170										
Fluorene	170	95	J								
4-Chlorophenyl-phenylether	170										
4-Nitroaniline	330										
4,6-Dinitro-2-methylphenol	330										
N-Nitrosodiphenylamine	170										
1,2,4,5-Tetrachlorobenzene	170										
4-Bromophenyl-phenylether	170										
Hexachlorobenzene	170										
Atrazine	170										
Pentachlorophenol	330										
Phenanthrene	170	190	J	210	J	40	J	140	J		
Anthracene	170			41	J						
Carbazole	170			24	J						
Di-n-butylphthalate	170										
Fluoranthene	170	49	J	550		120	J	250	J	62	J
Pyrene	170	72	J	430		120	J	330	J	33	J
Butylbenzylphthalate	170										
3,3'-Dichlorobenzidine	170										
Benzo(a)anthracene	170			270		53	J	320	J		
Chrysene	170			280		53	J	530	J		
Bis(2-ethylhexyl)phthalate	170			29	B	31	B	190	B		
Di-n-octylphthalate	170										
Benzo(b)fluoranthene	170			360		60	J	800	J	52	J
Benzo(k)fluoranthene	170			120	J	29	J	250	J	29	J
Benzo(a)pyrene	170			280		51	J	950	J	48	J
Indeno(1,2,3-cd)pyrene	170			140	J			720	J	30	J
Dibenzo(a,h)anthracene	170									24	J
Benzo(g,h,i)perylene	170			70	J			980		24	J
2,3,4,6-Tetrachlorophenol	170										

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) / [(100 - %Moisture) / 100] Revised 09/99

Case #: 37823 SDG : C0040
Site : PRICE BATTERY
Lab. : SHEALY

Sample Number :		C81W3		C8201		C8204					
Sampling Location :		MP48-57		BW8-9		PL3-9					
Matrix :		Soil		Soil		Soil					
Units :		ug/Kg		ug/Kg		ug/Kg					
Date Sampled :		9/17/2008		9/24/2008		9/24/2008					
Time Sampled :		08:15		08:20		09:30					
%Moisture :		7.4		11		11					
Dilution Factor :		1.0		2.38		0.98					
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	170										
Phenol	170										
Bis(2-Chloroethyl)ether	170										
2-Chlorophenol	170										
2-Methylphenol	170										
2,2'-Oxybis(1-chloropropane)	170										
Acetophenone	170										
4-Methylphenol	170										
N-Nitroso-di-n-propylamine	170										
Hexachloroethane	170										
Nitrobenzene	170										
Isophorone	170										
2-Nitrophenol	170										
2,4-Dimethylphenol	170										
Bis(2-Chloroethoxy)methane	170										
2,4-Dichlorophenol	170										
Naphthalene	170			90	J						
4-Chloroaniline	170										
Hexachlorobutadiene	170										
Caprolactam	170										
4-Chloro-3-methylphenol	170										
2-Methylnaphthalene	170			110	J						
Hexachlorocyclopentadiene	170			4000							
2,4,6-Trichlorophenol	170										
2,4,5-Trichlorophenol	170										
1,1-Biphenyl	170										
2-Chloronaphthalene	170										
2-Nitroaniline	330										
Dimethylphthalate	170										
2,6-Dinitrotoluene	170										
Acenaphthylene	170			100	J						
3-Nitroaniline	330										
Acenaphthene	170										

Case #: 37823 SDG : C0040
Site : PRICE BATTERY
Lab. : SHEALY

Sample Number :		C81W3		C8201		C8204					
Sampling Location :		MP48-57		BW8-9		PL3-9					
Matrix :		Soil		Soil		Soil					
Units :		ug/Kg		ug/Kg		ug/Kg					
Date Sampled :		9/17/2008		9/24/2008		9/24/2008					
Time Sampled :		08:15		08:20		09:30					
%Moisture :		7.4		11		11					
Dilution Factor :		1.0		2.38		0.98					
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	330										
4-Nitrophenol	330										
Dibenzofuran	170			53	J						
2,4-Dinitrotoluene	170										
Diethylphthalate	170										
Fluorene	170			51	J						
4-Chlorophenyl-phenylether	170										
4-Nitroaniline	330										
4,6-Dinitro-2-methylphenol	330										
N-Nitrosodiphenylamine	170										
1,2,4,5-Tetrachlorobenzene	170										
4-Bromophenyl-phenylether	170										
Hexachlorobenzene	170			110	J						
Atrazine	170										
Pentachlorophenol	330										
Phenanthrene	170			940		120	J				
Anthracene	170			180	J	21	J				
Carbazole	170			130	J						
Di-n-butylphthalate	170										
Fluoranthene	170			1700		190					
Pyrene	170	21	J	1600		170	J				
Butylbenzylphthalate	170										
3,3-Dichlorobenzidine	170										
Benzo(a)anthracene	170			910		94	J				
Chrysene	170			1000		100	J				
Bis(2-ethylhexyl)phthalate	170	82	J								
Di-n-octylphthalate	170										
Benzo(b)fluoranthene	170			1300		150	J				
Benzo(k)fluoranthene	170			470		46	J				
Benzo(a)pyrene	170			920		100	J				
Indeno(1,2,3-cd)pyrene	170			620		66	J				
Dibenzo(a,h)anthracene	170										
Benzo(g,h,i)perylene	170			530		47	J				
2,3,4,6-Tetrachlorophenol	170										

CRQL = Contract Required Quantitation Limit. SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) / [(100 - %Moisture) / 100] Revised 09/99

Case #: 37823 SDG : C0040 Number of Soil Samples : 4
Site : PRICE BATTERY Number of Water Samples : 0
Lab. : SHEALY Number of Sediment Samples : 0

Sample Number :		C0040		C0041		C81W1		C81W3			
Sampling Location :		MP48C-09		MP48D-09		MP48-9		MP48-57			
Matrix :		Soil		Soil		Soil		Soil			
Units :		ug/Kg		ug/Kg		ug/Kg		ug/Kg			
Date Sampled :		9/17/2008		9/17/2008		9/17/2008		9/17/2008			
Time Sampled :		09:50		10:25		07:45		08:15			
%Moisture :		18		8.1		4		7.4			
Dilution Factor :		1.0		0.99		1.0		0.99			
Aroclor Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aroclor-1016	33										
Aroclor-1221	33										
Aroclor-1232	33										
Aroclor-1242	33										
Aroclor-1248	33										
Aroclor-1254	33					330	J				
Aroclor-1260	33			210							
Aroclor-1262	33										
Aroclor-1268	33										

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) / [(100 - %Moisture) / 100] Revised 09/99

Appendix C

Chain of Custody Records

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	**Date Shipped:**	9/18/2008	**Chain of Custody Record**	Sampler Signature:
Project Code:	CT4356	**Carrier Name:**	FedEx		
Account Code:		**Airbill:**	791953367905	**Relinquished By (Date/Time)**	**Received By (Date/Time)**
CERCLIS ID:		**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 8037919700	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
C0050	Soil (>12")/ David Michailof	2	BNA (14), VOA (14)	006200 (Ice Only), 006201 (Ice Only), 006202 (Ice Only), 006203 (Ice Only), 006225 (Ice Only) (5)	MP45-33	S: 09/18/2008 14:55	-

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

BNA = CLP TCL Semivolatiles, VOA = CLP TCL Volatiles

COC Number : 3-594095470-091808-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

REGION III, DW

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	Date Shipped:	9/22/2008	**Chain of Custody Record**	Sampler Signature:
Project Code:	CT4356	Carrier Name:	FedEx		
Account Code:		Airbill:	798017460537		
CERCLIS ID:		Shipped to:	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 8037919700		
Spill ID:	AE2				
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA				
Project Leader:	Lucinda Pype				
Action:					
Sampling Co:	CDM				

Relinquished By	(Date/Time)	Received By	(Date/Time)
1			
2			
3			
4			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
C0068	Soil (>12")/ David Michailof	2	BNA (14)	006-300 (Ice Only) (1)	WH13-18	S: 09/19/2008 11:20	-
C0070	Soil (0"-12")/ David Michailof	2	BNA (14), VOA (14)	006-302 (Ice Only), 006-303 (Ice Only), 006-304 (Ice Only), 006-305 (Ice Only), 006-306 (Ice Only) (5)	WH7-09	S: 09/22/2008 10:30	-
C0071	Soil (0"-12")/ David Michailof	2	BNA (14), VOA (14)	006-308 (Ice Only), 006-309 (Ice Only), 006-310 (Ice Only), 006-311 (Ice Only), 006-312 (Ice Only) (5)	WH2-33	S: 09/22/2008 11:25	-

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

BNA = CLP TCL Semivolatiles, VOA = CLP TCL Volatiles

COC Number : 3-594095470-092208-0001

REGION

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	**Date Shipped:**	9/17/2008	**Chain of Custody Record**	Sampler Signature:
Project Code:	CT4356	**Carrier Name:**	FedEx		
Account Code:		**Airbill:**	790086824723	**Relinquished By (Date/Time)**	**Received By (Date/Time)**
CERCLIS ID:		**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 8037919700	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
C81W2	Soil (>12")/ David Michailof	2	BNA (14), VOA (14)	006-112 (Ice Only), 006-113 (Ice Only), 006-114 (Ice Only), 006-115 (Ice Only), 006-116 (Ice Only) (5)	MP48-33	S: 09/17/2008 08:00	--
C81W3	Soil (>12")/ David Michailof	2	VOA (14)	006-119 (Ice Only), 006-120 (Ice Only), 006-121 (Ice Only), 006-122 (Ice Only) (4)	MP48-57	S: 09/17/2008 08:15	--

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

BNA = CLP TCL Semivolatiles, VOA = CLP TCL Volatiles

COC Number : 3-103246740-091708-0002

REGION 3 PA

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	**Date Shipped:**	9/17/2008	**Chain of Custody Record**	Sampler Signature:
Project Code:	CT4356	**Carrier Name:**	FedEx		
Account Code:		**Airbill:**	790086824723	**Relinquished By (Date/Time)**	**Received By (Date/Time)**
CERCLIS ID:		**Shipped to:**	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 8037919700	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
C0040	Soil (>12")/ David Michailof	2	TCL ARO (14)	006203 (Ice Only) (1)	MP48C-09	S: 09/17/2008 09:50	--
C0041	Soil (>12")/ David Michailof	2	TCL ARO (14)	006204 (Ice Only) (1)	MP48D-09	S: 09/17/2008 10:25	--
C81W1	Soil (>12")/ David Michailof	2	TCL ARO (14)	006202 (Ice Only) (1)	MP48-9	S: 09/17/2008 07:45	--
C81W3	Soil (>12")/ David Michailof	2	BNA/Pcb (14)	006201 (Ice Only) (1)	MP48-57	S: 09/17/2008 08:15	--

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

BNA/Pcb = CLP TCL Semivolatiles and PCBs, TCL ARO = SOM01.2-S-TCL-ARO

COC Number : 3-594095470-091708-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

REGION COPY

FORMS II Lite Help Desk, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602; e-Mail f2lite@fedcsc.com

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	Date Shipped:	9/24/2008	Chain of Custody Record	Sampler Signature:
Project Code:	CT4356	Carrier Name:	FedEx		
Account Code:		Airbill:	791145602192	Relinquished By (Date/Time)	Received By (Date/Time)
CERCLIS ID:		Shipped to:	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 8037919700	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
C8201	Soil (>12")/ David Michailof	2	BNA (14), VOA (14)	005-368 (Ice Only), 005-373 (Ice Only), 005-374 (Ice Only), 005-375 (Ice Only), 005-376 (Ice Only) (5)	BW8-9	S: 09/24/2008 08:20	-
C8204	Soil (>12")/ David Michailof	2	BNA (14), VOA (14)	005-380 (Ice Only), 005-381 (Ice Only), 005-382 (Ice Only), 005-383 (Ice Only), 005-384 (Ice Only) (5)	PL3-9	S: 09/24/2008 09:30	-

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

BNA = CLP TCL Semivolatiles, VOA = CLP TCL Volatiles

COC Number : 3-594095470-092408-0001

ORIGINAL

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

U.S. EPA Region III Analytical Request Form

Revision 10.06

SMO 9-2-08

ASQAB USE ONLY		
RAS#	CT4356	Analytical TAT
DAS#		7 14
NSF#		

37823

Date: 25 August 2008	Site Activity: RI/FS Oversight			
Site Name: Price Battery		Street Address: 251 Grand Street		
City: Hamburg	State: PA	Latitude:	Longitude:	
Program: Superfund	Acct. #: 2008 T03 W 302DD2C A3E2BD02		CERCLIS #: PAN000305679	
Site ID: N/A	Spill ID: N/A		Operable Unit: 2	
Site Specific QA Plan Submitted: ☐ No ☒ Yes	Title: Price Battery Operable Unit 2 RI/FS Oversight Draft SMP		Date Approved: 5/12/08	
EPA Project Leader: John Banks	Phone#: 215-814-3214	Cell Phone #:	E-mail: banks.john-d@epa.gov	
Request Preparer: Andrea Soo	Phone#: 610 293 0450	Cell Phone #: 610-304-0803	E-mail: sooac@cdm.com	
Site Leader: Lucinda Pype	Phone#: 717-560-7500	Cell Phone #:	E-mail: pypelj@cdm.com	

Contractor: CDM		EPA CO/PO: Melisa Hoffman		
#Samples 34	Matrix: soil	Parameter: Lead, Antimony, and Arsenic	Bonner	Method: ILM05.4 ICP-AES 28183
#Samples 1	Matrix: soil	Parameter: ICP metals + Hg	↓	Method: ILM05.4 ICP-AES 28184
#Samples 10	Matrix: soil	Parameter: TCL VOC	Shealy	Method: SOM01.2, low soil 28186
#Samples 10	Matrix: soil	Parameter: TCL SVOC	↓	Method: SOM01.2, low soil 28187
#Samples 2	Matrix: soil	Parameter: TCL PCB	↓	Method: SOM01.2 28188
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Total)	Bonner	Method: ILM05.4 ICP-AES 28185
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Dissolved)	↓	Method: ILM05.4 ICP-AES
#Samples 2	Matrix: water non-potable	Parameter: TCL VOC	Shealy	Method: SOM01.2, trace water 28189
#Samples 2	Matrix: water non-potable	Parameter: TCL SVOC	↓	Method: SOM01.2, low water 28190

Ship Date From: 9/08/2008 (9/12)	Ship Date To: 10/31/2008	Org. Validation Level M3	Inorg. Validation Level IM2

Unvalidated Data Requested: ☐ No ☒ Yes If Yes, TAT Needed: ☐ 14 days ☒ 7days ☐ 72hrs ☐ 48hrs ☐ 24hrs ☐ Other (Specify) + 3 days for CADRE ESAT

Validated Data Package Due: ☐ 42 days ☐ 30 days ☐ 21days ☐ 14 days ☒ Other (Specify) 28 days 7/25 14/ 14/14

Electronic Data Deliverables Required: ☐ No ☒ Yes (EDDs will be provided in Region 3 EDD Format)

Special Instructions: The unvalidated data is requested via SMO/ESAT – 7 days analytical TAT + 3 days for compliance review = 10 days at no additional cost. Please note that we will be adopting the CLP methods, SOM01.2 and ILM05.4 in place of the PRP's SW846 methods listed in the attached PDF file. Reporting limits required are listed in the attached PDF file in Table 1a under "RL." If there are any reporting limits that cannot be met by the requested methods, please contact Andrea Soo immediately at sooac@cdm.com or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (sooac@cdm.com) and Nancy Forman (FormanNA@cdm.com), and Jonah Jackson (JacksonJM@cdm.com) when available. Quantitation limits are provided in the PDF file that was attached to this lab request.

Appendix D

Laboratory Case Narrative

Shealy Environmental Services, Inc.

Contract Number: EPW05031

Date: 10/13/2008

SDG Narrative

Case 37823

SDG C0040

EPA Sample Numbers

EPA Sample Number	VOA Fraction	DL/RE	BNA Fraction	DL/RE	Aroclor Fraction	DL/RE
C0040	No	No	No	No	Yes	No
C0040MS	No	No	No	No	Yes	No
C0040MSD	No	No	No	No	Yes	No
C0041	No	No	No	No	Yes	No
C0050	Yes	No	Yes	Yes	No	No
C0068	No	No	Yes	No	No	No
C0070	Yes	Yes	Yes	No	No	No
C0071	Yes	No	Yes	No	No	No
C81W1	No	No	No	No	Yes	Yes
C81W2	Yes	No	Yes	No	No	No
C81W3	Yes	Yes	Yes	No	Yes	No
C8201	Yes	Yes	Yes	No	No	No
C8204	Yes	No	Yes	No	No	No

Columns	VOA DB-624, 30m x 0.25mm x 1.4um BNA DB-5MS, 30m x 0.25mm x 0.5um Aroclor DB-35MS 30m x 0.32mm x 0.25um Aroclor DB-XLB 30m x 0.32mm x 0.50um

VOA Equation

Soil sample concentration (ug/Kg) = $$\frac{(A_x)(I_s)(DF)}{(A_{is})(\overline{RRF})(Ws)(D)}$$

Where

A_x is the area of the characteristic ion (EICP) for the compound to be measured.

A_{is} is the area of the characteristic ion (EICP) for the internal standard.

I_s is the amount of internal standard added, in ng.

$\overline{RRF}$ is the mean relative response factor from the initial calibration.

DF is the dilution factor.

V_o is total volume of water purged, in mL.

Ws is the weight of sample added to the purge tube in g.

$$D = \frac{100 - \%moisture}{100}$$

BNA Equation	Soil sample concentration (ug/Kg) $= \frac{(A_x)(I_s)(V_t)(DF)(GPC)}{(A_{is})(\overline{RRF})(V_i)(W_s)(D)}$ Where A_x is the area of the characteristic ion (EICP) for the compound to be measured. A_{is} is the area of the characteristic ion (EICP) for the internal standard. I_s is the amount of internal standard added, in ng. $\overline{RRF}$ is the mean relative response factor from the initial calibration. DF is the dilution factor. GPC = V_{in}/V_{out} : GPC factor. V_{in} is the volume of extract loaded onto GPC column. V_{out} is the volume of extract collected after GPC cleanup. V_t is volume of the concentrated extract in uL. (If no GPC cleanup is performed, then V_t = 1000uL. If GPC cleanup is performed, then $V_t = V_{out}$.). V_i is the volume of the extract injected in uL. V_o: Volume of water extracted in mL W_s is the weight of sample extracted in g.. D= $\frac{100 - \%Moisture}{100}$

Aroclor Equation	Soil sample concentration (ug/Kg) = $\frac{(A_x)(V_t)(DF)(GPC)}{(\overline{CF})(V_i)(W_s)(D)}$ Where A_x is the response (peak area) of the compound to be measured. $\overline{CF}$ is the mean calibration factor from the initial calibration (area/ng). DF is the dilution factor. GPC = V_{in}/V_{out} : GPC factor. V_{in} is the volume of extract loaded onto GPC column. V_{out} is the volume of extract collected after GPC cleanup. V_t is volume of the concentrated extract in uL. (If no GPC cleanup is performed, then V_t = 1000uL. If GPC cleanup is performed, then $V_t = V_{out}$.). V_i is the volume of the extract injected in uL. V_o: Volume of water extracted in mL. W_s is the weight of sample extracted in g.. D= $\frac{100 - \%Moisture}{100}$

Sample Receiving

The cooler temperatures associated with these samples were 4.7, 4.6, 2.6, and 6.2°C.

According to the Scheduling Notification, these sample required laboratory QC for Aroclor fraction. However, no sample was designated for laboratory QC on the TR/COC. Sample C0040 was used for laboratory QC for Aroclor fraction for this SDG.

VOA Fraction

Since the VOA soil samples were collected in coring devices, it was beyond the laboratory's control if some of the sample weights varied significantly from 5.0 grams, as required in section 10.1.4.7 of Exhibit D Low/Medium volatiles, SOM01.1.

Sample C81W3 had four DMC recoveries outside the acceptance limits in the initial analysis. The sample was re-analyzed and the re-analysis had six DMC recoveries outside the acceptance limits. Both sets of data are included in this package.

Sample C8201 had five DMC recoveries outside the acceptance limits in the initial analysis. The sample was re-analyzed and the re-analysis had seven DMC recoveries outside the acceptance limits. Both sets of data are included in this package.

Samples C0050, C8201, C8201RE, and C8204 were analyzed outside of 10-days contractual holding time requirements, but within the 14-days technical holding time requirements.

The concentration of Tetrachloroethene in the holding blank VHBLK01 was above the CRQL. Due to an analyst's oversight, no re-analysis was performed for the holding blank.

The peak eluting at ~6.0min on MSD5 in all analyses is Pentafluorobenzene. This is an internal standard compound that is not being used for quantitation. This compound is not being identified as a TIC.

Manual integration was performed on 2-Butanone for standards VSTD005IA, VSTD010IA, VSTD050IB, and VSTD010J1 due to incorrect auto integration.

BNA Fraction

Sample C8201 was extracted using 12.6 g of sample rather than 30 g as requires by SOM01.2 due to insufficient sample weight available for extraction.

Sample C0050 was re-analyzed at a 5.0x dilution due to Naphthalene and 2-Methylnaphthalene target compounds detected over the instrument's calibration range on the DB-XLB column in the initial analysis. Both sets of data are included in this package.

Manual integration was performed on Anthracene for C0070 due to incorrect auto integration.

Manual integration was performed on Benzo(b)fluoranthene for C0068, C0070, C0071, and C8204 due to incorrect auto integration.

Manual integration was performed on Benzo(k)fluoranthene for C0068, C0070, C0071, and C8204 due to incorrect auto integration.

Manual integration was performed on Benzo(g,h,i)perylene for C0068 and C8204 due to incorrect auto integration.

Manual integration was performed on Indeno(1,2,3-cd)pyrene for C8204 due to incorrect auto integration.

Manual integration was performed on Naphthalene for C8201 due to incorrect auto integration.

Manual integration was performed on Phenanthrene for C0071 due to incorrect auto integration.

Aroclor Fraction

All samples in the SDG were extracted by the Automated Solvent Extractor (ASE). To ensure proper extraction, approximately 15 grams of sample were used for extraction. The final volume of the extract was brought to 5mL, instead of 10mL, so the CRQLs remain the same.

Sample C81W1 was re-analyzed at a 2.0x dilution due to Aroclor-1254 detected over the instrument's calibration range on the DB-XLB column in the initial analysis. Both sets of data are included in this package.

I certify that this Sample Data Package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy Sample Data Package and in the electronic data deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

S.A Parikh

Saroj A. Parikh
Project Manager
October 13, 2008

Saroj Parikh

From: "Walsh, Colin" <cwalsh20@fedcsc.com>
To: "Saroj Parikh" <sparikh@shealylab.com>
Cc: "Kerry Hinshaw" <khinshaw@shealylab.com>; <mwoodrum@shealylab.com>; <slizys.dan@epa.gov>; <Harris.Carroll@epamail.epa.gov>; <thaung.khin-cho@epa.gov>; <kwedar.john@epa.gov>
Sent: Thursday, September 25, 2008 2:30 PM
Attach: ATT00017.htm; CASE 37823 SDG C0040 TR SCAN.pdf
Subject: Region 03 | Case 37823 | Lab SHEALY | SDG C0040 | Issue Insufficient/Inappropriate designation of laboratory QC | FINAL

Saroj,

Summary Start

Issue: Laboratory QC is not designated on the TR/COC; however, the Scheduling Notification Form lists that laboratory QC is required for the ARO analysis. The laboratory would like to select sample C0040 (SDG C0040) as laboratory QC.

Resolution: In accordance with previous direction from Region 3, the laboratory will select a sample for laboratory QC as long as the sample is not a PE, blank, or rinsate sample. The laboratory will note the issue in the Case/SDG Narrative, notify the SMO coordinator of the sample selected for laboratory QC, and proceed with the analysis of the samples.

SMO will note that the laboratory selected sample C0040 (SDG C0040) as laboratory QC.

Summary End

Please let me know if you have any further questions or problems.

Thanks,

Colin

Colin G. Walsh

Environmental Coordinator - Region 3

CSC

15000 Conference Center Drive, Chantilly, VA 20151
Civil Division | (p) 703-818-4544 | (f) 703-818-4602 | cwalsh20@fedcsc.com | www.csc.com

From: Saroj Parikh [mailto:sparikh@shealylab.com]
Sent: Thursday, September 25, 2008 1:31 PM
To: Walsh, Colin
Cc: Saroj Parikh; Kerry Hinshaw; Michael A. Woodrum
Subject: Case 37823 SDG C0040 - C0040 to be used for lab QC for ARO

Colin,

SAMPLE LOG-IN SHEET
FORM DC-1

Lab Name Shealy Environmental Services Inc		Page 1 of __
Received By (Print Name) Eleanor Cianema		Log-in Date 9-25-08
Received By (Signature) [signature]		
Case Number 37823	Sample Delivery Group No. C0040	Mod. Ref. No. N/A

Remarks:		EPA Sample #	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks: Condition of Sample Shipment, etc.
1. Custody Seal(s)	Present/Absent* Intact/Broken	C8201	005-368, 005373 to 005-~~376~~ ~~376~~	JI25003-001	OK
2. Custody Seal Nos.	N A	C8204	005-380 to 005-384	↓ -002	↓
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present/Absent*				
4. Airbill	Airbill/Sticker Present/Absent*				
5. Airbill No.	7911 4560 2192				
6. Sample Tags	Present/Absent*				
Sample Tag Numbers	Listed/Not Listed on Chain-of-Custody				
7. Sample Condition	Intact/Broken*/ Leaking				
8. Cooler Temperature Indicator Bottle	Present/Absent				
9. Cooler Temperature	6.2				
10. Does information on TR/COCs and sample tags agree?	Yes/No*				
11. Date Received at Laboratory	9.25.08				
12. Time Received	0930				
Sample Transfer					
Fraction BNA	Fraction VOA				
Area # Cooler 1	Area # Freezer 14				
By [signature]	By [signature]				
On 9.25.08	On 9.25.08				

SH 10/11

[signature] 09-25-2008 EC 9/25/08

* Contact SMO and attach record of resolution.

Reviewed By S.A. Perrin	Logbook No. N/A
Date 10/11/08	Logbook Page No. N/A

Appendix E

Tentatively Identified Compounds (TICs)

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C0050

Lab Name: Shealy Environmental Services, Inc. Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 37823 Mod. Ref No.: _____ SDG No.: C0040

Matrix: (SOIL/SED/WATER) Soil Lab Sample ID: JI19010-001

Sample wt/vol: 30.4 (g/mL) g Lab File ID: 100114

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC

% Moisture: 22 Decanted: (Y/N) N Date Received: 09/19/2008

Concentrated Extract Volume: 500 (uL) Date Extracted: 09/26/2008

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 10/01/2008

GPC Cleanup: (Y/N) Y pH: 6.6 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		~~Unknown Aldol Condensate~~	~~4.050~~	~~2700~~	~~J~~ R
02		Unknown-01	5.170	3000	J
03	620-14-4	Benzene, 1-ethyl-3-methyl-	5.230	2200	NJ
04	611-14-3	Benzene, 1-ethyl-2-methyl-	5.260	2700	NJ
05	108-67-8	Benzene, 1,3,5-trimethyl-	5.550	5300	NJ
06	526-73-8	Benzene, 1,2,3-trimethyl-	5.810	3800	NJ
07	496-11-7	Indane	5.960	1200	NJ
08	135-01-3	Benzene, 1,2-diethyl-	6.010	1900	NJ
09	1074-55-1	Benzene, 1-methyl-4-propyl-	6.040	2800	NJ
10	1758-88-9	Benzene, 2-ethyl-1,4-	6.090	5400	NJ
11	934-80-5	Benzene, 4-ethyl-1,2-	6.260	1100	NJ
12	933-98-2	Benzene, 1-ethyl-2,3-	6.340	5800	NJ
13	874-41-9	Benzene, 1-ethyl-2,4-	6.520	560	NJ
14	95-93-2	Benzene, 1,2,4,5-tetramethyl-	6.620	1300	NJ
15	527-84-4	Benzene, 1-methyl-2-(1-	6.650	770	NJ
16		Unknown-02	6.810	430	J
17	~~824-90-8~~	~~1-Phenyl-1-butene~~ unknown	6.850	750	NJ
18		Unknown-03	6.890	350	J
19	~~824-90-8~~	~~1-Phenyl-1-butene~~ unknown	6.930	2000	NJ
20	1758-85-6	Benzene, 2,4-diethyl-1-	7.010	420	NJ
21	112-40-3	Dodecane	7.180	370	NJ
22	20836-11-7	1H-Indene,2,3-dihydro-2,2-	7.230	490	NJ
23	700-12-9	Benzene, pentamethyl-	7.340	350	NJ
24	56147-63-8	2-Ethyl-2,3-dihydro-1H-indene	7.580	430	NJ
25	6682-71-9	1H-Indene, 2,3-dihydro-4,7-	7.710	470	NJ
26	90-12-0	Naphthalene, 1-methyl-	8.250	980	NJ
27	575-43-9	Naphthalene, 1,6-dimethyl-	8.910	1100	NJ
28	581-42-0	Naphthalene, 2,6-dimethyl-	9.000	1200	NJ
29					
30					
	E966796[2]	Total Alkanes	N/A		

[2]EPA-designated Registry Number.

DV 10/21/08

DV 10/21/08

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C0050DL

Lab Name: Shealy Environmental Services, Inc. Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 37823 Mod. Ref No.: _____ SDG No.: C0040

Matrix: (SOIL/SED/WATER) Soil Lab Sample ID: JI19010-001

Sample wt/vol: 30.4 (g/mL) g Lab File ID: 100120

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC

% Moisture: 22 Decanted: (Y/N) N Date Received: 09/19/2008

Concentrated Extract Volume: 500 (uL) Date Extracted: 09/26/2008

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 10/01/2008

GPC Cleanup: (Y/N) Y pH: 6.6 Dilution Factor: 5.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		~~Unknown Aldol Condensate~~	~~4.050~~	~~4900~~	~~A J D~~
02	611-14-3	Benzene, 1-ethyl-2-methyl-	5.230	3500	NJ D
03	108-67-8	Benzene, 1,3,5-trimethyl-	5.310	2900	NJ D
04	95-63-6	Benzene, 1,2,4-trimethyl-	5.550	6800	NJ D
05	526-73-8	Benzene, 1,2,3-trimethyl-	5.810	4900	NJ D
06	496-11-7	Indane	5.950	1600	NJ D
07	141-93-5	Benzene, 1,3-diethyl-	6.010	2400	NJ D
08	1074-55-1	Benzene, 1-methyl-4-propyl-	6.030	3600	NJ D
09	2783-26-8	2-Tolyloxirane	6.180	1500	NJ D
10	934-80-5	Benzene, 4-ethyl-1,2-	6.250	1300	NJ D
11	527-84-4	Benzene, 1-methyl-2-(1-	6.290	1200	NJ D
12	933-98-2	Benzene, 1-ethyl-2,3-	6.340	7500	NJ D
13	1758-88-9	Benzene, 2-ethyl-1,4-	6.520	1100	NJ D
14	488-23-3	Benzene, 1,2,3,4-tetramethyl-	6.620	2500	NJ D
15	95-93-2	Benzene, 1,2,4,5-tetramethyl-	6.650	1600	NJ D
16		Unknown-01	6.800	850	J D
17	~~824-90-8~~	~~1-Phenyl-1-butene~~ unknown	6.850	1500	NJ D
18		Unknown-02	6.880	700	J D
19	~~824-90-8~~	~~1-Phenyl-1-butene~~ unknown	6.930	4000	NJ D
20	13632-94-5	Benzene, 1,4-diethyl-2-	7.010	870	NJ D
21	112-40-3	Dodecane	7.180	590	NJ D
22	17059-48-2	1H-Indene, 2,3-dihydro-1,6-	7.220	930	NJ D
23	700-12-9	Benzene, pentamethyl-	7.330	670	NJ D
24		Unknown-03	7.580	890	J D
25	6682-71-9	1H-Indene, 2,3-dihydro-4,7-	7.710	990	NJ D
26	90-12-0	Naphthalene, 1-methyl-	8.250	1900	NJ D
27	575-37-1	Naphthalene, 1,7-dimethyl-	8.910	1000	NJ D
28					
29					
30					
	E966796[2]	Total Alkanes	N/A		

DV 10/23/08

DV 10/21/08

[2]EPA-designated Registry Number.

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C0068

Lab Name: Shealy Environmental Services, Inc. Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 37823 Mod. Ref No.: _____ SDG No.: C0040

Matrix: (SOIL/SED/WATER) Soil Lab Sample ID: JI23010-001

Sample wt/vol: 30.1 (g/mL) g Lab File ID: 100109

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC

% Moisture: 18 Decanted: (Y/N) N Date Received: 09/23/2008

Concentrated Extract Volume: 500 (uL) Date Extracted: 09/24/2008

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 10/01/2008

GPC Cleanup: (Y/N) Y pH: 7.0 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		~~Unknown Aldol Condensate~~	~~4.050~~	~~8300~~	~~J~~ B
02	629-78-7	Heptadecane	15.160	130	NJ
03					
04					
05					
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30					
	E966796[2]	Total Alkanes	N/A		

DV 10/2/08

[2]EPA-designated Registry Number.

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C0070

Lab Name: Shealy Environmental Services, Inc. Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 37823 Mod. Ref No.: _____ SDG No.: C0040

Matrix: (SOIL/SED/WATER) Soil Lab Sample ID: JI23010-002

Sample wt/vol: 30.1 (g/mL) g Lab File ID: 100110

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC

% Moisture: 3.7 Decanted: (Y/N) N Date Received: 09/23/2008

Concentrated Extract Volume: 500 (uL) Date Extracted: 09/24/2008

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 10/01/2008

GPC Cleanup: (Y/N) Y pH: 7.1 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		~~Unknown-Aldol Condensate~~	~~4.070~~	~~7800~~	~~J~~
02		~~Unknown-01~~	~~8.020~~	~~130~~	~~J~~
03	143-07-7	Dodecanoic acid	9.640	160	NJ
04	57-10-3	n-Hexadecanoic acid	11.920	77	NJ
05	111-06-8	Hexadecanoic acid, butyl	13.020	800	NJ
06		Unknown-02	13.360	340	J
07		Unknown-03	13.390	650	J
08	123-95-5	Octadecanoic acid, butyl	13.910	760	NJ
09	14473-55-3	Myristin, 2,3-diaceto-1-	14.210	170	NJ
10		Unknown-04	14.230	300	J
11		Unknown-05	14.990	85	J
12		Unknown-06	15.020	120	J
13		Unknown-07	15.540	97	J
14	55401-62-2	Octadecanoic acid, 2-	15.820	130	NJ
15		Unknown-08	15.850	200	J
16					
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30					
	E966796[2]	Total Alkanes	N/A		

DV 10/21/08

[2]EPA-designated Registry Number.

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C0071

Lab Name: Shealy Environmental Services, Inc. Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 37823 Mod. Ref No.: _____ SDG No.: C0040

Matrix: (SOIL/SED/WATER) Soil Lab Sample ID: JI23010-003

Sample wt/vol: 30.3 (g/mL) g Lab File ID: 100111

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC

% Moisture: 12 Decanted: (Y/N) N Date Received: 09/23/2008

Concentrated Extract Volume: 500 (uL) Date Extracted: 09/24/2008

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 10/01/2008

GPC Cleanup: (Y/N) Y pH: 7.5 Dilution Factor: 5.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	4.040	7600	J
02	111-06-8	Hexadecanoic acid, butyl	13.020	1500	NJ
03	123-95-5	Octadecanoic acid, butyl	13.910	1300	NJ
04		Unknown-02	15.370	1000	J
05		Unknown-03	16.180	970	J
06	192-97-2	Benzo[e]pyrene	16.420	1400	NJ
07		Unknown-04	16.780	1600	J
08	24471-47-4	Perylene, 3-methyl-	17.070	920	NJ
09		Unknown-05	17.540	2500	J
10		Unknown-06	18.130	2900	J
11		Unknown-07	18.910	860	J
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30					
	E966796[2]	Total Alkanes	N/A		

[2]EPA-designated Registry Number.

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C81W2

Lab Name: Shealy Environmental Services, Inc. Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 37823 Mod. Ref No.: _____ SDG No.: C0040

Matrix: (SOIL/SED/WATER) Soil Lab Sample ID: JI18017-005

Sample wt/vol: 30.1 (g/mL) g Lab File ID: 092304

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC

% Moisture: 16 Decanted: (Y/N) N Date Received: 09/18/2008

Concentrated Extract Volume: 500 (uL) Date Extracted: 09/19/2008

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 09/23/2008

GPC Cleanup: (Y/N) Y pH: 2.0 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		~~Unknown Aldol Condensate~~	~~7.090~~	~~6900~~	~~AJ~~ B
02	111-06-8	Hexadecanoic acid, butyl	13.060	830	NJ
03	123-95-5	Octadecanoic acid, butyl	13.940	770	NJ
04					
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30					
	E966796[2]	Total Alkanes	N/A		

DV 10/2/08

[2]EPA-designated Registry Number.

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C81W3

Lab Name: Shealy Environmental Services, Inc. Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 37823 Mod. Ref No.: _____ SDG No.: C0040

Matrix: (SOIL/SED/WATER) Soil Lab Sample ID: JI18017-004

Sample wt/vol: 30.0 (g/mL) g Lab File ID: 092303

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC

% Moisture: 7.4 Decanted: (Y/N) N Date Received: 09/18/2008

Concentrated Extract Volume: 500 (uL) Date Extracted: 09/19/2008

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 09/23/2008

GPC Cleanup: (Y/N) Y pH: 2.0 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		~~Unknown Aldol Condensate~~	~~4.090~~	~~8000~~	~~A~~ J
02	111-06-8	Hexadecanoic acid, butyl	13.060	780	NJ
03		Unknown-01	13.390	380	J
04		Unknown-02	13.420	750	J
05	123-95-5	Octadecanoic acid, butyl	13.940	680	NJ
06	14473-55-3	Myristin, 2,3-diaceto-1-	14.270	330	NJ
07					
08					
09					
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12					
13					
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30					
	E966796[2]	Total Alkanes	N/A		

DV 10/21/08

[2]EPA-designated Registry Number.

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C8201

Lab Name: Shealy Environmental Services, Inc. Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 37823 Mod. Ref No.: _____ SDG No.: C0040

Matrix: (SOIL/SED/WATER) Soil Lab Sample ID: JI25003-001

Sample wt/vol: 12.6 (g/mL) g Lab File ID: 100115

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC

% Moisture: 11 Decanted: (Y/N) N Date Received: 09/25/2008

Concentrated Extract Volume: 500 (uL) Date Extracted: 09/26/2008

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 10/01/2008

GPC Cleanup: (Y/N) Y pH: 7.6 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		~~Unknown Aldol Condensate~~	~~4.060~~	~~14000~~	~~A, J, B~~
02	706-78-5	Cyclopentene, octachloro-	10.440	930	NJ
03	2531-84-2	Phenanthrene, 2-methyl-	11.930	380	NJ
04	832-69-9	Phenanthrene, 1-methyl-	11.970	340	NJ
05		Unknown-01	12.070	550	J
06		Unknown-02	12.300	310	J
07	781-43-1	9,10-Dimethylanthracene	12.620	370	NJ
08	111-06-8	Hexadecanoic acid, butyl	13.020	890	NJ
09		Unknown-03	13.360	390	J
10		Unknown-04	13.390	970	J
11	243-17-4	11H-Benzo[b]fluorene	13.530	250	NJ
12	646-13-9	Octadecanoic acid, 2-	13.920	740	NJ
13		Unknown-05	14.240	280	J
14		Unknown-06	14.390	310	J
15	1705-84-6	Triphenylene, 2-methyl-	15.120	240	NJ
16	192-97-2	Benzo[e]pyrene	16.420	720	NJ
17					
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29					
30					
	E966796[2]	Total Alkanes	N/A		

[2]EPA-designated Registry Number.

DV 10/2/08

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C8204

Lab Name: Shealy Environmental Services, Inc. Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 37823 Mod. Ref No.: _____ SDG No.: C0040

Matrix: (SOIL/SED/WATER) Soil Lab Sample ID: JI25003-002

Sample wt/vol: 30.6 (g/mL) g Lab File ID: 100116

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC

% Moisture: 11 Decanted: (Y/N) N Date Received: 09/25/2008

Concentrated Extract Volume: 500 (uL) Date Extracted: 09/26/2008

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 10/01/2008

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		~~Unknown Aldol Condensate~~	~~4.040~~	~~2400~~	~~J~~ B
02	143-07-7	Dodecanoic acid	9.640	230	NJ
03	111-06-8	Hexadecanoic acid, butyl	13.020	690	NJ
04		Unknown-01	13.360	200	J
05		Unknown-02	13.390	420	J
06	123-95-5	Octadecanoic acid, butyl	13.910	580	NJ
07		Unknown-03	14.240	200	J
08		Unknown-04	15.820	350	J
09					
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25					
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27					
28					
29					
30					
	E9667962	Total Alkanes	N/A		

DV 10/2/08

[2]EPA-designated Registry Number.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
ENVIRONMENTAL SCIENCE CENTER
701 MAPES ROAD
FORT MEADE, MARYLAND 20755-5350

DATE : October 22, 2008

SUBJECT: Region III Data QA Review

FROM : Khin-Cho Thaung KCT
Region III ESAT RPO (3ES20)

TO : John Banks
Regional Project Manager (3HS22)

Attached is the inorganic data validation report for the Price Battery site (Case #: 37823 SDG# MC81T3) completed by the Region 111 Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2763.

Attachments

cc: Andrea Soo (CDM Federal)

TO File #: 0014 TDF# 1015

LOCKHEED MARTIN
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Lockheed Martin Enterprise Solutions & Services
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597

DATE: October 15, 2008

SUBJECT: Inorganic Data Validation (IM2 Level)
Case: 37823
SDG: MC81T3
Site: Price Battery

FROM: Donald M. Brown DMB
Inorganic Data Reviewer

Mahboobeh Mecanic MM
Senior Oversight Chemist

TO: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Case 37823, Sample Delivery Group (SDG) MC81T3, consisted of eleven (11) soil samples analyzed for antimony (Sb), arsenic (As) and lead (Pb) by Bonner Analytical Testing Company (BONNER). The sample set contained no field Quality Control (QC) samples. Samples were analyzed in accordance with Contract Laboratory Program (CLP) Statement of Work (SOW) ILM05.4 through the Routine Analytical Services (RAS) program.

SUMMARY

Data were validated according to Region III Modifications to the National Functional Guidelines for Inorganic Data Review, Level IM2. Areas of concern with respect to data usability are listed below.

Data in this case have been impacted by outliers present in the matrix spike analysis. Details of these outliers are discussed under "Major and Minor Problems", specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on the Data Summary Forms (DSFs).

MAJOR PROBLEM

The matrix spike recovery was extremely low (<30%) for Sb. Positive results for this analyte in affected samples may be biased extremely low. The "L" qualifier for this outlier has been superseded by "J" on the DSFs. The quantitation limit for this analyte in sample MC81T3 has been rejected and qualified "R" on the DSF.

MINOR PROBLEM

The matrix spike recovery was low (<75% but >30%) for Pb. The low recovery may be attributed to matrix interferences or analyte lost during the digestion process. Positive results for this analyte in all samples may be biased low and have been qualified "L" on the DSFs.

NOTES

Reported results between Method Detection Limits (MDLs) and Contract Required Quantitation Limits (CRQLs) were qualified "J" on the DSFs.

Several inconsistencies were noted on the QC forms provided in the data package. Clarifications/corrections were requested from the laboratory but were not received to the date of this report. Corrections were made by the reviewer for obvious errors.

According to the SDG Narrative, an internal standard failed for the ICP serial dilution during the initial analytical run. Therefore, the laboratory reanalyzed the parent sample (MC81T3), matrix spike, laboratory duplicate and serial dilution in a separate analytical run. No data were qualified based on this finding.

Data for Case 37823, SDG MC81T3, were reviewed in accordance with the National Functional Guidelines for Evaluating Inorganic Analyses with Modifications for use within Region III.

ATTACHMENTS

INFORMATION REGARDING REPORT CONTENT

Table 1A is a summary of qualifiers applied to the laboratory-generated results during data validation.

TABLE 1A	SUMMARY OF QUALIFIERS ON DATA SUMMARY FORMS AFTER DATA VALIDATION
TABLE 1B	CODES USED IN COMMENTS COLUMN OF TABLE 1A
APPENDIX A	GLOSSARY OF DATA QUALIFIER CODES
APPENDIX B	DATA SUMMARY FORMS
APPENDIX C	CHAIN OF CUSTODY RECORDS
APPENDIX D	LABORATORY CASE NARRATIVE

DCN: 37823.MC81T3IM2.doc

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

Case 37823, SDG MC81T3

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Sb	All Samples Except MC81T3	J			>MDL<CRQL MSE (13%)
	MC81T3		R	Ext. Low	MSE (13%)
Pb	All Samples	L		Low	MSL (69%)

* See explanation of comments in Table 1B

TABLE 1B
CODES USED IN COMMENTS COLUMN

>MDL = <CRQL	Reported results are greater than MDLs but less than CRQLs and are considered estimated.
MSE =	Matrix spike recovery was extremely low (<30%) [% recovery is in parenthesis]. Positive results may be biased extremely low and the quantitation limit is unusable.
MSL =	Matrix spike recovery was low (<75% but >30%) [% recovery is in parenthesis]. Positive results may be biased low.

Appendix A

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

Appendix B

Data Summary Forms

Case #: 37823 SDG : MC81T3 Number of Soil Samples : 11

Site : PRICE BATTERY Number of Water Samples : 0

Lab. : BONNER

Sample Number :		MC81T3		MC81T4		MC81T5		MC81T7		MC81T8	
Sampling Location :		MP34-81		MP44-9		MP44-33		MP44-57		MP44-81	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		9/16/2008		9/16/2008		9/16/2008		9/16/2008		9/16/2008	
Time Sampled :		11:45		13:45		14:00		14:15		14:30	
%Solids :		77.9		87.5		81.3		87.6		86.2	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6		R	0.45	J	1.2	J	0.38	J	0.72	J
ARSENIC	1	2.0		3.8		11.2		4.0		5.8	
*LEAD	1	11.1	L	13.7	L	79.8	L	10.1	L	17.9	L

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100) Revised 09/99

Sample Number :		MC81T9		MC81W0		MC81W2		MC81W4		MC81W6	
Sampling Location :		MP50-9		MP50-33		MP48-33		MP48-81		MP50-57	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		9/16/2008		9/16/2008		9/17/2008		9/17/2008		9/16/2008	
Time Sampled :		15:10		15:25		08:00		08:30		15:35	
%Solids :		87.7		87.2		84.7		87.8		87.8	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6	0.37	J	2.6	J	0.92	J	0.33	J	0.75	J
ARSENIC	1	3.0		6.9		4.0		2.9		6.1	
*LEAD	1	17.2	L	307	L	462	L	8.1	L	16.2	L

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100) Revised 09/99

Case #: 37823 SDG : MC81T3
Site : PRICE BATTERY
Lab. : BONNER

Sample Number :		MC81W7									
Sampling Location :		MP50-81									
Matrix :		Soil									
Units :		mg/Kg									
Date Sampled :		9/16/2008									
Time Sampled :		15:45									
%Solids :		89.1									
Dilution Factor :		1.0									
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6	0.51	J								
ARSENIC	1	3.6									
*LEAD	1	10.5	L								

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100) Revised 09/99

Appendix C

Chain-of-Custody Records

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	**Date Shipped:**	9/17/2008	**Chain of Custody Record**	Sampler Signature:
Project Code:	CT4356	**Carrier Name:**	FedEx		
Account Code:		**Airbill:**	790578927422	**Relinquished By (Date/Time)**	**Received By (Date/Time)**
CERCLIS ID:		**Shipped to:**	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC81S9	Soil (>12")/ David Michailof	2	TM/Hg (14)	006-100 (Ice Only) (1)	MP34-33	S: 09/16/2008 11:15	--
MC81T0	Soil (>12")/ David Michailof	2	TM/Hg (14)	006-101 (Ice Only) (1)	MP34-57	S: 09/16/2008 11:30	--
MC81T3	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-102 (Ice Only) (1)	MP34-81	S: 09/16/2008 11:45	--
MC81T4	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-103 (Ice Only) (1)	MP44-9	S: 09/16/2008 13:45	--
MC81T5	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-104 (Ice Only) (1)	MP44-33	S: 09/16/2008 14:00	--
MC81T7	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-106 (Ice Only) (1)	MP44-57	S: 09/16/2008 14:15	--

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

ICP Sb, As = ICP Sb, As, Pb, TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-103246740-091708-0003

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

RECEIVED AR302894

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	**Date Shipped:**	9/17/2008	**Chain of Custody Record**	Sampler Signature:
Project Code:	CT4356	**Carrier Name:**	FedEx		
Account Code:		**Airbill:**	790578927422	**Relinquished By (Date/Time)**	**Received By (Date/Time)**
CERCLIS ID:		**Shipped to:**	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC81T8	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-107 (Ice Only) (1)	MP44-81	S: 09/16/2008 14:30	--
MC81T9	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-108 (Ice Only) (1)	MP50-9	S: 09/16/2008 15:10	--
MC81W0	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-109 (Ice Only) (1)	MP50-33	S: 09/16/2008 15:25	--
MC81W1	Soil (>12")/ David Michailof	2	TM/Hg (14)	006-110 (Ice Only) (1)	MP48-9	S: 09/17/2008 07:45	--
MC81W2	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-117 (Ice Only) (1)	MP48-33	S: 09/17/2008 08:00	--
MC81W3	Soil (>12")/ David Michailof	2	TM/Hg (14)	006-123 (Ice Only) (1)	MP48-57	S: 09/17/2008 08:15	--

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

ICP Sb, As = ICP Sb, As, Pb, TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-103246740-091708-0003

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

REGION 3

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	**Date Shipped:**	9/17/2008	**Chain of Custody Record**	Sampler Signature:
Project Code:	CT4356	**Carrier Name:**	FedEx		
Account Code:		**Airbill:**	790578927422	**Relinquished By** (Date/Time)	**Received By** (Date/Time)
CERCLIS ID:		**Shipped to:**	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC81W4	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-124 (Ice Only) (1)	MP48-81	S: 09/17/2008 08:30	--
MC81W6	Soil (0"-12")/ David Michailof	2	ICP Sb, As (14)	006-126 (Ice Only) (1)	MP50-57	S: 09/16/2008 15:35	--
MC81W7	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-127 (Ice Only) (1)	MP50-81	S: 09/16/2008 15:45	--

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?** _____

ICP Sb, As = ICP Sb, As, Pb, TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-103246740-091708-0003

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

REGION AR302896

JTS 9-2-08

U.S. EPA Region III Analytical Request Form

Revision 10.06

ASQAB USE ONLY		
RAS#	CT4356	Analytical TAT
DAS#		T 14
NSF#		

37823

Date: 25 August 2008	Site Activity: RI/FS Oversight		
Site Name: Price Battery	Street Address: 251 Grand Street		
City: Hamburg	State: PA	Latitude:	Longitude:
Program: Superfund	Acct. #: 2008 T03 302DD2C A3E2BD02	CERCLIS #: PAN000305679	
Site ID: N/A	Spill ID: N/A	Operable Unit: 2	
Site Specific QA Plan Submitted: ☐ No ☒ Yes	Title: Price Battery Operable Unit 2 RI/FS Oversight Draft SMP		Date Approved: 5/12/08
EPA Project Leader: John Banks	Phone#: 215-814-3214	Cell Phone #:	E-mail: banks.john-d@epa.gov
Request Preparer: Andrea Soo	Phone#: 610 293 0450	Cell Phone #: 610-304-0803	E-mail: sooac@cdm.com
Site Leader: Lucinda Pype	Phone#: 717-560-7500	Cell Phone #:	E-mail: pypelj@cdm.com

Contractor: CDM		EPA CO/PO: Melisa Hoffman		
#Samples 34	Matrix: soil	Parameter: Lead, Antimony, and Arsenic	Bonner	Method: ILM05.4 ICP-AES 25183
#Samples 1	Matrix: soil	Parameter: ICP metals + Hg	↓	Method: ILM05.4 ICP-AES 25184
#Samples 10	Matrix: soil	Parameter: TCL VOC	Shealy	Method: SOM01.2, low soil 25186
#Samples 10	Matrix: soil	Parameter: TCL SVOC	↓	Method: SOM01.2, low soil 25187
#Samples 2	Matrix: soil	Parameter: TCL PCB	↓	Method: SOM01.2 25185
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Total)	Bonner	Method: ILM05.4 ICP-AES 25155
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Dissolved)	↓	Method: ILM05.4 ICP-AES
#Samples 2	Matrix: water non-potable	Parameter: TCL VOC	Shealy	Method: SOM01.2, trace water 25189
#Samples 2	Matrix: water non-potable	Parameter: TCL SVOC	↓	Method: SOM01.2, low water 25190

Ship Date From: 9/08/2008 (9/12)	Ship Date To: 10/31/2008	Org. Validation Level M3	Inorg. Validation Level IM2

Unvalidated Data Requested: ☐ No ☒ Yes If Yes, TAT Needed: ☐ 14 days ☒ 7days ☐ 72hrs ☐ 48hrs ☐ 24hrs ☐ Other (Specify) + 3 days for CADRE ESAT

Validated Data Package Due: ☐ 42 days ☐ 30 days ☐ 21days ☐ 14 days ☒ Other (Specify) 28 days ~~7/25~~ 14/E14

Electronic Data Deliverables Required: ☐ No ☒ Yes (EDDs will be provided in Region 3 EDD Format)

Special Instructions: The unvalidated data is requested via SMO/ESAT – 7 days analytical TAT + 3 days for compliance review = 10 days at no additional cost. Please note that we will be adopting the CLP methods, SOM01.2 and ILM05.4 in place of the PRP's SW846 methods listed in the attached PDF file. Reporting limits required are listed in the attached PDF file in Table 1a under "RL." If there are any reporting limits that cannot be met by the requested methods, please contact Andrea Soo immediately at sooac@cdm.com or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (sooac@cdm.com) and Nancy Forman (FormanNA@cdm.com), and Jonah Jackson (JacksonJM@cdm.com) when available. Quantitation limits are provided in the PDF file that was attached to this lab request.

Appendix D

Laboratory Case Narrative

USEPA - CLP

COVER PAGE

Lab Name: Bonner Analytical Testing Contract: EPW06055

Lab Code: BONNER Case No.: 37823 NRAS No.: SDG No.: MC81T3

SOW No.: ILM05.4

EPA SAMPLE NO.	Lab Sample ID:
MC81T3	0809242-01
MC81T3D	0809242-01DUP
MC81T3S	0809242-01MS
MC81T4	0809242-02
MC81T5	0809242-03
MC81T7	0809242-04
MC81T8	0809242-05
MC81T9	0809242-06
MC81W0	0809242-07
MC81W2	0809242-08
MC81W4	0809242-09
MC81W6	0809242-10
MC81W7	0809242-11

		ICP-AES	ICP-MS
Were ICP-AES and ICP interelement corrections applied?	(Yes/No)	Yes	Yes
Were ICP-AES and ICP background corrections applied?	(Yes/No)	Yes	Yes
If yes, were raw data generated before application of background corrections?	(Yes/No)	No	No

Comments:

Lead flagged as "E" estimated due to interferences occuring during the analysis of the serial dilution.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance designee, as verified by the following signature.

Signature: CLK Name: Chris Bonner

Date: 10/01/08 Title: President

Bonner Analytical Testing Company

2703 Oak Grove Road, Hattiesburg, MS 39402
Phone: (601) 264-2854 Fax: (601) 268-7084

SDG NARRATIVE:

SDG Number: MC81T3
Case Number: 37823
Contract Number: EPW06055

Sample Receipt:
On September 18, 2008, we received 11 soil samples under FedEx airbill number 7905 7892 7422. Custody seals were present and intact. Cooler temp was determined to be 3 °C. Samples were received in good condition except for the following discrepancies: 5.5 (D.J) 10/9/08

1. No QCs are listed on the TR/COC for the following SDGs:

SDG	QC
MC81S9	MC81S9
MC81T3	MC81T3

Please advise if these are acceptable.
Resolution 1: In accordance with previous direction from Region 3, the laboratory will select a sample for laboratory QC as long as the sample is not a PE, blank, or rinsate sample. The laboratory will note the issue in the Case/SDG Narrative, notify the SMO coordinator of the sample selected for laboratory QC, and proceed with the analysis of the samples. SMO will note that the laboratory selected samples MC81S9 (SDG MC81S9) and MC81T3 (SDG MC81T3) as laboratory QC.

2: The TR/COC lists the TAT as 21 days for samples received on 9/12/08; however, the Scheduling Notification Form lists the TAT as 14 days.
Resolution 2: In accordance with previous direction from Region 3, the laboratory will proceed with the turnaround time indicated on the Scheduling Notification Form, note the issue in the Case/SDG Narrative, and proceed with the analysis of the samples. This resolution will be applied to all TR/COCs received for this Case.

Metals
The analytical run began 9/29/2008 @ 2233 hrs. The serial dilution was flagged by the instrument for internal standard issues; the parent, duplicate, spike and serial dilution were reanalyzed. The matrix spike failed for Pb and Sb; a post spike was analyzed at twice the CRQL for Sb and at twice the indigenous level for Pb.

CSF:
No Discrepancies

Sample Equation:
Lab ID 0809242-01 EPA Sample # MC81T3
Date & Time 9/30/2008 @ 1109

Metals: 2.0797 µg/L * (0.100 L) / (1.00 g) * 100 % / 77.9% * 1000 g / 1 kg * 1 mg / 1000 µg = 0.27 mg/Kg
(Analyte Sb)

Authorized by_____
Daniel Antrim
Document Control Officer

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE : October 10, 2008

SUBJECT: Region III Data QA Review

FROM : Colleen Walling
Region III ESAT RPO (3ES20)

TO : John Banks
Regional Project Manager (3HS22)

Attached is the **inorganic** data validation report for the **Price Battery** site (Case/DAS #: **37823**, SDG#: **MC81S9**) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2763.

Attachments

cc: Andrea Soo (CDM Fed)

TO File #: 0014 TDF#: 1016

LOCKHEED MARTIN
We never forget who we're working for™

Lockheed Martin Enterprise Solutions & Services
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597

DATE: October 10, 2008

SUBJECT: Level IM2 Inorganic Data Validation for Case 37823
SDG: MC81S9
Site: Price Battery

FROM: Shilpa Udani
Inorganic Data Reviewer

Through: Mahboobeh Mecanic
Senior Data Review Chemist

TO: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Case 37823, Sample Delivery Group (SDG) MC81S9, consisted of four (4) soil samples submitted to Bonner Analytical Testing Company (BOONER) for total metals analyses. The sample set included no field Quality Control (QC) sample. Samples were analyzed in accordance with Contract Laboratory Program (CLP) Statement of Work (SOW) ILM05.4 through the Routine Analytical Services (RAS) program.

SUMMARY

Data were validated according to the Region III Modifications to the National Functional Guidelines for Inorganic Data Review, level IM2. Areas of concern with respect to data usability are listed below.

Data in this Case have been impacted by outliers present in the laboratory blanks as well as matrix spike and the ICP serial dilution analyses. Details for these outliers are discussed under "Minor Problems", specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on a single Data Summary Form (DSF).

MINOR PROBLEMS

The Preparation Blank (PB) had reported results greater than the Method Detection Limits (MDLs) for silver (Ag) and sodium (Na). Positive results reported for these analytes in affected samples which are less than or equal to five times (≤ 5X) the blank concentrations may be biased high and have been qualified "B" on the DSF.

Continuing Calibration Blanks (CCBs) had negative results greater than the absolute values of the MDLs for Ag and thallium (Tl). The positive result reported for Ag in affected sample MC81S9 which is less than two times (<2X) the absolute value of the blank concentration may be biased low. The "L" qualifier for this outlier has been superseded by "B" on the DSF. Quantitation limits for these analytes in affected samples may be biased low and have been qualified "UL" on the DSF.

Percent Difference (%D) for the ICP serial dilution analysis was outside the control limit (>10%) for zinc (Zn). Reported positive results for this analyte are estimated and has been qualified "J" on the DSF.

Matrix spike recoveries were low (<75% but > 30%) for antimony (Sb) and Ag. Low recoveries may be attributed to matrix interferences or analyte lost during the digestion process. Reported results for these ananlytes in affected samples may be biased low and have been qualified "L" on the DSF unless superseded by "J" or "B". Quantitation limit for Ag in affected samples may be biased low and have been qualified "UL" on the DSF.

The matrix spike recovery was high (>125%) for copper (Cu). Positive results reported for this analyte in all samples may be biased high and have been qualified "K" on the DSF.

NOTES

Positive results which are less than the Contract Required Quantitation Limits (CRQLs) but greater than MDLs have been qualified "J" on the DSF unless superseded by "B".

Sample MC81T0 was reanalyzed at a two fold (2X) dilution in order to bring the concentration of calcium (Ca) within the established calibration range. The result for this analyte in this sample is reported from the diluted analysis and annotated with a "+" on the DSF.

The Relative Percent Difference (RPD) for laboratory duplicate analysis was outside the contractual control limits (20% RPD, ± CRQL) for chromium (Cr). The RPD, however, was within Region 3 established control limits (35% RPD, ± 2 x CRQL) for soil analysis. No data were qualified for this analyte based on laboratory duplicate imprecision.

Post-digestion Spike had a low recovery (<75% but > 30%) for Ag. No data were qualified based on the post-digestion spike recovery.

Data for Case 37823 SDG MC81S9 were reviewed in accordance with Region III Modifications to the National Functional Guidelines for Evaluating Inorganic Analyses, April 1993.

ATTACHMENTS

INFORMATION REGARDING REPORT CONTENT

TABLES 1A	SUMMARY OF QUALIFIERS ON DATA SUMMARY FORMS AFTER DATA VALIDATION
TABLE 1B	CODES USED IN COMMENTS COLUMN OF TABLES 1A
APPENDIX A	GLOSSARY OF DATA QUALIFIER CODES
APPENDIX B	DATA SUMMARY FORM(S)
APPENDIX C	CHAIN OF CUSTODY RECORD(S)
APPENDIX D	LABORATORY CASE NARRATIVE(S)

DCN: 37823_MC81S9. IM2

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

Case 37823, SDG MC81S9

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Sb	MC81T0, MC81W1	L		Low	MSL (46%)
	MC81S9, MC81W3	J			> MDL < CRQL MSL (46%)
Cu	All samples	K		High	MSH (237%)
Ag	MC81T0, MC81W3		UL	Low	CBN (– 1.686 J ug/L) MSL (73%)
	MC81W1	B		High	PB (0.204 J mg/Kg) MSL (73%)
	MC81S9	B		High	PB (0.204 J mg/Kg) CBN (– 1.686 J ug/L) MSL (73%)
Na	All Samples	B		High	PB (99.101 J mg/Kg)
Tl	All Samples		UL	Low	CBN (– 6.516 J ug/L)
Zn	All Samples	J			SD (32%)

* See explanation of comments in Table 1B

TABLE 1B
CODES USED IN COMMENTS COLUMN

MSL	=	Matrix spike recoveries were low (>30 % but < 75%) [%recoveries are in parenthesis]. Reported results and quantitation limits may be biased low.
>MDL <CRQL	=	Reported results are between MDL and CRQL and are considered estimated.
MSH	=	The matrix spike recovery was high (>125%) [the %recovery is in parenthesis]. Reported results may be biased high.
CBN	=	Continuing calibration blanks had reported negative results greater than absolute value of MDLs [results are in parenthesis]. The reported result which is less than or equal to two times (≤2X) the absolute value of the blank and quantitation limits may be biased low.
PB	=	The preparation blank had reported results greater than the MDLs [results are in parenthesis]. Reported results which are less than or equal to five times (≤5X) the blank concentration may be biased high.
SD	=	Percent difference (%D) for ICP serial dilution analysis was outside the (10%) control limits. (%D is in parenthesis). Positive results are estimated.

Appendix A

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODE

Q = No analytical result.

Appendix B

Data Summary Forms (DSFs)

Case #: 37823 SDG : MC81S9

Site : PRICE BATTERY

Lab. : BONNER

Number of Soil Samples : 4

Number of Water Samples : 0

Sample Number :		MC81S9		MC81T0		MC81W1		MC81W3			
Sampling Location :		MP34-33		MP34-57		MP48-9		MP48-57			
Matrix :		Soil		Soil		Soil		Soil			
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg			
Date Sampled :		9/16/2008		9/16/2008		9/17/2008		9/17/2008			
Time Sampled :		11:15		11:30		07:45		08:15			
%Solids :		86.3		91.4		89.6		90.3			
Dilution Factor :		1.0		1.0/2.0		1.0		1.0			
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	20	4230		3930		7470		19500			
ANTIMONY	6	2.0	J	20.7	L	18.2	L	1.0	J		
ARSENIC	1	4.8		5.7		6.7		2.7			
BARIUM	20	68.1		55.9		69.1		78.6			
BERYLLIUM	0.5	0.60		0.32	J	0.50	J	1.0			
CADMIUM	0.5	0.22	J	1.2		1.5		0.26	J		
CALCIUM	500	9650		156000 +		97400		770			
CHROMIUM	1	9.1		8.2		13.1		19.3			
COBALT	5	4.1	J	3.5	J	6.0		14.3			
COPPER	2.5	41.0	K	20.8	K	25.5	K	29.5	K		
IRON	10	16100		8690		13000		36400			
LEAD	1	58.7		1820		2100		13.7			
MAGNESIUM	500	929		62300		41000		7050			
MANGANESE	1.5	53.6		263		283		1210			
MERCURY	0.1	0.12		0.42		0.21					
NICKEL	4	8.3		8.8		13.6		31.4			
POTASSIUM	500	909		1050		1710		1700			
SELENIUM	3.5										
SILVER	1	0.11	B		UL	0.43	B		UL		
SODIUM	500	441	B	287	B	223	B	129	B		
THALLIUM	2.5		UL		UL		UL		UL		
VANADIUM	5	12.9		9.8		15.0		22.4			
ZINC	6	15.2	J	118	J	146	J	73.6	J		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100)

Revised 09/99

"+" = Result is reported from diluted analysis.

Appendix C

Chain-of-Custody Records

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	Date Shipped:	9/17/2008	Chain of Custody Record	Sampler Signature:
Project Code:	CT4356	Carrier Name:	FedEx		
Account Code:		Airbill:	790578927422	Relinquished By (Date/Time)	Received By (Date/Time)
CERCLIS ID:		Shipped to:	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC81T8	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-107 (Ice Only) (1)	MP44-81	S: 09/16/2008 14:30	--
MC81T9	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-108 (Ice Only) (1)	MP50-9	S: 09/16/2008 15:10	--
MC81W0	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-109 (Ice Only) (1)	MP50-33	S: 09/16/2008 15:25	--
MC81W1	Soil (>12")/ David Michailof	2	TM/Hg (14)	006-110 (Ice Only) (1)	MP48-9	S: 09/17/2008 07:45 ✓	--
MC81W2	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-117 (Ice Only) (1)	MP48-33	S: 09/17/2008 08:00	--
MC81W3	Soil (>12")/ David Michailof	2	TM/Hg (14)	006-123 (Ice Only) (1)	MP48-57	S: 09/17/2008 08:15 ✓	--

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?**

ICP Sb, As = ICP Sb, As, Pb, TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-103246740-091708-0003

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

AR302912

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Reference Case: 37823
Client No:

R

Region:	3	**Date Shipped:**	9/17/2008	**Chain of Custody Record**	**Sampler Signature:**
Project Code:	CT4356	**Carrier Name:**	FedEx		
Account Code:		**Airbill:**	790578927422	**Relinquished By (Date/Time)**	**Received By (Date/Time)**
CERCLIS ID:		**Shipped to:**	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	1	
Spill ID:	AE2			2	
Site Name / City/State:	37823 - Price Battery OU2 - 092009 PA			3	
Project Leader:	Lucinda Pype			4	
Action:					
Sampling Co:	CDM				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
MC81S9	Soil (>12")/ David Michailof	2	TM/Hg (14)	006-100 (Ice Only) (1)	MP34-33	S: 09/16/2008 11:15 ✓	
MC81T0	Soil (>12")/ David Michailof	2	TM/Hg (14)	006-101 (Ice Only) (1)	MP34-57	S: 09/16/2008 11:30 ✓	
MC81T3	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-102 (Ice Only) (1)	MP34-81	S: 09/16/2008 11:45	
MC81T4	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-103 (Ice Only) (1)	MP44-9	S: 09/16/2008 13:45	
MC81T5	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-104 (Ice Only) (1)	MP44-33	S: 09/16/2008 14:00	
MC81T7	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	006-106 (Ice Only) (1)	MP44-57	S: 09/16/2008 14:15	

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N			

Analysis Key: **Concentration :** L = Low, M = Medium, H = High, L/M = Low/Medium **Type/Designate :** Composite = C, Grab = G, Both = B **Shipment Iced?**

ICP Sb, As = ICP Sb, As Pb, TM/Hg = CLP TAL Total Metals/HG

COC Number : 3-103246740-091708-0003

AR302913

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

U.S. EPA Region III Analytical Request Form

Revision 10.06

JTS 9-2-08

ASQAB USE ONLY		
RAS#	CT4356	Analytical TAT
DAS#		7/14
NSF#		

37823

Date: 25 August 2008	Site Activity: RI/FS Oversight		
Site Name: Price Battery		Street Address: 251 Grand Street	
City: Hamburg	State: PA	Latitude:	Longitude:
Program: Superfund	Acct. #: 2008 T03W 302DD2C A3E2BD02	CERCLIS #: PAN000305679	
Site ID: N/A	Spill ID: N/A	Operable Unit: 2	
Site Specific QA Plan Submitted: ☐ No ☒ Yes	Title: Price Battery Operable Unit 2 RI/FS Oversight Draft SMP		Date Approved: 5/12/08
EPA Project Leader: John Banks	Phone#: 215-814-3214	Cell Phone #:	E-mail: banks.john-d@epa.gov
Request Preparer: Andrea Soo	Phone#: 610 293 0450	Cell Phone #: 610-304-0803	E-mail: sooac@cdm.com
Site Leader: Lucinda Pype	Phone#: 717-560-7500	Cell Phone #:	E-mail: pypelj@cdm.com
Contractor: CDM	EPA CO/PO: Melisa Hoffman		

#Samples 34	Matrix: soil	Parameter: Lead, Antimony, and Arsenic	Bonner	Method: ILM05.4 ICP-AES 28183
#Samples 1	Matrix: soil	Parameter: ICP metals + Hg	↓	Method: ILM05.4 ICP-AES 29184
#Samples 10	Matrix: soil	Parameter: TCL VOC	Shraley	Method: SOM01.2, low soil 28186
#Samples 10	Matrix: soil	Parameter: TCL SVOC	↓	Method: SOM01.2, low soil 28187
#Samples 2	Matrix: soil	Parameter: TCL PCB	↓	Method: SOM01.2 28188
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Total)	Bonner	Method: ILM05.4 ICP-AES 28185
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Dissolved)	↓	Method: ILM05.4 ICP-AES
#Samples 2	Matrix: water non-potable	Parameter: TCL VOC	Shraley	Method: SOM01.2, trace water 28189
#Samples 2	Matrix: water non-potable	Parameter: TCL SVOC	↓	Method: SOM01.2, low water 28190

Ship Date From: 9/08/2008 (9/12)	Ship Date To: 10/31/2008	Org. Validation Level M3	Inorg. Validation Level IM2

Unvalidated Data Requested: ☐ No ☒ Yes If Yes, TAT Needed: ☐ 14 days ☒ 7days ☐ 72hrs ☐ 48hrs ☐ 24hrs ☐ Other (Specify) + 3 days for CADRE ESAT

Validated Data Package Due: ☐ 42 days ☐ 30 days ☐ 21days ☐ 14 days ☒ Other (Specify) 28 days 7/21 14/21 14

Electronic Data Deliverables Required: ☐ No ☒ Yes (EDDs will be provided in Region 3 EDD Format)

Special Instructions: The unvalidated data is requested via SMO/ESAT – 7 days analytical TAT + 3 days for compliance review = 10 days at no additional cost. Please note that we will be adopting the CLP methods, SOM01.2 and ILM05.4 in place of the PRP's SW846 methods listed in the attached PDF file. Reporting limits required are listed in the attached PDF file in Table 1a under "RL." If there are any reporting limits that cannot be met by the requested methods, please contact Andrea Soo immediately at sooac@cdm.com or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (sooac@cdm.com) and Nancy Forman (FormanNA@cdm.com), and Jonah Jackson (JacksonJM@cdm.com) when available. Quantitation limits are provided in the PDF file that was attached to this lab request.

AR302914

FORM ARF- 10/06

Appendix D

Laboratory Case Narrative

USEPA - CLP

COVER PAGE

Lab Name: Bonner Analytical Testing Company Contract: EPW06055

Lab Code: BONNER Case No: 37823 NRAS No.: SDG No: MC81S9

SOW No.: ILM05.4

EPA Sample No.	Lab Sample ID
MC81S9	0809240-01
MC81S9D	8092210-DUP1
MC81S9S	8092210-MS1
MC81T0	0809240-02
MC81W1	0809240-03
MC81W3	0809240-04

		ICP-AES	ICP-MS
Were ICP-AES and ICP-MS interelement corrections applied?	(Yes/No)	YES	NO
Were ICP-AES and ICP-MS background corrections applied?	(Yes/No)	YES	NO
If yes, were raw data generated before application of background corrections?	(Yes/No)	NO	NO

Comments: Zn is flagged as "E" estimated due to interferences occuring during the analysis of the Serial Dilution.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance by USEPA) has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: Christopher M. Bonner

Date: 10/01/08 Title: Inorganic Laboratory Manager

Bonner Analytical Testing Company

2703 Oak Grove Road, Hattiesburg, MS 39402
Phone: (601) 264-2854 Fax: (601) 268-7084

SDG NARRATIVE:

SDG Number: MC81S9
Case Number: 37823
Contract Number: EPW06055

Sample Receipt:
On September 18, 2008, we received 4 soil samples under FedEx airbill number 7905 7892 7422. Custody seals were present and intact. Cooler temp was determined to be 3°C. Samples were received in good condition except for the following discrepancies:

1. No QCs are listed on the TR/COC for the following SDGs:

SDG	QC
MC81S9	MC81S9
MC81T3	MC81T3

Please advise if these are acceptable.
Resolution 1: In accordance with previous direction from Region 3, the laboratory will select a sample for laboratory QC as long as the sample is not a PE, blank, or rinsate sample. The laboratory will note the issue in the Case/SDG Narrative, notify the SMO coordinator of the sample selected for laboratory QC, and proceed with the analysis of the samples.
SMO will note that the laboratory selected samples MC81S9 (SDG MC81S9) and MC81T3 (SDG MC81T3) as laboratory QC.

2: The TR/COC lists the TAT as 21 days for samples received on 9/12/08; however, the Scheduling Notification Form lists the TAT as 14 days.
Resolution 2: In accordance with previous direction from Region 3, the laboratory will proceed with the turnaround time indicated on the Scheduling Notification Form, note the issue in the Case/SDG Narrative, and proceed with the analysis of the samples. This resolution will be applied to all TR/COCs received for this Case.

Metals
The analytical run began 9/25/2008 @ 1627 hrs. MC81T0 was over the linear range for Ca; the sample was reanalyzed at an appropriate dilution. There were QC failures for Sb, Cu and Ag; the SDG was reanalyzed for Sb, Cu and Ag. The matrix spike failed for Sb, Cu and Ag; a post spike was analyzed at twice the indigenous level for Cu and at twice the CRQL for Sb and Ag.

Mercury
The analytical run began 9/29/2008 @ 1404 hrs. S0.5 was not used in the calibration.

CSF:
No Discrepancies

Bonner Analytical Testing Company

Total Solids

SDG No: MC81S9 Case No.: 37823 Batch No.: 8092210

Date Began: 09/19/08 Time Began: 15:45 Temperature Began: 103.0

Date Finished: 09/22/08 Time Finished 13:15 Temperature Finished: 102.0

EPA Sample ID	MC81S9		MC81T0	MC81W1	MC81W3						
Laboratory ID	0809240-01		0809240-02	0809240-03	0809240-04						
Pan ID	1	1	2	3	4	5	6	7	8	9	10
Pan Weight	1.02	1.03	1.04	1.02	1.03						
Pan + Sample (Initial)	6.87	6.38	6.83	6.51	6.51						
Sample Weight (initial)	5.85	5.35	5.79	5.49	5.48	0.00	0.00	0.00	0.00	0.00	0.00
Pan + Sample (Final)	6.07	5.77	6.33	5.94	5.98						
Sample Weight (Final)	5.05	4.74	5.29	4.92	4.95	0.00	0.00	0.00	0.00	0.00	0.00
Total Solids	86.3%	88.6%	91.4%	89.6%	90.3%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
% RSD	2.60%										

Sample ID										
Laboratory ID										
Pan ID	11	12	13	14	15	16	17	18	19	20
Pan Weight										
Pan + Sample (Initial)										
Sample Weight (initial)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pan + Sample (Final)										
Sample Weight (Final)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Solids	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Weighed By BWF Date: 9/19/2008

Analyst: CDM Date: 9/22/2008

Supervisor: BGB Date: 10/1/2008

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
ENVIRONMENTAL SCIENCE CENTER
701 MAPES ROAD
FORT MEADE, MARYLAND 20755-5350

DATE : October 9, 2008

SUBJECT: Region III Data QA Review

FROM : Colleen Walling
Region III ESAT RPO (3ES20)

TO : John Banks
Regional Project Manager (3HS22)

Attached is the organic data validation report for the Price Battery site (Case #: 37033 SDG# CC005) completed by the Region 111 Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2763.

Attachments

cc: Andrea Soo (CDM)

TO File #: 0014 TDF# 09-114

Lockheed Martin Enterprise Solutions & Services
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597

LOCKHEED MARTIN
We never forget who we're working for™

Date: October 8, 2008

Subject: Organic Data Validation (M3 Level)
Case: 37823
SDG : C0005
Site : Price Battery

From: Kurt Roby
Organic Data Reviewer

Mahboobeh Mecanic
Senior Oversight Chemist

To: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Case 37823, Sample Delivery Group (SDG) C0005, consisted of two (2) soil samples analyzed for volatile and semivolatile compounds. Analyses were performed by Shealy Environmental Services, Inc. (SHEALY). Samples were analyzed according to the Contract Laboratory Program (CLP) Statement of Work (SOW) SOM01.2 through the Routine Analytical Services (RAS) program.

SUMMARY

Data were validated according to Region III Modifications to the National Functional Guidelines for Organic Data Review, Level M3. Areas of concern with respect to data usability are listed below.

It should be noted that in SOM01.2, 1,4-dioxane is no longer a target analyte by Trace VOA and Trace VOA SIM analyses. Using SOM01.2 for the detection and reporting of 1,4-dioxane at low and medium levels has not consistently generated data of sufficiently known quality. This is due to poor purge efficiency. Results for 1,4-dioxane using this method should be considered advisory.

MAJOR PROBLEM

- In the volatile fraction, the Relative Response Factor (RRF) for 1,4-dioxane was less than 0.005 in the initial and continuing calibrations associated with these samples. Quantitation limits for 1,4-dioxane in both samples were rejected and qualified "R" on the Data Summary Form (DSF).

MINOR PROBLEMS

- In the volatile and semivolatile fractions, a couple compounds failed precision criteria [Percent Relative Standard Deviation (%RSD) and Percent Difference (%D)] in the initial and continuing calibrations. The "J" qualifier for positive result for 2-hexanone in both samples was superseded by "B" on the DSFs and quantitation limits were not impacted as the 50% criterion was not exceeded.

- In the volatile fraction, Deuterated Monitoring Compounds (DMCs) 1,2-dichloroethane-d_4, benzene-d_6, 1,2-dichloropropane-d_6, toluene-d_8, trans-1,3-dichloropropene-d_4, 1,1,2,2-tetrachloroethane-d_2 and 1,2-dichlorobenzene-d_4 reported recoveries below control limits for sample C0005 and it's re-analysis, C0005RE. In addition, DMC chloroform-d reported a recovery below the control limit for sample C0005RE. Positive results for compounds associated with these DMCs in sample C0005 were qualified "L" unless superseded by "B" on the DSFs. Quantitation limits for compounds associated with these DMCs in sample C0005 were qualified "UL" on the DSFs. Results from C0005RE were not reported.

NOTES

- Concentrations of target compounds found in the analysis of the associated blanks are listed below. Only the compounds used to qualify data are listed. Samples with concentrations of common laboratory contaminants (*) less than ten times (<10X) the blank concentration or with concentrations of other contaminants less than five times (<5X) blank concentration have been qualified "B" on the DSFs.

Fraction	Blanks	Compound	Concentration (ug/Kg)	Affected Samples
Volatile	Method (VBLK17)	1,1-dichloroethene	0.87 J	C0005, C0008
		Methylene chloride*	2.0 J	C0005, C0008
		2-hexanone	6.8 J	C0005, C0008
		1,2,4-trichlorobenzene	0.95 J	C0005, C0008
		1,2,3-trichlorobenzene	1.1 J	C0005, C0008
	Storage (VHBLK01)	Acetone*	5.9 J	C0005, C0008
		2-butanone*	6.3 J	C0005, C0008

- Sample weights other than five (5) grams in the volatile fraction and thirty (30) grams in the semivolatile fraction were used in the analyses of the soil samples associated with this case. The dilution factors reported on the Data Summary Forms (DSFs) reflect actual sample weights analyzed. The CRQLs for these samples are elevated due to the dilutions.

- Tentatively Identified Compounds (TICs) were reviewed during data validation. TIC Form Is for samples in which TICs were identified are included in Appendix E. Compounds identified as blank contaminants were crossed off TIC Form Is by the reviewer.

- Compounds detected below Contract Required Quantitation Limits (CRQL) are qualified "J" unless superseded by "B" on the DSFs.

Data for Case 37823, SDG C0005, were reviewed in accordance with Region III Modifications to the National Functional Guidelines Level M3 for Validation of Organic Data, September 1994.

ATTACHMENTS

Appendix A – Glossary of Data Qualifier Codes
Appendix B – Data Summary Form(s)
Appendix C – Chain of Custody Records
Appendix D – Laboratory Case Narrative
Appendix E – Tentatively Identified Compounds (TICs)

DCN: 37823_C0005

Appendix A

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (ORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

NO CODE = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling efforts.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

NJ = Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity.

Q = No analytical result.

Appendix B

Data Summary Forms

Case #: 37823 SDG : C0005 Number of Soil Samples : 2
Site : PRICE BATTERY Number of Water Samples : 0
Lab. : SHEALY Number of Sediment Samples : 0

Sample Number :		C0005		C0008							
Sampling Location :		MP08-09		MP08-81							
Matrix :		Soil		Soil							
Units :		ug/Kg		ug/Kg							
Date Sampled :		9/11/2008		9/11/2008							
Time Sampled :		12:15		12:55							
%Moisture :		31		17							
Dilution Factor :		1.20		0.80							
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	5.0										
Chloromethane	5.0										
Vinyl chloride	5.0										
Bromomethane	5.0										
Chloroethane	5.0										
Trichlorofluoromethane	5.0		UL								
1,1-Dichloroethene	5.0	1.3	B	0.81	B						
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		UL								
Acetone	10	57	B	13	B						
Carbon Disulfide	5.0	0.97	J								
Methyl acetate	5.0		UL								
Methylene chloride	5.0	1.1	B	0.58	B						
trans-1,2-Dichloroethene	5.0										
Methyl tert-butyl ether	5.0		UL								
1,1-Dichloroethane	5.0										
cis-1,2-Dichloroethene	5.0										
2-Butanone	10	23	B	6.2	B						
Bromochloromethane	5.0										
Chloroform	5.0										
1,1,1-Trichloroethane	5.0		UL								
Cyclohexane	5.0		UL								
Carbon tetrachloride	5.0	14	L								
Benzene	5.0		UL								
1,2-Dichloroethane	5.0		UL								
1,4-Dioxane	100		R		R						
Trichloroethene	5.0		UL								
Methylcyclohexane	5.0		UL								
1,2-Dichloropropane	5.0		UL								
Bromodichloromethane	5.0		UL								
cis-1,3-Dichloropropene	5.0		UL								
4-Methyl-2-pentanone	10	1.7	J	0.67	J						
Toluene	5.0		UL								
trans-1,3-Dichloropropene	5.0		UL								

Case #: 37823 SDG : C0005
Site : PRICE BATTERY
Lab. : SHEALY

Sample Number :		C0005		C0008							
Sampling Location :		MP08-09		MP08-81							
Matrix :		Soil		Soil							
Units :		ug/Kg		ug/Kg							
Date Sampled :		9/11/2008		9/11/2008							
Time Sampled :		12:15		12:55							
%Moisture :		31		17							
Dilution Factor :		1.20		0.80							
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
1,1,2-Trichloroethane	5.0		UL								
Tetrachloroethene	5.0		UL								
2-Hexanone	10	12	B	6.4	B						
Dibromochloromethane	5.0										
1,2-Dibromoethane	5.0		UL								
Chlorobenzene	5.0		UL								
Ethylbenzene	5.0		UL								
o-Xylene	5.0		UL								
m,p-Xylene	5.0		UL								
Styrene	5.0		UL								
Bromoform	5.0										
Isopropylbenzene	5.0		UL								
1,1,2,2-Tetrachloroethane	5.0		UL								
1,3-Dichlorobenzene	5.0		UL								
1,4-Dichlorobenzene	5.0		UL								
1,2-Dichlorobenzene	5.0		UL								
1,2-Dibromo-3-chloropropane	5.0		UL								
1,2,4-Trichlorobenzene	5.0	1.3	B	0.52	B						
1,2,3-Trichlorobenzene	5.0	1.4	B	0.57	B						

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) / [(100 - %Moisture) / 100] Revised 09/99

Case #: 37823 SDG : C0005 Number of Soil Samples : 2
Site : PRICE BATTERY Number of Water Samples : 0
Lab. : SHEALY Number of Sediment Samples : 0

Sample Number :		C0005		C0008							
Sampling Location :		MP08-09		MP08-81							
Matrix :		Soil		Soil							
Units :		ug/Kg		ug/Kg							
Date Sampled :		9/11/2008		9/11/2008							
Time Sampled :		12:15		12:55							
%Moisture :		31		17							
Dilution Factor :		0.99		0.98							
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	170										
Phenol	170										
Bis(2-Chloroethyl)ether	170										
2-Chlorophenol	170										
2-Methylphenol	170										
2,2'-Oxybis(1-chloropropane)	170										
Acetophenone	170										
4-Methylphenol	170										
N-Nitroso-di-n-propylamine	170										
Hexachloroethane	170										
Nitrobenzene	170										
Isophorone	170										
2-Nitrophenol	170										
2,4-Dimethylphenol	170										
Bis(2-Chloroethoxy)methane	170										
2,4-Dichlorophenol	170										
Naphthalene	170										
4-Chloroaniline	170										
Hexachlorobutadiene	170										
Caprolactam	170										
4-Chloro-3-methylphenol	170										
2-Methylnaphthalene	170										
Hexachlorocyclopentadiene	170										
2,4,6-Trichlorophenol	170										
2,4,5-Trichlorophenol	170										
1,1'-Biphenyl	170										
2-Chloronaphthalene	170										
2-Nitroaniline	330										
Dimethylphthalate	170										
2,6-Dinitrotoluene	170										
Acenaphthylene	170										
3-Nitroaniline	330										
Acenaphthene	170										

Case #: 37823 SDG : C0005
Site : PRICE BATTERY
Lab. : SHEALY

Sample Number :		C0005		C0008							
Sampling Location :		MP08-09		MP08-81							
Matrix :		Soil		Soil							
Units :		ug/Kg		ug/Kg							
Date Sampled :		9/11/2008		9/11/2008							
Time Sampled :		12:15		12:55							
%Moisture :		31		17							
Dilution Factor :		0.99		0.98							
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	330										
4-Nitrophenol	330										
Dibenzofuran	170										
2,4-Dinitrotoluene	170										
Diethylphthalate	170										
Fluorene	170										
4-Chlorophenyl-phenylether	170										
4-Nitroaniline	330										
4,6-Dinitro-2-methylphenol	330										
N-Nitrosodiphenylamine	170										
1,2,4,5-Tetrachlorobenzene	170										
4-Bromophenyl-phenylether	170										
Hexachlorobenzene	170										
Atrazine	170										
Pentachlorophenol	330										
Phenanthrene	170	190	J								
Anthracene	170	27	J								
Carbazole	170										
Di-n-butylphthalate	170			22	J						
Fluoranthene	170	460									
Pyrene	170	350									
Butylbenzylphthalate	170										
3,3'-Dichlorobenzidine	170										
Benzo(a)anthracene	170	210	J								
Chrysene	170	300									
Bis(2-ethylhexyl)phthalate	170										
Di-n-octylphthalate	170										
Benzo(b)fluoranthene	170	370									
Benzo(k)fluoranthene	170	150	J								
Benzo(a)pyrene	170	240	J								
Indeno(1,2,3-cd)pyrene	170	170	J								
Dibenzo(a,h)anthracene	170										
Benzo(g,h,i)perylene	170	180	J								
2,3,4,6-Tetrachlorophenol	170										

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (CRQL * Dilution Factor) / [(100 - %Moisture) / 100] Revised 09/99

Appendix C

Chain of Custody Records

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No:	37823	R
DAS No:		

Region:	3
Project Code:	CT4356
Account Code:	
CERCLIS ID:	PAN000305679
Spill ID:	AE2
Site Name/State:	Price Battery OU2 090908/PA
Project Leader:	Lucinda Pype
Action:	Combined RI/FS
Sampling Co:	CDM

Date Shipped:	9/11/2008
Carrier Name:	FedEx
Airbill:	796086981488
Shipped to:	Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 (803) 791-9700

Chain of Custody Record		Sampler Signature:	
Relinquished By	(Date / Time)	Received By	(Date / Time)
1			
2			
3			
4			

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	QC Type
C0005	Soil (>12")/ David Michailof	L/G	BNA (21), VOA (21)	100 (Ice Only), 101 (Ice Only), 102 (Ice Only), 103 (Ice Only) (5)	MP08-09	S: 9/11/2008	12:15		–
C0008	Soil (>12")/ David Michailof	L/G	BNA (21), VOA (21)	106 (Ice Only), 107 (Ice Only), 108 (Ice Only), 109 (Ice Only) (5)	MP08-81	S: 9/11/2008	12:55		–

NOT ORIGINAL

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____
BNA = CLP TCL Semivolatiles, VOA = CLP TCL Volatiles			

TR Number: 3-594095470-091108-0004

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

U.S. EPA Region III Analytical Request Form

Revision 10.06

JTS 9-2-08

ASQAP USE ONLY		
RAS#	CT4356	Analytical TAT
DAS#		7/14
NSF#		

37823

Date: 25 August 2008	Site Activity: RI/FS Oversight			
Site Name: Price Battery		Street Address: 251 Grand Street		
City: Hamburg	State: PA	Latitude:	Longitude:	
Program: Superfund	Acct. #: 2008 T03W 302DD2C A3E2BD02		CERCLIS #: PAN000305679	
Site ID: N/A	Spill ID: N/A		Operable Unit: 2	
Site Specific QA Plan Submitted: ☐ No ☒ Yes	Title: Price Battery Operable Unit 2 RI/FS Oversight Draft SMP			Date Approved: 5/12/08
EPA Project Leader: John Banks	Phone#: 215-814-3214	Cell Phone #:	E-mail: banks.john-d@epa.gov	
Request Preparer: Andrea Soo	Phone#: 610 293 0450	Cell Phone #: 610-304-0803	E-mail: sooac@cdm.com	
Site Leader: Lucinda Pype	Phone#: 717-560-7500	Cell Phone #:	E-mail: pypelj@cdm.com	

Contractor: CDM		EPA CO/PO: Melisa Hoffman		
#Samples 34	Matrix: soil	Parameter: Lead, Antimony, and Arsenic	Bonner	Method: ILM05.4 ICP-AES 28183
#Samples 1	Matrix: soil	Parameter: ICP metals + Hg	↓	Method: ILM05.4 ICP-AES 28184
#Samples 10	Matrix: soil	Parameter: TCL VOC	Shraly	Method: SOM01.2, low soil 28186
#Samples 10	Matrix: soil	Parameter: TCL SVOC	↓	Method: SOM01.2, low soil 28187
#Samples 2	Matrix: soil	Parameter: TCL PCB	↓	Method: SOM01.2 28188
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Total)	Bonner	Method: ILM05.4 ICP-AES 28185
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Dissolved)	↓	Method: ILM05.4 ICP-AES
#Samples 2	Matrix: water non-potable	Parameter: TCL VOC	Shraly	Method: SOM01.2, trace water 28189
#Samples 2	Matrix: water non-potable	Parameter: TCL SVOC	↓	Method: SOM01.2, low water 28190

Ship Date From: 9/08/2008 (9/12)	Ship Date To: 10/31/2008	Org. Validation Level M3	Inorg. Validation Level IM2

Unvalidated Data Requested: ☐ No ☒ Yes If Yes, TAT Needed: ☐ 14 days ☒ 7days ☐ 72hrs ☐ 48hrs ☐ 24hrs ☐ Other (Specify) + 3 days for CADRE ESAT

Validated Data Package Due: ☐ 42 days ☐ 30 days ☐ 21days ☐ 14 days ☒ Other (Specify) 28 days 7+21 14/E14

Electronic Data Deliverables Required: ☐ No ☒ Yes (EDDs will be provided in Region 3 EDD Format)

Special Instructions: The unvalidated data is requested via SMO/ESAT – 7 days analytical TAT + 3 days for compliance review = 10 days at no additional cost. Please note that we will be adopting the CLP methods, SOM01.2 and ILM05.4 in place of the PRP's SW846 methods listed in the attached PDF file. Reporting limits required are listed in the attached PDF file in Table 1a under "RL." If there are any reporting limits that cannot be met by the requested methods, please contact Andrea Soo immediately at sooac@cdm.com or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (sooac@cdm.com) and Nancy Forman (FormanNA@cdm.com), and Jonah Jackson (JacksonJM@cdm.com) when available. Quantitation limits are provided in the PDF file that was attached to this lab request.

Appendix D

Laboratory Case Narrative

Shealy Environmental Services, Inc.

Contract Number: EPW05031
Date: 09/23/2008

SDG Narrative

Case 37823
SDG C0005

EPA Sample Numbers

EPA Sample Number	VOA Fraction	Dilution/ Reanalysis	SVOA Fraction	Dilution/ Reanalysis
C0005	Yes	Yes	C0005	No
C0008	Yes	No	C0008	No

Columns	VOA DB-624, 30m x 0.25mm x 1.4um BNA DB-5MS, 30m x 0.25mm x 0.5um
Trap	OI Trap #10

VOA Equation

$$\text{Soil sample concentration (ug/Kg)} = \frac{(A_x)(I_s)(DF)}{(A_{is})(\overline{RRF})(W_s)(D)}$$

Where
A_x is the area of the characteristic ion (EICP) for the compound to be measured.
A_{is} is the area of the characteristic ion (EICP) for the internal standard.
I_s is the amount of internal standard added, in ng.
$\overline{RRF}$ is the mean relative response factor from the initial calibration.
DF is the dilution factor.
V_o is total volume of water purged, in mL.

Ws is the weight of sample added to the purge tube in g.

$$D = \frac{100 - \%\text{moisture}}{100}$$

BNA Equation

$$\text{Soil sample concentration (ug/Kg)} = \frac{(A_x)(I_s)(V_t)(DF)(GPC)}{(A_{is})(\overline{RRF})(V_i)(W_s)(D)}$$

Where
A_x is the area of the characteristic ion (EICP) for the compound to be measured.
A_{is} is the area of the characteristic ion (EICP) for the internal standard.
I_s is the amount of internal standard added, in ng.
$\overline{RRF}$ is the mean relative response factor from the initial calibration.
DF is the dilution factor.
$GPC = V_{in}/V_{out}$: GPC factor.
V_{in} is the volume of extract loaded onto GPC column.
V_{out} is the volume of extract collected after GPC cleanup.
V_t is volume of the concentrated extract in uL. (If no GPC cleanup is performed, then $V_t = 1000$uL. If GPC cleanup is performed, then $V_t = V_{out}$.).
V_i is the volume of the extract injected in uL.
V_o: Volume of water extracted in mL

W_s is the weight of sample extracted in g..

$$D = \frac{100 - \%\text{Moisture}}{100}$$

Sample Receiving

The cooler temperature associated with these samples was 4.0°C.

The TR/COC listed sample tag numbers 100, 101, 102, and 103 for sample C0005. However, this sample was received with one 4 oz. jar, a plastic bag containing three encores, and sample tags 100 and 103. Sample tags 101 and 102 were not received with the sample.

The TR/COC listed sample tag numbers 106, 107, 108, and 109 for sample C0008. However, this sample was received with one 4 oz. jar, a plastic bag containing three encores, and sample tags 106 and 109. Sample tags 107 and 108 were not received with the sample.

As per Region 3, the TAT for this CASE was changed from 7-days to 14-days.

VOA Fraction

Since the VOA soil samples were collected in coring devices, it was beyond the laboratory's control if some of the sample weights varied significantly from 5.0 grams, as required in section 10.1.4.7 of Exhibit D Low/Medium volatiles, SOM01.1 (5/2005).

Sample C0005 had seven DMC recoveries outside the acceptance limits in the initial analysis. The sample was re-analyzed. The re-analysis had eight DMC recoveries outside the acceptance limits. Both sets of data are included in this package.

Manual integration was performed on 2-Butanone for standard VSTD005A1 due to incorrect auto integration.

The peak eluting at ~5.3min on MSD5 in all analyses is pentafluorobenzene. This internal standard compound is not being used for quantitation. This compound is not being identified as a TIC.

SVOA Fraction

Manual integration was performed on Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, and Indeno(1,2,3-cd)pyrene for C0005 due to incorrect auto integration.

I certify that this Sample Data Package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy Sample Data Package and in the electronic data deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

S. A. Parikh

Saroj A. Parikh
Project Manager
September 23, 2008

Two Penn Center Plaza
1500 JFK Boulevard, Suite 624
Philadelphia, Pennsylvania 19102
tel: 215 636-0600
fax: 215 636-9811

September 26, 2008

Ms. Judy Snyder
ESAT Auditor, Region 3
Lockheed Martin Environmental Services
701 Mapes Road
Fort Meade, MD 20755-5350

PROJECT:	Contract No.: EP-S3-07-06
WORK ASSIGNMENT NO.:	006-RSBD-A3E2
DOCUMENT NO.:	3330-006-EO-LABS-00374
SUBJECT:	Memo to File for RAS Case Number 37823
	Price Battery Superfund Site, Operable Unit 2

Dear Ms. Judy Snyder:

The purpose of this Memo-to-File is to acknowledge and correct or clarify issues for the Organic Traffic Report/Chain of Custody Record (TR/COC) for the subject case. The required corrections or clarifications are described below for the following issues:

Issue #1: Please send the Regional copy of the chain of custody for samples C0005 and C0008 or identify QC/Blanks or duplicate pairs by return e-mail.

Response: A Regional copy of the TR/COC was sent on September 25, 2008 and is also attached. There was no QC or blank samples in the shipment.

Issue #2: TR# 3-594095470-091108-0004 for samples shipped on 9/11/08 shows tags 100-103 for sample C0005 and tags 106-109 for sample C0008. The laboratory received only tags 100 and 103 for sample C0005 and tags 106 and 109 for sample C0008. Please delete tag numbers 101, 102, 107, and 108 from the chain of custody via memo to file.

Response: Sample tag numbers 101, 102, 107, and 108 should have been attached to the correct bottles in the shipment. Please note that the correct sample tag/sample ID combinations for the samples shipped under TR# 3-594095470-091108-0004 are listed in the table on the following page.

CDM

Price Battery OU2				
Case 37823				
SDG C0005				
Tag No.	**CLP ID**	**Analysis**	**Trip Report**	**Comment**
100	C0005	SVOC	3-594095470-091108-0004	
101	C0005	VOC	3-594095470-091108-0004	
102	C0005	VOC	3-594095470-091108-0004	
103	C0005	VOC	3-594095470-091108-0004	
104	C0005	VOC	3-594095470-091108-0004	Tag was not listed on chain, but was included with bottle
106	C0008	SVOC	3-594095470-091108-0004	
107	C0008	VOC	3-594095470-091108-0004	
108	C0008	VOC	3-594095470-091108-0004	
109	C0008	VOC	3-594095470-091108-0004	
110	C0008	VOC	3-594095470-091108-0004	Tag was not listed on chain, but was included with bottle

Issue #3: The turn-around time (TAT) for this case is listed on the chain of custody as 21 days. The correct TAT is 14 days. Please correct via memo to file.

Response: The correct analytical TAT for the samples shipped under TR# 3-594095470-091108-0004 is, in fact, 21 days. Per an e-mail request sent by Andrea Soo on 9/17/08, the analytical TAT was changed from 14 days to 21 days, as approved by the Region.

Should you have any questions regarding this memorandum, please feel free to contact me at 703-859-5233.

Sincerely,

for

David R. Michailof
CDM

cc: John Kwedar, EPA CST
Dan Slizys, EPA CST
Lisa Penix, EPA ESAT
John Banks, EPA Remedial Project Manager
Lucinda Pype, CDM PM
David Michailof, CDM FTL
CDM Federal Project File
CDM Federal Document Control

Saroj Parikh

From: "Walsh, Colin" <cwalsh20@fedcsc.com>
To: "Saroj Parikh" <sparikh@shealylab.com>
Cc: "Kerry Hinshaw" <khinshaw@shealylab.com>; <mwoodrum@shealylab.com>; <slizys.dan@epa.gov>; <Harris.Carroll@epamail.epa.gov>; <thaung.khin-cho@epa.gov>; <kwedar.john@epa.gov>
Sent: Wednesday, September 17, 2008 1:47 PM
Attach: ATT00013.htm; CASE 37823 SDG C0005 TR_TAGS_SCAN.PDF
Subject: Region 03 | Case 37823 | Lab SHEALY | SDG C0005 | Issue Multiple | FINAL

Saroj,

Summary Start

-Discrepancies with tags, jars, and/or TR/COC-

Issue 1: The TR/COC lists the TAT as 21 days; however, the Scheduling Notification Form lists the TAT as 7 days.

Resolution 1: In accordance with previous direction from Region 3, the laboratory will proceed with the turnaround time indicated on the Scheduling Notification Form, note the issue in the Case/SDG Narrative, and proceed with the analysis of the samples. This resolution will be applied to all TR/COCs received for this Case.

Issue 2: The TR/COC lists sample tag numbers 100-103 for sample C0005 and 106-109 for sample C0008; however, the laboratory only received tag numbers 100 and 103 for sample C0005 and 106 and 109 for sample C0008. One tag was attached to the 4 oz jar and the other tag was attached to a bag containing the three 5-g Encores for each sample.

Resolution 2: Per Region 3, the laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the samples.

-Laboratory problems-

Issue 3: The laboratory did not receive a container for % solids for any of the samples. The laboratory would like to use the 4 oz jar received for each sample for % solids.

Resolution 3: Per Region 3, the laboratory will use the 4 oz jar for the % solids determination. The laboratory will note the issue in the Case/SDG Narrative and proceed with the analysis of the samples.

Summary End

Please let me know if you have any further questions or problems.

Thanks,

Colin

Colin G. Walsh

CSC

Judy
Snyder/ESC/R3/USEPA/US

09/25/2008 03:31 PM

To Colleen Walling/DC/USEPA/US, John Bankson/DUL/USEPA/US, Melisa Hoffman/R3/USEPA/US, Dan Slizys/ESC/R3/USEPA/US, Carroll
cc sooac@cdm.com, Victor Yastrop, pypelj@cdm.com

bcc

Subject memo to file and regional copies of COC needed for samples C0005 and C0008, case 37823, Price Battery

INFORMATION CONTAINED BELOW DOES NOT CONSTITUTE TECHNICAL DIRECTION: THE SAMPLING/FIELD CONTRACTOR SHALL CONTACT HIS EPA CONTRACTING OFFICER FOR TECHNICAL DIRECTION.

Case 37823, Price Battery
EPA Project Lead: John Banks
Lab: Shealy
SDG: C0005
POC: Andrea Soo, CDM
Site Lead: Lucinda Pype, CDM

1. Please send the regional copy of the chain of custody for samples C0005 and C0008 or identify QC/Blanks or duplicate pairs by return e-mail.

2. Chain of Custody document 3-594095470-091108-0004 which shipped 9/11/08 shows tags 100-103 for sample C0005 and tags 106-109 for sample C0008. The laboratory received only tags 100 and 103 for sample C0005 and tags 106 and 109 for sample C0008. Please delete these tag numbers from the chain of custody via memo to file.

3. Turn around time for this case is listed on the chain of custody as 21 days. The correct turn around time is 14 days. Please correct via memo to file.

****

Judy Snyder
ESAT Auditor, Region 3
Lockheed Martin Enterprise Solutions & Services
701 Mapes Road
Ft. Meade, MD 20755-5350
Phone 410-305-3015
Fax 410-305-3095

Appendix E

Tentatively Identified Compounds (TICs)

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C0005

Lab Name: Shealy Environmental Services, Inc. Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 37823 Mod. Ref No.: _____ SDG No.: C0005

Matrix: (SOIL/SED/WATER) Soil Lab Sample ID: JI12005-001

Sample wt/vol: 30.2 (g/mL) g Lab File ID: 091805

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC

% Moisture: 31 Decanted: (Y/N) N Date Received: 09/12/2008

Concentrated Extract Volume: 500 (uL) Date Extracted: 09/15/2008

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 09/18/2008

GPC Cleanup: (Y/N) Y pH: 6.8 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01		Unknown-01	14.530	320	J
02		Unknown-02	14.590	400	J
03		Unknown-03	15.220	310	J
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E9667962	Total Alkanes	N/A		

[2]EPA-designated Registry Number.

1K - FORM I SV-TIC
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
C0008

Lab Name: Shealy Environmental Services, Inc. Contract: EP-W-05-031

Lab Code: SHEALY Case No.: 37823 Mod. Ref No.: _____ SDG No.: C0005

Matrix: (SOIL/SED/WATER) Soil Lab Sample ID: JI12005-002

Sample wt/vol: 30.7 (g/mL) g Lab File ID: 091806

Level: (TRACE or LOW/MED) LOW Extraction: (Type) SONC

% Moisture: 17 Decanted: (Y/N) N Date Received: 09/12/2008

Concentrated Extract Volume: 500 (uL) Date Extracted: 09/15/2008

Injection Volume: 1.0 (uL) GPC Factor: 2.0 Date Analyzed: 09/18/2008

GPC Cleanup: (Y/N) Y pH: 6.8 Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	31158-91-5	Hexadecanoic acid, 1,1-	13.060	450	NJ
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
	E966796[2]	Total Alkanes	N/A		

[2]EPA-designated Registry Number.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
ENVIRONMENTAL SCIENCE CENTER
701 MAPES ROAD
FORT MEADE, MARYLAND 20755-5350

DATE : October 9, 2008

SUBJECT: Region III Data QA Review

FROM : Colleen Walling
Region III ESAT RPO (3ES20)

TO : John Banks
Regional Project Manager (3HS22)

Attached is the inorganic data validation report for the Price Battery site (Case #: 37823 SDG# MC0005) completed by the Region 111 Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2763.

Attachments

cc: Andrea Soo (CDM)

TO File #: 0014 TDF# 09-115

LOCKHEED MARTIN
We never forget who we're working for™

Lockheed Martin Enterprise Solutions & Services
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597

DATE: October 8, 2008

SUBJECT: Inorganic Data Validation (IM2 Level)
Case: 37823
SDG: MC0005
Site: Price Battery

FROM: Donald M. Brown DMB
Inorganic Data Reviewer

Mahboobeh Mecanic MM
Senior Oversight Chemist

TO: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Case 37823, Sample Delivery Group (SDG) MC0005, consisted of six (6) soil samples analyzed for antimony (Sb), arsenic (As) and lead (Pb) by Bonner Analytical Testing Company (BONNER). The sample set contained no field Quality Control (QC) samples. Samples were analyzed in accordance with Contract Laboratory Program (CLP) Statement of Work (SOW) ILM05.4 through the Routine Analytical Services (RAS) program.

SUMMARY

Data were validated according to Region III Modifications to the National Functional Guidelines for Inorganic Data Review, Level IM2. Areas of concern with respect to data usability are listed below.

Data in this case have been impacted by outliers present in the laboratory blanks as well as the matrix spike and ICP serial dilution analyses. Details of these outliers are discussed under "Minor Problems", specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on a single Data Summary Form (DSF).

MINOR PROBLEMS

A continuing calibration blank (CCB) had reported results greater than the Method Detection Limits (MDLs) for Sb and As. Positive results for these analytes in affected samples which are less than or equal to five times (≤5X) the blank concentrations may be biased high and have been qualified "B" on the DSF.

Matrix spike recoveries were low (<75% but >30%) for Sb and As. Low recoveries may be attributed to matrix interferences or analyte lost during the digestion process. Positive results for these analytes in affected samples may be biased low and have been qualified "L" on the DSF unless superseded by "B" or "J". The quantitation limit for Sb in sample MC0008 may be biased low and has been qualified "UL" on the DSF.

The percent difference (%D) in the ICP serial dilution analysis was outside the control limit (>10%) for Pb. Positive results for this analyte in all samples are estimated due to possible matrix interferences and have been qualified "J" on the DSF.

NOTES

Reported results between MDLs and Contract Required Quantitation Limits (CRQLs) were qualified "J" on the DSF unless superseded by "B".

Several inconsistencies were noted on the QC forms provided in the data package. Clarifications/corrections were requested from the laboratory but were not received to the date of this report. Corrections were made by the reviewer for obvious errors.

The cooler chest used to transport the samples in this SDG had an interior temperature of 9.0°C when received by the laboratory. This temperature is outside the required control limit of 4°C ± 2°C. Due to the thermostability of metals, no data were qualified based on this cooler temperature.

Sample MC0009 was reanalyzed at a three-fold (3X) dilution in order to bring the concentration of Pb within the linear range of the instrument. The result for this analyte in this sample was reported from the diluted analysis and annotated with a "+" on the DSF.

The post-digestion spike recovery was high (>125%) for As; however, data are not qualified based on the post-digestion spike recovery.

Data for Case 37823, SDG MC0005, were reviewed in accordance with the National Functional Guidelines for Evaluating Inorganic Analyses with Modifications for use within Region III.

ATTACHMENTS

INFORMATION REGARDING REPORT CONTENT

Table 1A is a summary of qualifiers applied to the laboratory-generated results during data validation.

TABLE 1A	SUMMARY OF QUALIFIERS ON DATA SUMMARY FORMS AFTER DATA VALIDATION
TABLE 1B	CODES USED IN COMMENTS COLUMN OF TABLE 1A
APPENDIX A	GLOSSARY OF DATA QUALIFIER CODES
APPENDIX B	DATA SUMMARY FORMS
APPENDIX C	CHAIN OF CUSTODY RECORDS
APPENDIX D	LABORATORY CASE NARRATIVE

DCN: 37823.MC0005IM2.doc

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

Case 37823, SDG MC0005

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Sb	MC0006, MC0010, MC0011	B		High	CCB (2.410 J µg/L) MSL (32%)
	MC0005, MC0009	J			>MDL<CRQL MSL (32%)
	MC0008		UL	Low	MSL (32%)
As	MC0008	B		High	CCB (1.650 J µg/L) MSL (70%)
	All Samples Except MC0008	L		Low	>MDL<CRQL MSL (70%)
Pb	All Samples	J			ISD (23%)

* See explanation of comments in Table 1B

TABLE 1B
CODES USED IN COMMENTS COLUMN

CCB	=	Continuing calibration blanks had results >MDLs [results are in parenthesis]. Positive results which are ≤5X the blank concentrations may be biased high.
MSL	=	Matrix spike recovery was low (<75% but >30%) [% recovery is in parenthesis]. Positive results and quantitation limits may be biased low.
>MDL = <CRQL		Reported results are greater than MDLs but less than CRQLs and are considered estimated.
ISD	=	Percent difference (%D) in the ICP serial dilution analysis was outside the control limit (>10%) [%D is in parenthesis]. Positive results are estimated.

Appendix A

Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unreliable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

Appendix B

Data Summary Forms

Case #: 37823 SDG : MC0005 Number of Soil Samples : 6

Site : PRICE BATTERY Number of Water Samples : 0

Lab. : BONNER

Sample Number :		MC0005		MC0006		MC0008		MC0009		MC0010	
Sampling Location :		MP08-09		MP08-33		MP08-81		MP09-09		MP09-33	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		9/11/2008		9/11/2008		9/11/2008		9/11/2008		9/11/2008	
Time Sampled :		12:15		12:31		12:55		15:55		16:00	
%Solids :		74.6		79.1		82.3		65.6		48.6	
Dilution Factor :		1.0		1.0		1.0		1.0 / 3.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6	2.5	J	0.35	B		UL	2.9	J	0.94	B
ARSENIC	1	7.2	L	2.6	L	0.53	B	4.3	L	6.9	L
*LEAD	1	151	J	21.5	J	12.3	J	7080+	J	114	J

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100) Revised 09/99

+ = Result reported from diluted analysis.

Sample Number :		MC0011									
Sampling Location :		MP08-57									
Matrix :		Soil									
Units :		mg/Kg									
Date Sampled :		9/11/2008									
Time Sampled :		12:45									
%Solids :		74.4									
Dilution Factor :		1.0									
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6	1.0	B								
ARSENIC	1	3.0	L								
*LEAD	1	224	J								

CRQL = Contract Required Quantitation Limit SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100) Revised 09/99

Appendix C

Chain-of-Custody Records

USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 37823 **R**
DAS No:

Region:	3
Project Code:	CT4356
Account Code:	
CERCLIS ID:	PAN000305679
Spill ID:	AE2
Site Name/State:	Price Battery OU2 090908/PA
Project Leader:	Lucinda Pype
Action:	Combined RI/FS
Sampling Co:	CDM

Date Shipped:	9/11/2008
Carrier Name:	FedEx
Airbill:	796086941863
Shipped to:	Bonner Analytical 2703 Oak Grove Road Hattiesburg MS 39402 (601) 264-2854

Chain of Custody Record

Relinquished By	(Date / Time)	Received By	(Date / Time)
1			
2.			
3.			
4.			

Sampler Signature:

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MC0005	Soil (>12")/ David Michailof	L/G	SB-AS-PB (21)	100 (Ice Only) (1)	MP08-09	S: 9/11/2008	12:15	C0005	--
MC0006	Soil (>12")/ David Michailof	L/G	SB-AS-PB (21)	104 (Ice Only) (1)	MP08-33	S: 9/11/2008	12:31		--
MC0008	Soil (>12")/ David Michailof	L/G	SB-AS-PB (21)	106 (Ice Only) (1)	MP08-81	S: 9/11/2008	12:55	C0008	--
MC0009	Soil (>12")/ David Michailof	L/G	SB-AS-PB (21)	110 (Ice Only) (1)	MP09-09	S: 9/11/2008	15:55		--
MC0010	Soil (>12")/ David Michailof	L/G	SB-AS-PB (21)	111 (Ice Only) (1)	MP09-33	S: 9/11/2008	16:00		--
MC0011	Soil (>12")/ David Michailof	L/G	SB-AS-PB (21)	112 (Ice Only) (1)	MP08-57	S: 9/11/2008	12:45		--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: SB-AS-PB = Sb, As, Pb	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 3-465653622-092908-0001

REGION COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Charles Chan, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-5644; Fax 703/818-4602

U.S. EPA Region III Analytical Request Form

Revision 10.06

SJS 9-2-08

ASOAB USE ONLY		
RAS#	CT1356	Analytical TAT
DAS#		7/14
NSF#		

37823

Date: 25 August 2008	Site Activity: RI/FS Oversight		
Site Name: Price Battery		Street Address: 251 Grand Street	
City: Hamburg	State: PA	Latitude:	Longitude:
Program: Superfund	Acct. #: 2008 T03W 302DD2C A3E2BD02	CERCLIS #: PAN000305679	
Site ID: N/A	Spill ID: N/A	Operable Unit: 2	
Site Specific QA Plan Submitted: ☐ No ☒ Yes	Title: Price Battery Operable Unit 2 RI/FS Oversight Draft SMP		Date Approved: 5/12/08
EPA Project Leader: John Banks	Phone#: 215-814-3214	Cell Phone #:	E-mail: banks.john-d@epa.gov
Request Preparer: Andrea Soo	Phone#: 610 293 0450	Cell Phone #: 610-304-0803	E-mail: sooac@cdm.com
Site Leader: Lucinda Pype	Phone#: 717-560-7500	Cell Phone #:	E-mail: pypelj@cdm.com
Contractor: CDM	EPA CO/PO: Melisa Hoffman		

#Samples 34	Matrix: soil	Parameter: Lead, Antimony, and Arsenic	Bonner	Method: ILM05.4 ICP-AES 28183
#Samples 1	Matrix: soil	Parameter: ICP metals + Hg	↓	Method: ILM05.4 ICP-AES 28184
#Samples 10	Matrix: soil	Parameter: TCL VOC	Shealy	Method: SOM01.2, low soil 28186
#Samples 10	Matrix: soil	Parameter: TCL SVOC	↓	Method: SOM01.2, low soil 28187
#Samples 2	Matrix: soil	Parameter: TCL PCB	↓	Method: SOM01.2 28188
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Total)	Bonner	Method: ILM05.4 ICP-AES 28155
#Samples 2	Matrix: water non-potable	Parameter: ICP Metals + Hg (Dissolved)	↓	Method: ILM05.4 ICP-AES
#Samples 2	Matrix: water non-potable	Parameter: TCL VOC	Shealy	Method: SOM01.2, trace water 28189
#Samples 2	Matrix: water non-potable	Parameter: TCL SVOC	↓	Method: SOM01.2, low water 28190

Ship Date From: 9/08/2008 (9/12)	Ship Date To: 10/31/2008	Org. Validation Level M3	Inorg. Validation Level IM2

Unvalidated Data Requested: ☐ No ☒ Yes If Yes, TAT Needed: ☐ 14 days ☒ 7days ☐ 72hrs ☐ 48hrs ☐ 24hrs ☐ Other (Specify) + 3 days for CADRE ESAT

Validated Data Package Due: ☐ 42 days ☐ 30 days ☐ 21days ☐ 14 days ☒ Other (Specify) 28 days 7/21 14/514

Electronic Data Deliverables Required: ☐ No ☒ Yes (EDDs will be provided in Region 3 EDD Format)

Special Instructions: The unvalidated data is requested via SMO/ESAT – 7 days analytical TAT + 3 days for compliance review = 10 days at no additional cost. Please note that we will be adopting the CLP methods, SOM01.2 and ILM05.4 in place of the PRP's SW846 methods listed in the attached PDF file. Reporting limits required are listed in the attached PDF file in Table 1a under "RL." If there are any reporting limits that cannot be met by the requested methods, please contact Andrea Soo immediately at sooac@cdm.com or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (sooac@cdm.com) and Nancy Forman (FormanNA@cdm.com), and Jonah Jackson (JacksonJM@cdm.com) when available. Quantitation limits are provided in the PDF file that was attached to this lab request.

Appendix D

Laboratory Case Narrative

USEPA - CLP

COVER PAGE

Lab Name: Bonner Analytical Testing Contract: EPW06055

Lab Code: BONNER Case No.: 37823 NRAS No.: SDG No.: MC0005

SOW No.: ILM05.4

EPA SAMPLE NO.	Lab Sample ID:
MC0005	0809155-01
MC0005D	0809155-01DUP
MC0005S	0809155-01MS
MC0006	0809155-02
MC0008	0809155-03
MC0009	0809155-04
MC0010	0809155-05
MC0011	0809155-06

		ICP-AES	ICP-MS
Were ICP-AES and ICP interelement corrections applied?	(Yes/No)	Yes	Yes
Were ICP-AES and ICP background corrections applied?	(Yes/No)	Yes	Yes
If yes, were raw data generated before application of background corrections?	(Yes/No)	No	No

Comments:

(DW) 10/8/08 ~~As and~~ Pb are flagged as "E" estimated due to interferences occuring during the analysis of the serial dilution.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance designee, as verified by the following signature.

Signature: CB Name: Chris Bonner

Date: 9/25/8 Title: President

Bonner Analytical Testing Company

2703 Oak Grove Road, Hattiesburg, MS 39402
Phone: (601) 264-2854 Fax: (601) 268-7084

SDG NARRATIVE:

SDG Number: MC0005
Case Number: 37823
Contract Number: EPW06055

Sample Receipt:
On September 12, 2008, we received 6 soil samples under FedEx airbill number 7960 8694 1863. Custody seals were present and intact. Cooler temp was determined to be 9°C. Samples were received in good condition except for the following discrepancies:

1. No QC is listed on the TR/COC for SDG MC0005. We would like to use MC0005 as QC. Please advise if this is acceptable.
Resolution: In accordance with previous direction from Region 3, the laboratory will select a sample for laboratory QC as long as the sample is not a PE, blank, or rinsate sample. The laboratory will note the issue in the Case/SDG Narrative, notify the SMO coordinator of the sample selected for laboratory QC, and proceed with the analysis of the samples.
SMO will note that the laboratory selected sample MC0005 (SDG MC0005) as laboratory QC.

Metals
The analytical run began 9/17/2008 @ 1206 hrs. MC0009 was over the linear range for Pb; the sample was reanalyzed at an appropriate dilution. The matrix spike failed for As and Sb; a post spike was analyzed at twice the CRQL for Sb and at twice the indigenous level for As.

CSF:
No Discrepancies

Sample Equation:

Lab ID 0809155-01 EPA Sample # MC0005

Date & Time 9/17/2008@1258

Metals: 11260.3 µg/L * (0.100 L) / (1.00 g) * 100 % / 74.6% * 1000 g / 1 kg * 1 mg / 1000 µg = 151 mg/kg
(Analyte Pb)

Authorized by _____
Daniel Antrim
Document Control Officer

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

Final Analytical Report

Site Name	Price Battery
Sample Collection Date(s)	09/11/08 12:45
Contact	John Banks
Report Date	10/18/08 15:17
Project #	DAS R33067
Work Orders	0809015

Analyses included in this report:

DROs by EPA 8015D

Percent Dry Weight (105C)

Approved for Release

OASQA Representative

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: Price Battery **Project #: DAS R33067**

Report Narrative

This note pertains to Diesel Range Organics analysis only: Sample 0809015-01 contains an unknown petroleum hydrocarbon that elutes outside of the diesel range. It is therefore not a "Diesel Range Organic". The petroleum hydrocarbon elutes within the heavy fuel oil range. The chromatographic pattern somewhat resembles Fuel Oil #5.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: Price Battery **Project #: DAS R33067**

ANALYTICAL REPORT FOR SAMPLES

Station ID	Laboratory ID	Matrix	Date Sampled	Date Received
MP8-57	0809015-01	Soil	09/11/08 12:45	09/18/08 11:40

Site Name: Price Battery **Project #: DAS R33067**

USEPA Contract Laboratory Program
Generic Chain of Custody

Reference Case
Client No: R33067
SDG No:
L

Date Shipped: 9/17/2008
Carrier Name: FedEx
Airbill: 790035956613
Shipped to:

Chain of Custody Record

Sampler Signature: D. M

	Relinquished By	(Date / Time)	Received By	(Date / Time)
1	D. M	9/17/08 MC	[signature]	9/18/08 1140
2				
3				
4				

For Lab Use Only
Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		FOR LAB USE ONLY Sample Condition On Receipt
MP8-57	Soil (>12") David Nicholas	L/G	TPH (7)	006-1000 (Ice Only) (1)	MP8-57	S: 9/11/2008	12:55	0809015-01

Shipment for Case Complete (Y/N)	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:
Y			5.3°C	
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? ___	Shipment Iced? ___

TPH = Total Petroleum Hydrocarbons

TR Number: 3-103246740-091708-0004

LABORATORY COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, Attn: Heather Bauer, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

F2V5.1.047 Page 1 of 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: Price Battery
Station ID: MP8-57
Sample Matrix: Soil
Project #: DAS R33067
Lab ID: 0809015-01
Date Collected: 09/11/2008

Classical Chemistry Parameters

Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	77.0			1	09/30/08	10/01/08 14:36	USGS I-5753-85

Diesel Range Organics

Targets

Analyte	Result ug/g dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
#2 Diesel Fuel	U		5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222
Kerosene	U		5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222
Jet Fuel A	U		5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222
JP-5 Military Fuel	U		5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222
Fuel Oil #4	U		5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222
Fuel Oil #5	U	C	5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222
Fuel Oil #6 (Bunker C)	U		5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222
Diesel Range Organics	U		5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222

Surrogates

Analyte	Result ug/g dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: n-Triacontane	4.66		**119 %**	*50-150*	09/25/08	10/04/08 01:58	*EPA 8015D/R3QA222*

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: Price Battery **Project #: DAS R33067**

QC Data
Classical Chemistry Parameters

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BI83001 - PD60/PD105										
Duplicate (BI83001-DUP1)		**Source: 0809015-01**		Prepared: 09/30/08 08:36		Analyzed: 10/01/08 14:36				
% Solids	76.8		% by Weight		77.0			0.2	20	

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: Price Battery **Project #: DAS R33067**

QC Data
Diesel Range Organics

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BI82501 - EPA 3540C DROs										
Blank (BI82501-BLK1)				Prepared: 09/25/08 09:30		Analyzed: 10/04/08 01:09				
#2 Diesel Fuel	U	4.00	ug/g wet							
#2 Diesel Fuel - 75% Weathered	U	4.00	"							
Kerosene	U	4.00	"							
Jet Fuel A	U	4.00	"							
JP-5 Military Fuel	U	4.00	"							
Fuel Oil #4	U	4.00	"							
Fuel Oil #5	U	4.00	"							
Fuel Oil #6 (Bunker C)	U	4.00	"							
Diesel Range Organics	U	4.00	"							
Surrogate: n-Triacontane	*3.25*		"	*3.0000*		*108*	*50-150*			
LCS (BI82501-BS1)				Prepared: 09/25/08 09:30		Analyzed: 10/04/08 01:33				
#2 Diesel Fuel	48.6	4.00	ug/g wet	40.000		121	70-130			
Surrogate: n-Triacontane	*2.48*		"	*3.0000*		*83*	*50-150*			
Matrix Spike (BI82501-MS1)		**Source: 0809015-01**		Prepared: 09/25/08 09:30		Analyzed: 10/04/08 02:23				
#2 Diesel Fuel	45.3	5.20	ug/g dry	51.962	0.00	87	70-130			
Surrogate: n-Triacontane	*3.51*		"	*3.8971*		*90*	*50-150*			
Matrix Spike Dup (BI82501-MSD1)		**Source: 0809015-01**		Prepared: 09/25/08 09:30		Analyzed: 10/03/08 02:47				
#2 Diesel Fuel	44.4	5.20	ug/g dry	51.962	0.00	85	70-130	2	30	
Surrogate: n-Triacontane	*2.69*		"	*3.8971*		*69*	*50-150*			

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Notes and Definitions

C	See analyst's comments and observations concerning this result.
NR	Not Reported
RPD	Relative Percent Difference
U	Analyte included in the analysis, but not detected at or above the quantitation limit.

Quantitation Limit: The lowest concentration of an analyte that can be reliably measured within specified limits of precision and accuracy for a specific laboratory analytical method and that takes into account analytical adjustments made during sample preparation and analysis.

SOLID SAMPLE RESULTS - REPORTING PROTOCOL: Solid samples where % Solids (percent dry wt at 105 degrees C) has been performed, are analyzed wet and converted to a dry weight result for reporting purposes. This is routine for organics and most inorganic analyses. When metals and mercury analyses are requested, solid samples are routinely analyzed and reported on a dry weight basis. Solid samples for metals/mercury are prepared for analysis by an initial drying at 60 degree C and homogenization before digestion. Oil-type samples will be analyzed and reported on a wet weight basis for all analyses because of the nature of the sample. Any exceptions to the protocol will be noted with a qualifier

Appendix C

EPA Region III Risk-Based Concentrations - September 2008

Contaminant		Screening Levels							Protection of Groundwater	
Analyte	CAS No.	Residential Soil mg/kg	key	Industrial Soil mg/kg	key	Tapwater ug/L	key	MCL ug/L	Risk-based SSL mg/kg	MCL-based SSL mg/kg
Acephate	30560-19-1	56 00	c**	200 00	c*	7.70	c*		0.00	
Acetaldehyde	75-07-0	11.00	c**	53 00	c**	2 20	c**		0 00	
Acetochlor	34256-82-1	1200 00	n	12000 00	n	730 00	n		0.40	
Acetone	67-64-1	61000 00	n	610000.00	nms	22000 00	n		4 40	
Acetone Cyanohydrin	75-86-5	200 00	n	2100.00	n	58 00	n		0 01	
Acetonitrile	75-05-8	870.00	n	3700 00	n	130 00	n		0 03	
Acetophenone	98-86-2	7800 00	ns	100000 00	nms	3700 00	n		1.10	
Acrolein	107-02-8	0 16	n	0 68	n	0 04	n		0.00	
Acrylamide	79-06-1	0 11	c	0 38	c	0 02	c		0 00	
Acrylic Acid	79-10-7	30000 00	n	290000 00	nm	18000 00	n		3 70	
Acrylonitrile	107-13-1	0 24	c*	1 20	c*	0 05	c*		0.00	
Adiponitrile	111-69-3	8500000 00	nm	36000000 00	nm					
Alachlor	15972-60-8	8.70	c*	31 00	c	1.20	c	2 00	0 00	0.00
ALAR	1596-84-5	9200 00	n	92000 00	n	5500 00	n		1 20	
Aldicarb	116-06-3	61 00	n	620.00	n	37.00	n		0 01	
Aldicarb Sulfone	1646-88-4	61 00	n	620 00	n	37 00	n		0 01	
Aldrin	309-00-2	0.03	c*	0 10	c	0 00	c		0 00	
Ally	74223-64-6	15000 00	n	150000 00	nm	9100 00	n		3 10	
Allyl Alcohol	107-18-6	310 00	n	3100 00	n	180 00	n		0 04	
Allyl Chloride	107-05-1	1 80	n	7 70	n	2 10	n		0 00	
Aluminum	7429-90-5	77000 00	n	990000 00	nm	37000 00	n		55000.00	
Aluminum Phosphide	20859-73-8	31 00	n	410 00	n	15 00	n			
Amdro	67485-29-4	18 00	n	180 00	n	11 00	n		14000 00	
Ametryn	834-12-8	550 00	n	5500 00	n	330 00	n		0 36	
Aminophenol, m-	591-27-5	4900 00	n	49000 00	n	2900 00	n		1 00	
Aminophenol, p-	123-30-8	1200 00	n	12000 00	n	730 00	n		0.25	
Amitraz	33089-61-1	150 00	n	1500 00	n	91 00	n		120 00	
Ammonia	7664-41-7	140000000 00	nm	600000000 00	nm					
Ammonium Perchlorate	7790-98-9	55 00	n	720 00	n	26 00	n			
Ammonium Sulfamate	7773-06-0	16000 00	n	200000 00	nm	7300 00	n			
Aniline	62-53-3	85 00	c**	300.00	c*	12 00	c*		0 00	
Antimony (metallic)	7440-36-0	31 00	n	410 00	n	15 00	n	6 00	0 66	0.27
Antimony Pentoxide	1314-60-9	39 00	n	510 00	n	18 00	n			
Antimony Potassium Tartrate	11071-15-1	70 00	n	920 00	n	33.00	n			
Antimony Tetroxide	1332-81-6	31 00	n	410 00	n	15 00	n			
Antimony Trioxide	1309-64-4	31 00	n	410 00	n	15.00	n			

Key I = IRIS, P = PPRTV, A = ATSDR, C = Cal EPA, H = HEAST, W = WHO, S = see user guide Section 5, L = see user guide on lead, M = mutagen, V = volatile, c = cancer; * = where n SL < 100X c SL, ** = where n SL < 10X c SL, n = noncancer; m = Concentration may exceed ceiling limit (See User's Guide), s = Concentration may exceed Csat (See User's Guide), SSL values are bsed on DAF=1

Contaminant		Screening Levels							Protection of Groundwater	
		Residential Soil	key	Industrial Soil	key	Tapwater	key	MCL	Risk-based SSL	MCL-based SSL
Analyte	CAS No.	mg/kg		mg/kg		ug/L		ug/L	mg/kg	mg/kg
Apollo	74115-24-5	790 00	n	8000 00	n	470 00	n		610 00	
Aramite	140-57-8	19 00	c	69 00	c	2 70	c		0.11	
Arsenic, Inorganic	7440-38-2	0 39	c*	1 60	c	0 05	c	10 00	0 00	0 29
Arsine	7784-42-1	71000.00	n	300000 00	nm					
Assure	76578-14-8	550 00	n	5500 00	n	330 00	n		3 60	
Asulam	3337-71-1	3100 00	n	31000 00	n	1800 00	n		0 52	
Atrazine	1912-24-9	2 10	c	7 50	c	0 29	c	3 00	0 00	0.00
Avermectin B1	65195-55-3	24 00	n	250 00	n	15.00	n		0 04	
Azobenzene	103-33-3	4 90	c	22 00	c	0 12	c		0 00	
Barium	7440-39-3	15000.00	n	190000 00	nm	7300 00	n	2000.00	300 00	82 00
Baygon	114-26-1	240 00	n	2500 00	n	150 00	n		0.04	
Bayleton	43121-43-3	1800 00	n	18000 00	n	1100 00	n		12 00	
Baythroid	68359-37-5	1500 00	n	15000 00	n	910 00	n		330 00	
Benefin	1861-40-1	18000 00	n	180000 00	nm	11000 00	n		210 00	
Benomyl	17804-35-2	3100 00	n	31000 00	n	1800 00	n		2 30	
Bentazon	25057-89-0	1800 00	n	18000.00	n	1100 00	n		0 30	
Benzaldehyde	100-52-7	7800.00	ns	100000 00	nms	3700 00	n		0 97	
Benzene	71-43-2	1 10	c*	5 60	c*	0.41	c	5 00	0 00	0 00
Benzenethiol	108-98-5	0 78	n	10 00	n	0 37	n		0 00	
Benzidine	92-87-5	0 00	c	0.01	c	0 00	c		0 00	
Benzoic Acid	65-85-0	240000 00	nm	2500000 00	nm	150000 00	n		33 00	
Benzotrichloride	98-07-7	0 05	c	0 22	c	0 01	c		0 00	
Benzyl Alcohol	100-51-6	31000.00	n	310000 00	nm	18000 00	n		4 20	
Benzyl Chloride	100-44-7	3 80	c**	17 00	c**	0 40	c**		0.00	
Beryllium and compounds	7440-41-7	160 00	n	2000 00	n	73 00	n	4 00	58 00	3 20
Bidrin	141-66-2	6 10	n	62 00	n	3 70	n		0 00	
Bifenox	42576-02-3	550.00	n	5500 00	n	330 00	n		2 60	
Biphenthrin	82657-04-3	920 00	n	9200 00	n	550 00	n		3500 00	
Biphenyl, 1,1'-	92-52-4	3900 00	ns	51000 00	ns	1800 00	n		23 00	
Bis(2-chloroethoxy)methane	111-91-1	180 00	n	1800 00	n	110 00	n		0 02	
Bis(2-chloroethyl)ether	111-44-4	0.19	c	0.90	c	0 01	c		0 00	
Bis(2-chloro-1-methylethyl) ether	108-60-1	3.50	c	17 00	c	0 32	c		0 00	
Bis(2-ethylhexyl)phthalate	117-81-7	35 00	c*	120 00	c*	4 80	c	6 00	1 60	2 00
Bis(chloromethyl)ether	542-88-1	0 00	c	0 00	c	0 00	c		0 00	
Bisphenol A	80-05-7	3100 00	n	31000 00	n	1800 00	n		270 00	
Boron And Borates Only	7440-42-8	16000 00	n	200000 00	nm	7300.00	n		23 00	
Boron Trifluoride	7637-07-2	990000 00	nm	4200000 00	nm					
Bromate	15541-45-4	0 91	c	4 10	c	0 10	c	10 00	0 00	0 08
Bromobenzene	108-86-1	94 00	n	410 00	n	20 00	n		0 02	
Bromodichloromethane	75-27-4	10 00	c	46 00	c	1 10	c		0 00	
Bromoform	75-25-2	61 00	c*	220 00	c*	8.50	c*		0 00	
Bromomethane	74-83-9	7 90	n	35 00	n	8 70	n		0 00	
Bromophos	2104-96-3	310 00	n	3100 00	n	180 00	n		0 77	
Bromoxynil	1689-84-5	1200 00	n	12000 00	n	730 00	n		0 78	
Bromoxynil Octanoate	1689-99-2	1200 00	n	12000 00	n	730 00	n		7.20	

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Contaminant		Screening Levels							Protection of Groundwater	
		Residential Soil	key	Industrial Soil	key	Tapwater	key	MCL	Risk-based SSL	MCL-based SSL
Analyte	CAS No.	mg/kg		mg/kg		ug/L		ug/L	mg/kg	mg/kg
Butadiene, 1,3-	106-99-0	0 08	c*	0.39	c*	0 16	c*		0 00	
Butanol, N-	71-36-3	6100 00	n	62000.00	n	3700 00	n		0 75	
Butyl Benzyl Phthlate	85-68-7	260 00	c*	910 00	c	35 00	c		0 67	
Butylate	2008-41-5	3100 00	n	31000 00	n	1800 00	n		2 60	
Butylphthalyl Butylglycolate	85-70-1	61000 00	n	620000 00	nm	37000 00	n		1100 00	
Cacodylic Acid	75-60-5	1200 00	n	12000 00	n	730 00	n			
Cadmium (Diet)	7440-43-9	70 00	n	810 00	n					
Cadmium (Water)	7440-43-9					18 00	n	5 00	1 40	0.38
Caprolactam	105-60-2	31000 00	n	310000.00	nm	18000 00	n		5 70	
Captafol	2425-06-1	3 20	c*	11 00	c	0 45	c		0 00	
Captan	133-06-2	210.00	c*	750.00	c	29 00	c		0 06	
Carbaryl	63-25-2	6100 00	n	62000 00	n	3700.00	n		2 50	
Carbofuran	1563-66-2	310 00	n	3100 00	n	180 00	n	40 00	0 06	0 01
Carbon Disulfide	75-15-0	670 00	ns	3000 00	ns	1000 00	n		0 27	
Carbon Tetrachloride	56-23-5	0 25	c	1.30	c	0 20	c	5 00	0 00	0 00
Carbosulfan	55285-14-8	610 00	n	6200 00	n	370 00	n		11 00	
Carboxin	5234-68-4	6100 00	n	62000 00	n	3700 00	n		1.30	
Chloral Hydrate	302-17-0	6100 00	n	62000 00	n	3700 00	n		0 74	
Chloramben	133-90-4	920 00	n	9200 00	n	550 00	n		0 12	
Chloranil	118-75-2	1 20	c	4 30	c	0 17	c		0 00	
Chlordane	12789-03-6	1 60	c*	6 50	c*	0 19	c*	2 00	0 03	0 35
Chlordecone (Kepone)	143-50-0	0 03	c	0 11	c	0 00	c		0 00	
Chlonmuron, Ethyl-	90982-32-4	1200 00	n	12000 00	n	730.00	n		0 26	
Chlorine	7782-50-5	7500 00	n	91000 00	n	3700 00	n		1 60	
Chlorine Dioxide	10049-04-4	2300 00	n	30000 00	n	1100 00	n			
Chlorite (Sodium Salt)	7758-19-2	2300 00	n	31000 00	n	1100 00	n			
Chloro-1,1-difluoroethane, 1-	75-68-3	59000 00	ns	250000 00	nms	100000 00	n		53 00	
Chloro-1,3-butadiene, 2-	126-99-8	8 60	n	36 00	n	14.00	n		0 01	
Chloro-2-methylaniline HCl, 4-	3165-93-3	1 10	c	3 70	c	0 15	c		0.00	
Chloro-2-methylaniline, 4-	95-69-2	1.80	c	6 40	c	0.25	c		0.00	
Chloroacetic Acid	79-11-8	120 00	n	1200 00	n	73 00	n		0 02	
Chloroacetophenone, 2-	532-27-4	43000 00	n	180000 00	nm					
Chloroaniline, p-	106-47-8	9 00	c*	32 00	c*	1 20	c		0 00	
Chlorobenzene	108-90-7	310 00	n	1500 00	ns	91 00	n	100 00	0 07	0 08
Chlorobenzilate	510-15-6	4 40	c	16 00	c	0 61	c		0 00	
Chlorobenzotrifluoride, 4-	98-56-6	210 00	n	2400 00	ns	93 00	n		0 39	
Chlorobutane, 1-	109-69-3	3100 00	ns	41000 00	ns	1500.00	n		0 62	
Chlorodifluoromethane	75-45-6	53000 00	ns	220000 00	nms	100000 00	n		44 00	
Chloroform	67-66-3	0 30	c	1 50	c	0 19	c		0 00	
Chloromethane	74-87-3	1 70	c*	8 40	c*	1 80	c		0 00	
Chloronaphthalene, Beta-	91-58-7	6300 00	ns	82000 00	ns	2900 00	n		18 00	
Chloronitrobenzene, o-	88-73-3	50 00	c**	180 00	c**	6.90	c**		0 01	
Chloronitrobenzene, p-	100-00-5	61 00	n	270.00	c**	11.00	c**		0.01	
Chlorophenol, 2-	95-57-8	390 00	n	5100 00	n	180 00	n		0 20	
Chlorothalonil	1897-45-6	160 00	c**	560 00	c*	22 00	c*		0.11	
Chlorotoluene, o-	95-49-8	1600 00	ns	20000 00	ns	730 00	n		0 80	

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Contaminant		Screening Levels							Protection of Groundwater	
		Residential Soil	key	Industrial Soil	key	Tapwater	key	MCL	Risk-based SSL	MCL-based SSL
Analyte	CAS No.	mg/kg		mg/kg		ug/L		ug/L	mg/kg	mg/kg
Chlorotoluene, p-	106-43-4	5500 00	ns	72000.00	ns	2600 00	n		2 80	
Chlorpropham	101-21-3	12000 00	n	120000 00	nm	7300.00	n		4 50	
Chlorpynfos	2921-88-2	180.00	n	1800.00	n	110 00	n		1 50	
Chlorpyrifos Methyl	5598-13-0	610 00	n	6200 00	n	370 00	n		1.50	
Chlorsulfuron	64902-72-3	3100 00	n	31000 00	n	1800 00	n		1 20	
Chlorthiophos	60238-56-4	49 00	n	490 00	n	29.00	n		0.78	
Chromium (III) (Insoluble Salts)	16065-83-1	120000 00	nm	1500000 00	nm	55000 00	n		99000000 00	
Chromium VI (chromic acid mists)	18540-29-9					110 00	n		2 10	
Chromium VI (particulates)	18540-29-9	39 00	c**	200 00	c*					
Chromium, Total (1.6 ratio Cr VI Cr III)	7440-47-3	280 00	c	1400 00	c					
Cobalt	7440-48-4	23 00	n	300 00	n	11 00	n		0 49	
Coke Oven Emissions	8007-45-2									
Copper	7440-50-8	3100.00	n	41000 00	n	1500.00	n	1300 00	51.00	46 00
Cresol, m-	108-39-4	3100 00	n	31000.00	n	1800.00	n		1 90	
Cresol, o-	95-48-7	3100.00	n	31000.00	n	1800 00	n		2 00	
Cresol, p-	106-44-5	310 00	n	3100 00	n	180 00	n		0 19	
Crotonaldehyde, trans-	123-73-9	0 34	c	1 50	c	0 04	c		0 00	
Cumene	98-82-8	2200 00	ns	11000 00	ns	680 00	n		1 30	
Cyanazine	21725-46-2	0 58	c	2 10	c	0 08	c		0 00	
Cyclohexane	110-82-7	7200 00	ns	30000.00	ns	13000 00	n		13 00	
Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3	21 00	c	75 00	c	2 90	c		0 02	
Cyclohexanone	108-94-1	310000 00	nm	3100000 00	nm	180000 00	n		42 00	
Cyclohexylamine	108-91-8	12000 00	n	120000.00	nm	7300 00	n		2 00	
Cyhalothrin/karate	68085-85-8	310 00	n	3100 00	n	180 00	n		170 00	
Cypermethrin	52315-07-8	610 00	n	6200 00	n	370 00	n		79 00	
Cyromazine	66215-27-8	460.00	n	4600 00	n	270 00	n		0 07	
Cyanides										
Calcium Cyanide	592-01-8	3100 00	n	41000.00	n	1500 00	n			
Copper Cyanide	544-92-3	390 00	n	5100 00	n	180 00	n			
Cyanide (CN-)	57-12-5	1600 00	n	20000 00	n	730.00	n	200.00	7 40	2 00
Cyanogen	460-19-5	3100.00	n	41000 00	n	1500 00	n			
Cyanogen Bromide	506-68-3	7000 00	n	92000 00	n	3300 00	n			
Cyanogen Chloride	506-77-4	3900.00	n	51000 00	n	1800 00	n			
Hydrogen Cyanide	74-90-8	1600 00	n	20000 00	n	6 20	n			
Potassium Cyanide	151-50-8	3900 00	n	51000 00	n	1800 00	n			
Potassium Silver Cyanide	506-61-6	16000 00	n	200000 00	nm	7300 00	n			
Silver Cyanide	506-64-9	7800 00	n	100000 00	nm	3700 00	n			
Sodium Cyanide	143-33-9	3100 00	n	41000 00	n	1500 00	n			
Thiocyanate	463-56-9	16 00	n	200 00	n	7 30	n		0 00	
Zinc Cyanide	557-21-1	3900 00	n	51000 00	n	1800 00	n			
Dacthal	1861-32-1	610 00	n	6200 00	n	370 00	n		0 28	
Dalapon	75-99-0	1800 00	n	18000 00	n	1100 00	n	200 00	0 22	0 04
DDD	72-54-8	2 00	c	7 20	c	0 28	c		0.09	
DDE, p,p'-	72-55-9	1.40	c	5 10	c	0 20	c		0 06	
DDT	50-29-3	1 70	c*	7 00	c*	0.20	c*		0.09	
Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'- (BDE-209)	1163-19-5	430 00	n	2500 00	c**	96 00	c**		78.00	

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Contaminant		Screening Levels							Protection of Groundwater	
Analyte	CAS No.	Residential Soil mg/kg	key	Industrial Soil mg/kg	key	Tapwater ug/L	key	MCL ug/L	Risk-based SSL mg/kg	MCL-based SSL mg/kg
Demeton	8065-48-3	2 40	n	25 00	n	1 50	n			
Di(2-ethylhexyl)adipate	103-23-1	400 00	c*	1400 00	c	56 00	c	400 00	5 50	39 00
Diallate	2303-16-4	8.00	c	28 00	c	1 10	c		0 00	
Diazinon	333-41-5	55 00	n	550 00	n	33 00	n		0 09	
Dibromo-3-chloropropane, 1,2-	96-12-8	0 01	c	0.07	c	0.00	c	0 20	0.00	0 00
Dibromobenzene, 1,4-	106-37-6	610 00	n	6200 00	n	370 00	n		0 39	
Dibromochloromethane	124-48-1	5 80	c	21 00	c	0 80	c		0.00	
Dibromoethane, 1,2-	106-93-4	0 03	c	0 17	c	0 01	c	0 05	0.00	0 00
Dibromomethane (Methylene Bromide)	74-95-3	780 00	n	10000.00	ns	370 00	n		0 09	
Dibutyl Phthalate	84-74-2	6100 00	n	62000 00	n	3700 00	n		11 00	
Dibutyltin Compounds	NA	18 00	n	180 00	n	11 00	n			
Dicamba	1918-00-9	1800 00	n	18000 00	n	1100 00	n		0.28	
Dichloro-2-butene, 1,4-	764-41-0	0 00	c	0 02	c	0 00	c		0 00	
Dichloroacetic Acid	79-43-6	9 70	c*	34 00	c*	1 30	c		0 00	
Dichlorobenzene, 1,2-	95-50-1	2000 00	ns	10000 00	ns	370 00	n	600 00	0.40	0 66
Dichlorobenzene, 1,4-	106-46-7	2.60	c	13 00	c	0 43	c	75 00	0 00	0 08
Dichlorobenzidine, 3,3'-	91-94-1	1 10	c	3.80	c	0 15	c		0.00	
Dichlorodifluoromethane	75-71-8	190 00	n	780.00	n	390 00	n		0 61	
Dichloroethane, 1,1-	75-34-3	3 40	c	17 00	c	2 40	c		0 00	
Dichloroethane, 1,2-	107-06-2	0 45	c	2 20	c	0 15	c	5 00	0 00	0 00
Dichloroethylene, 1,1-	75-35-4	250 00	n	1100 00	n	340.00	n	7 00	0 12	0 00
Dichloroethylene, 1,2- (Mixed Isomers)	540-59-0	700 00	n	9200 00	ns	330 00	n		0 10	
Dichloroethylene, 1,2-cis-	156-59-2	780 00	n	10000 00	ns	370 00	n	70 00	0.11	0.02
Dichloroethylene, 1,2-trans-	156-60-5	110 00	n	500.00	n	110 00	n	100 00	0 03	0 03
Dichlorophenol, 2,4-	120-83-2	180 00	n	1800 00	n	110 00	n		0 18	
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	690.00	n	7700 00	n	370.00	n	70 00	0 09	0 02
Dichlorophenoxy)butyric Acid, 4-(2,4-	94-82-6	490 00	n	4900 00	n	290 00	n		0 12	
Dichloropropane, 1,2-	78-87-5	0 93	c*	4 70	c*	0 39	c*	5 00	0.00	0 00
Dichloropropane, 1,3-	142-28-9	1600.00	n	20000.00	ns	730.00	n		0 27	
Dichloropropanol, 2,3-	616-23-9	180.00	n	1800 00	n	110.00	n		0 02	
Dichloropropene, 1,3-	542-75-6	1 70	c*	8 40	c*	0 43	c*		0 00	
Dichlorvos	62-73-7	1 70	c*	5 90	c*	0 23	c*		0 00	
Dicyclopentadiene	77-73-6	29 00	n	130 00	n	14.00	n		0 06	
Dieldrin	60-57-1	0 03	c	0 11	c	0 00	c		0.00	
Diesel Engine Exhaust	NA									
Diethyl Phthalate	84-66-2	49000 00	n	490000 00	nm	29000 00	n		13 00	
Diethylene Glycol Monobutyl Ether	112-34-5	610 00	n	6200 00	n	370 00	n		0 08	
Diethylene Glycol Monoethyl Ether	111-90-0	3700 00	n	37000 00	n	2200 00	n		0 44	
Diethylformamide	617-84-5	61.00	n	620.00	n	37.00	n		0 01	
Diethylstilbestrol	56-53-1	0 00	c	0 00	c	0 00	c		0.00	
Difenzoquat	43222-48-6	4900 00	n	49000 00	n	2900 00	n			
Diflubenzuron	35367-38-5	1200 00	n	12000 00	n	730 00	n		1 70	
Difluoroethane, 1,1-	75-37-6	53000 00	ns	220000 00	nms	83000 00	n		29 00	
Diisopropyl Ether	108-20-3	1200 00	n	5100 00	ns	830 00	n		0 19	
Diisopropyl Methylphosphonate	1445-75-6	6300 00	ns	82000 00	ns	2900 00	n		0 77	
Dimethipin	55290-64-7	1200 00	n	12000 00	n	730 00	n		0 19	

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Contaminant		Screening Levels							Protection of Groundwater	
		Residential Soil	key	Industrial Soil	key	Tapwater	key	MCL	Risk-based SSL	MCL-based SSL
Analyte	CAS No.	mg/kg		mg/kg		ug/L		ug/L	mg/kg	mg/kg
Dimethoate	60-51-5	12 00	n	120 00	n	7 30	n		0 00	
Dimethoxybenzidine, 3,3'-	119-90-4	35 00	c	120 00	c	4 80	c		0 02	
Dimethyl methylphosphonate	756-79-6	290 00	c*	1000.00	c*	40.00	c*		0 01	
Dimethylaniline HCl, 2,4-	21436-96-4	0 84	c	3 00	c	0 12	c		0 00	
Dimethylaniline, 2,4-	95-68-1	0 65	c	2 30	c	0 09	c		0 00	
Dimethylaniline, N,N-	121-69-7	160 00	n	2000 00	ns	73 00	n		0 03	
Dimethylbenzidine, 3,3'-	119-93-7	0 04	c	0 16	c	0.01	c		0.00	
Dimethylformamide	68-12-2	6100 00	n	62000 00	n	3700 00	n		0 75	
Dimethylphenol, 2,4-	105-67-9	1200.00	n	12000.00	n	730 00	n		1.20	
Dimethylphenol, 2,6-	576-26-1	37.00	n	370 00	n	22.00	n		0 04	
Dimethylphenol, 3,4-	95-65-8	61 00	n	620 00	n	37 00	n		0 06	
Dimethylterephthalate	120-61-6	7800 00	ns	100000 00	nms	3700.00	n		1 00	
Dinitro-o-cresol, 4,6-	534-52-1	6 10	n	62 00	n	3 70	n		0.01	
Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5	120 00	n	1200 00	n	73 00	n		2 10	
Dinitrobenzene, 1,2-	528-29-0	6 10	n	62 00	n	3 70	n		0 00	
Dinitrobenzene, 1,3-	99-65-0	6 10	n	62 00	n	3 70	n		0 00	
Dinitrobenzene, 1,4-	100-25-4	6 10	n	62 00	n	3 70	n		0 00	
Dinitrophenol, 2,4-	51-28-5	120 00	n	1200 00	n	73 00	n		0.07	
Dinitrotoluene Mixture, 2,4/2,6-	25321-14-6	0 71	c	2 50	c	0 10	c		0.00	
Dinitrotoluene, 2,4-	121-14-2	120 00	n	1200 00	n	73 00	n		0 07	
Dinitrotoluene, 2,6-	606-20-2	61 00	n	620 00	n	37 00	n		0.03	
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	150 00	n	2000 00	n	73 00	n		0 03	
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	150 00	n	1900 00	n	73 00	n		0.03	
Dinoseb	88-85-7	61.00	n	620.00	n	37 00	n	7.00	0 27	0 05
Dioxane, 1,4-	123-91-1	44 00	c	160 00	c	6 10	c		0.00	
Diphenamid	957-51-7	1800.00	n	18000.00	n	1100 00	n		34 00	
Diphenyl Sulfone	127-63-9	180 00	n	1800 00	n	110 00	n		0 66	
Diphenylamine	122-39-4	1500 00	n	15000 00	n	910 00	n		3 60	
Diphenylhydrazine, 1,2-	122-66-7	0 61	c	2 20	c	0 08	c		0 00	
Diquat	85-00-7	130 00	n	1400 00	n	80.00	n	20.00	0.33	0 08
Direct Black 38	1937-37-7	0 07	c	0 23	c	0 01	c		1 40	
Direct Blue 6	2602-46-2	0 07	c	0 23	c	0 01	c		4 00	
Direct Brown 95	16071-86-6	0 07	c	0 26	c	0.01	c			
Disulfoton	298-04-4	2 40	n	25 00	n	1.50	n		0.00	
Dithiane, 1,4-	505-29-3	610 00	n	6200 00	n	370 00	n		0 19	
Diuron	330-54-1	120 00	n	1200 00	n	73 00	n		0 03	
Dodine	2439-10-3	240 00	n	2500 00	n	150 00	n		4 50	
Dioxins										
Hexachlorodibenzo-p-dioxin	34465-46-8	0 00	c	0 00	c	0 00	c		0 00	
Hexachlorodibenzo-p-dioxin, Mixture	NA	0 00	c	0 00	c	0 00	c		0 00	
HpCDD, 2,3,7,8-	37871-00-4	0 00	c	0 00	c	0.00	c		0 00	
OCDD	3268-87-9	0 02	c	0 06	c	0 00	c		0.00	
PeCDD, 2,3,7,8-	36088-22-9	0.00	c	0.00	c	0.00	c		0.00	
TCDD, 2,3,7,8-	1746-01-6	0 00	c*	0 00	c*	0.00	c*	0 00	0 00	0 00
Endosulfan	115-29-7	370 00	n	3700 00	n	220 00	n		9 70	
Endothall	145-73-3	1200 00	n	12000 00	n	730.00	n	100.00	0.16	0 02

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Contaminant		Screening Levels							Protection of Groundwater	
Analyte	CAS No.	Residential Soil mg/kg	key	Industrial Soil mg/kg	key	Tapwater ug/L	key	MCL ug/L	Risk-based SSL mg/kg	MCL-based SSL mg/kg
Endrin	72-20-8	18 00	n	180 00	n	11.00	n	2 00	0 23	0 04
Epichlorohydrin	106-89-8	18 00	n	77 00	n	2 10	n		0 00	
Epoxybutane, 1,2-	106-88-7	150 00	n	640.00	n	42 00	n		0.01	
EPTC	759-94-4	2000.00	ns	26000.00	ns	910 00	n		0 65	
Ethephon	16672-87-0	310 00	n	3100 00	n	180 00	n		0 04	
Ethion	563-12-2	31 00	n	310.00	n	18 00	n		0 48	
Ethoxyethanol Acetate, 2-	111-15-9	18000 00	n	180000 00	nm	11000 00	n		2 20	
Ethoxyethanol, 2-	110-80-5	24000 00	n	250000 00	nm	15000 00	n		2 90	
Ethyl Acetate	141-78-6	70000 00	ns	920000 00	nms	33000.00	n		7 00	
Ethyl Acrylate	140-88-5	13 00	c	60.00	c	1 40	c		0 00	
Ethyl Chloride	75-00-3	15000 00	ns	62000 00	ns	21000 00	n		6 00	
Ethyl Ether	60-29-7	16000 00	ns	200000 00	nms	7300.00	n		1 60	
Ethyl Methacrylate	97-63-2	7000 00	ns	92000 00	ns	3300 00	n		0 79	
Ethyl-p-nitrophenyl Phosphonate	2104-64-5	0 61	n	6 20	n	0 37	n		0 01	
Ethylbenzene	100-41-4	5 70	c	29 00	c	1 50	c	700 00	0 00	0 89
Ethylene Cyanohydrin	109-78-4	1800 00	n	18000 00	n	1100 00	n		0 22	
Ethylene Diamine	107-15-3	5500 00	n	55000 00	n	3300 00	n		0 82	
Ethylene Glycol	107-21-1	120000 00	nm	1200000 00	nm	73000.00	n		15.00	
Ethylene Glycol Monobutyl Ether	111-76-2	31000 00	n	310000.00	nm	18000 00	n		3 70	
Ethylene Oxide	75-21-8	0 16	c	0 80	c	0 04	c		0 00	
Ethylene Thiourea	96-45-7	4 90	n	38 00	c**	1 50	c**		0 00	
Ethylphthalyl Ethyl Glycolate	84-72-0	180000.00	nm	1800000 00	nm	110000 00	n		300 00	
Express	101200-48-0	490 00	n	4900 00	n	290.00	n		0 11	
Fenamiphos	22224-92-6	15 00	n	150 00	n	9 10	n		0.01	
Fenpropathrin	39515-41-8	1500 00	n	15000.00	n	910 00	n		54 00	
Fluometuron	2164-17-2	790 00	n	8000 00	n	470 00	n		0 44	
Fluorine (Soluble Fluoride)	7782-41-4	4700 00	n	61000 00	n	2200 00	n	4000 00	330 00	600 00
Fluridone	59756-60-4	4900 00	n	49000 00	n	2900.00	n		650 00	
Flurprimidol	56425-91-3	1200 00	n	12000 00	n	730.00	n		1 40	
Flutolanil	66332-96-5	3700 00	n	37000 00	n	2200 00	n		24 00	
Fluvalinate	69409-94-5	610 00	n	6200 00	n	370 00	n		530 00	
Folpet	133-07-3	140 00	c*	490 00	c	19 00	c		0 01	
Fomesafen	72178-02-0	2 60	c	9 10	c	0 35	c		0.01	
Fonofos	944-22-9	120 00	n	1200 00	n	73 00	n		0 14	
Formaldehyde	50-00-0	12000 00	n	120000 00	nm	7300 00	n		1 50	
Formic Acid	64-18-6	120000 00	nm	1200000 00	nm	73000 00	n		15 00	
Fosetyl-AL	39148-24-8	180000 00	nm	1800000 00	nm	110000 00	n			
Furazolidone	67-45-8	0 13	c	0 45	c	0 02	c		0 00	
Furfural	98-01-1	180 00	n	1800 00	n	110.00	n		0.03	
Furium	531-82-8	0 32	c	1 10	c	0.05	c		0 00	
Furmecyclox	60568-05-0	16 00	c	57 00	c	2 20	c		0 01	
Furans										
Furan	110-00-9	78 00	n	1000.00	n	37 00	n		0 02	
HpCDF, 2,3,7,8-	38998-75-3	0 00	c	0 00	c	0 00	c		0 00	
HxCDF, 2,3,7,8-	55684-94-1	0 00	c	0 00	c	0 00	c		0 00	
OCDF	39001-02-0	0 01	c	0 04	c	0 00	c		0 00	

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Contaminant		Screening Levels							Protection of Groundwater	
Analyte	CAS No	Residential Soil mg/kg	key	Industrial Soil mg/kg	key	Tapwater ug/L	key	MCL ug/L	Risk-based SSL mg/kg	MCL-based SSL mg/kg
PeCDF, 1,2,3,7,8-	57117-41-6	0 00	c	0 00	c	0.00	c		0 00	
PeCDF, 2,3,4,7,8-	57117-31-4	0 00	c	0 00	c	0.00	c		0 00	
TCDF, 2,3,7,8-	51207-31-9	0 00	c	0 00	c	0.00	c		0 00	
Glufosinate, Ammonium	77182-82-2	24 00	n	250 00	n	15 00	n		0 00	
Glycidyl	765-34-4	24 00	n	250 00	n	15 00	n		0 00	
Glyphosate	1071-83-6	6100 00	n	62000 00	n	3700 00	n	700 00	0 87	0 17
Goal	42874-03-3	180.00	n	1800 00	n	110 00	n		10 00	
Haloxyfop, Methyl	69806-40-2	3.10	n	31.00	n	1 80	n		0 07	
Harmony	79277-27-3	790.00	n	8000 00	n	470 00	n		0 13	
Heptachlor	76-44-8	0 11	c	0.38	c	0 02	c	0.40	0 00	0 04
Heptachlor Epoxide	1024-57-3	0 05	c*	0.19	c*	0 01	c*	0 20	0.00	0 00
Hexabromobenzene	87-82-1	120 00	n	1200 00	n	73 00	n		0 51	
Hexachlorobenzene	118-74-1	0 30	c	1.10	c	0 04	c	1 00	0 00	0 01
Hexachlorobutadiene	87-68-3	6 20	c**	22 00	c*	0 86	c*		0 00	
Hexachlorocyclohexane, Alpha-	319-84-6	0 08	c	0 27	c	0 01	c		0 00	
Hexachlorocyclohexane, Beta-	319-85-7	0 27	c	0 96	c	0.04	c		0 00	
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	0 52	c*	2 10	c	0 06	c	0 20	0 00	0 00
Hexachlorocyclohexane, Technical	608-73-1	0 27	c	0 96	c	0.04	c		0 00	
Hexachlorocyclopentadiene	77-47-4	370.00	n	3700 00	n	220 00	n	50 00	0 80	0 18
Hexachloroethane	67-72-1	35.00	c**	120 00	c**	4 80	c**		0 00	
Hexachlorophene	70-30-4	18 00	n	180 00	n	11 00	n		14 00	
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	5 50	c*	24 00	c	0 61	c		0 00	
Hexamethylene Diisocyanate, 1,6-	822-06-0	3 70	n	16 00	n	0 02	n		0 00	
Hexane, N-	110-54-3	570 00	ns	2600.00	ns	880 00	n		6 20	
Hexanedioic Acid	124-04-9	120000 00	nm	1200000 00	nm	73000.00	n		18 00	
Hexazinone	51235-04-2	2000 00	n	20000.00	n	1200.00	n		1.70	
Hydrazine	302-01-2	0 21	c	0 95	c	0 02	c			
Hydrazine Sulfate	10034-93-2	0 21	c	0 95	c	0 02	c			
Hydrogen Chloride	7647-01-0	28000000 00	nm	120000000.00	nm					
Hydrogen Sulfide	7783-06-4	2800000 00	nm	12000000 00	nm					
Hydroquinone	123-31-9	8 70	c	31 00	c	1 20	c		0 00	
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2	16.00	n	200 00	n	7 30	n			
Imazalil	35554-44-0	790.00	n	8000 00	n	470.00	n		1 90	
Imazaquin	81335-37-7	15000 00	n	150000 00	nm	9100 00	n		92 00	
Iprodione	36734-19-7	2400 00	n	25000 00	n	1500 00	n		0 70	
Iron	7439-89-6	55000 00	n	720000 00	nm	26000 00	n		640 00	
Isobutyl Alcohol	78-83-1	23000 00	ns	310000 00	nms	11000.00	n		2 20	
Isophorone	78-59-1	510 00	c*	1800 00	c*	71 00	c		0 02	
Isopropalin	33820-53-0	920 00	n	9200.00	n	550.00	n		7 40	
Isopropyl Methyl Phosphonic Acid	1832-54-8	6100 00	n	62000 00	n	3700 00	n		0 77	
Isoxaben	82558-50-7	3100 00	n	31000 00	n	1800 00	n		11 00	
Kerb	23950-58-5	4600 00	n	46000 00	n	2700 00	n		9.20	
Lactofen	77501-63-4	120 00	n	1200 00	n	73.00	n		3 70	
Linuron	330-55-2	120.00	n	1200 00	n	73 00	n		0 07	
Lithium	7439-93-2	160 00	n	2000 00	n	73 00	n		22 00	
Lithium Perchlorate	7791-03-9	55 00	n	720 00	n	26 00	n			

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Contaminant		Screening Levels							Protection of Groundwater	
Analyte	CAS No.	Residential Soil mg/kg	key	Industrial Soil mg/kg	key	Tapwater ug/L	key	MCL ug/L	Risk-based SSL mg/kg	MCL-based SSL mg/kg
Londax	83055-99-6	12000 00	n	120000 00	nm	7300 00	n		1.90	
Lead Compounds										
Lead and Compounds	7439-92-1	400 00	n	800 00	n			15 00		14 00
Tetraethyl Lead	78-00-2	0 01	n	0 06	n	0 00	n		0 00	
Malathion	121-75-5	1200 00	n	12000.00	n	730 00	n		0.19	
Maleic Anhydride	108-31-6	6100 00	n	61000 00	n	3700 00	n		0 74	
Maleic Hydrazide	123-33-1	31000 00	n	310000 00	nm	18000 00	n		4 00	
Malononitrile	109-77-3	6 10	n	62 00	n	3 70	n		0.00	
Mancozeb	8018-01-7	1800 00	n	18000 00	n	1100.00	n		0 24	
Maneb	12427-38-2	310 00	n	3100 00	n	180 00	n		0 04	
Manganese (Diet)	7439-96-5									
Manganese (Water)	7439-96-5	1800 00	n	23000 00	n	880 00	n		57 00	
MCPA	94-74-6	31 00	n	310 00	n	18 00	n		0 00	
MCPB	94-81-5	610 00	n	6200.00	n	370 00	n		0 15	
MCPP	93-65-2	61 00	n	620 00	n	37 00	n		0 01	
Mephosfolan	950-10-7	5 50	n	55 00	n	3 30	n		0 00	
Mepiquat Chloride	24307-26-4	1800 00	n	18000 00	n	1100 00	n		0 60	
Merphos	150-50-5	1 80	n	18 00	n	1 10	n		0 14	
Merphos Oxide	78-48-8	1 80	n	18 00	n	1 10	n		0 00	
Metalaxyl	57837-19-1	3700 00	n	37000 00	n	2200 00	n		0 54	
Methacrylonitrile	126-98-7	3.20	n	18 00	n	1 00	n		0 00	
Methamidophos	10265-92-6	3 10	n	31 00	n	1.80	n		0 00	
Methanol	67-56-1	31000 00	n	310000 00	nm	18000 00	n		3 70	
Methidathion	950-37-8	61 00	n	620 00	n	37 00	n		0 01	
Methomyl	16752-77-5	1500 00	n	15000 00	n	910.00	n		0 20	
Methoxy-5-nitroaniline, 2-	99-59-2	9 90	c	35 00	c	1 40	c		0.00	
Methoxychlor	72-43-5	310 00	n	3100 00	n	180 00	n	40 00	16 00	3 40
Methoxyethanol Acetate, 2-	110-49-6	120 00	n	1200 00	n	73 00	n		0 02	
Methoxyethanol, 2-	109-86-4	180 00	n	1800 00	n	110 00	n		0 02	
Methyl Acetate	79-20-9	78000 00	ns	1000000 00	nms	37000 00	n		7 60	
Methyl Acrylate	96-33-3	2300 00	n	31000 00	ns	1100 00	n		0 23	
Methyl Ethyl Ketone (2-Butanone)	78-93-3	28000 00	ns	190000 00	nms	7100 00	n		1 50	
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	5300 00	ns	52000 00	ns	2000 00	n		0.44	
Methyl Methacrylate	80-62-6	4700 00	ns	20000 00	ns	1400 00	n		0 31	
Methyl Parathion	298-00-0	15 00	n	150 00	n	9 10	n		0 01	
Methyl Styrene (Mixed Isomers)	25013-15-4	190 00	n	1100 00	ns	60 00	n		0 11	
Methyl tert-Butyl Ether (MTBE)	1634-04-4	39 00	c	190 00	c	12 00	c		0 00	
Methyl-5-Nitroaniline, 2-	99-55-8	15 00	c	52 00	c	2 00	c		0 00	
Methylaniline Hydrochloride, 2-	636-21-5	3 70	c	13.00	c	0.52	c		0 00	
Methylarsonic acid	124-58-3	610 00	n	6200 00	n	370 00	n			
Methylene Chloride	75-09-2	11 00	c	54.00	c	4 80	c	5 00	0 00	0 00
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	1 20	c	17 00	c*	0 22	c		0 01	
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	11 00	c	37 00	c	1.50	c		0 04	
Methylenebisbenzenamine, 4,4'-	101-77-9	0 30	c	1.10	c	0.04	c		0.00	
Methylenediphenyl Diisocyanate	101-68-8	850000 00	nm	3600000 00	nm					
Methylstyrene, Alpha-	98-83-9	5500 00	ns	72000 00	ns	2600 00	n		4 70	

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Contaminant		Screening Levels							Protection of Groundwater	
		Residential Soil	key	Industrial Soil	key	Tapwater	key	MCL	Risk-based SSL	MCL-based SSL
Analyte	CAS No.	mg/kg		mg/kg		ug/L		ug/L	mg/kg	mg/kg
Metolachlor	51218-45-2	9200 00	n	92000.00	n	5500 00	n		4 30	
Metribuzin	21087-64-9	1500 00	n	15000.00	n	910.00	n		2.40	
Mirex	2385-85-5	0.03	c	0 10	c	0.00	c		0 00	
Molinate	2212-67-1	120 00	n	1200 00	n	73 00	n		0 06	
Molybdenum	7439-98-7	390 00	n	5100 00	n	180 00	n		3.70	
Monochloramine	10599-90-3	7800 00	n	100000 00	nm	3700 00	n			
Monomethylaniline	100-61-8	120 00	n	1200 00	n	73 00	n		0 02	
Mercury Compounds										
Mercuric Chloride	7487-94-7	23 00	n	310.00	n	11 00	n			
Mercuric Sulfide	1344-48-5	23 00	n	310 00	n	11 00	n			
Mercury (elemental)	7439-97-6	6 70	ns	28 00	ns	0 63	n	2 00	0 03	0 10
Mercury, Inorganic Salts	NA	23 00	n	310 00	n	11 00	n		0 57	
Methyl Mercury	22967-92-6	7 80	n	100 00	n	3 70	n			
Phenylmercuric Acetate	62-38-4	4 90	n	49 00	n	2 90	n		0 00	
N,N'-Diphenyl-1,4-benzenediamine	74-31-7	18 00	n	180 00	n	11 00	n		2 80	
Naled	300-76-5	120 00	n	1200 00	n	73 00	n		0 03	
Napropamide	15299-99-7	6100 00	n	62000 00	n	3700 00	n		85 00	
Nickel Refinery Dust	NA	14000 00	c	69000 00	c					
Nickel Soluble Salts	7440-02-0	1600 00	n	20000 00	n	730 00	n		48 00	
Nickel Subsulfide	12035-72-2	6900 00	c	35000 00	c					
Nitrate	14797-55-8	130000 00	nm	1600000 00	nm	58000.00	n	10000.00		
Nitrite	14797-65-0	7800 00	n	100000 00	nm	3700 00	n	1000 00		
Nitroaniline, 3-	99-09-2	18 00	n	82 00	c**	3.20	c**		0.00	
Nitroaniline, 4-	100-01-6	23.00	c**	82 00	c*	3 20	c*		0 00	
Nitrobenzene	98-95-3	31 00	n	280.00	n	3.40	n		0 00	
Nitrofurantoin	67-20-9	4300 00	n	43000 00	n	2600.00	n		1 90	
Nitrofurazone	59-87-0	0 37	c	1 30	c	0 05	c		0 00	
Nitroglycerin	55-63-0	6 10	n	62 00	n	3 70	n		0 00	
Nitroguanidine	556-88-7	6100 00	n	62000 00	n	3700 00	n		0 92	
Nitromethane	75-52-5	4 70	c*	24 00	c*	0 54	c*		0.00	
Nitropropane, 2-	79-46-9	0 01	c	0 06	c	0 00	c		0 00	
Nitroso-di-N-butylamine, N-	924-16-3	0.09	c	0 43	c	0 00	c		0 00	
Nitroso-di-N-propylamine, N-	621-64-7	0.07	c	0.25	c	0 01	c		0 00	
Nitroso-N-ethylurea, N-	759-73-9	0 00	c	0 06	c	0 00	c		0 00	
Nitrosodiethanolamine, N-	1116-54-7	0 17	c	0 62	c	0 02	c		0 00	
Nitrosodiethylamine, N-	55-18-5	0 00	c	0 01	c	0 00	c		0 00	
Nitrosodimethylamine, N-	62-75-9	0 00	c	0 03	c	0 00	c		0 00	
Nitrosodiphenylamine, N-	86-30-6	99 00	c	350 00	c	14 00	c		0.17	
Nitrosomethylethylamine, N-	10595-95-6	0 02	c	0 08	c	0 00	c		0 00	
Nitrosopyrrolidine, N-	930-55-2	0 23	c	0 82	c	0 03	c		0 00	
Nitrotoluene, m-	99-08-1	1200.00	n	12000.00	n	730.00	n		0 60	
Nitrotoluene, o-	88-72-2	2.90	c*	13 00	c*	0.31	c		0 00	
Nitrotoluene, p-	99-99-0	30 00	c**	110 00	c*	4 20	c*		0 00	
Norflurazon	27314-13-2	2400.00	n	25000 00	n	1500 00	n		17.00	
Nustar	85509-19-9	43 00	n	430 00	n	26.00	n		90 00	
Octabromodiphenyl Ether	32536-52-0	180 00	n	1800 00	n	110.00	n		31 00	

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Contaminant		Screening Levels							Protection of Groundwater	
		Residential Soil	key	Industrial Soil	key	Tapwater	key	MCL	Risk-based SSL	MCL-based SSL
Analyte	CAS No	mg/kg		mg/kg		ug/L		ug/L	mg/kg	mg/kg
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetra (HMX)	2691-41-0	3800 00	n	49000.00	n	1800 00	n		7 10	
Octamethylpyrophosphoramide	152-16-9	120.00	n	1200.00	n	73 00	n		0 13	
Oryzalin	19044-88-3	3100 00	n	31000 00	n	1800 00	n		4.80	
Oxadiazon	19666-30-9	310 00	n	3100 00	n	180 00	n		1 30	
Oxamyl	23135-22-0	1500 00	n	15000 00	n	910 00	n	200 00	0.20	0.04
Paclobutrazol	76738-62-0	790.00	n	8000 00	n	470 00	n		12 00	
Paraquat Dichloride	1910-42-5	270 00	n	2800 00	n	160 00	n		0 49	
Parathion	56-38-2	370 00	n	3700 00	n	220.00	n		0 82	
Pebulate	1114-71-2	3100 00	n	31000.00	n	1800 00	n		2 10	
Pendimethalin	40487-42-1	2400 00	n	25000 00	n	1500 00	n		7.90	
Pentabromodiphenyl Ether	32534-81-9	120 00	n	1200 00	n	73 00	n		4 50	
Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9	7 80	n	100.00	n	3 70	n			
Pentachlorobenzene	608-93-5	49 00	n	490 00	n	29 00	n		0 12	
Pentachloroethane	76-01-7	5 40	c	19 00	c	0 75	c		0 00	
Pentachloronitrobenzene	82-68-8	1 90	c*	6 60	c	0 26	c		0 00	
Pentachlorophenol	87-86-5	3 00	c	9.00	c	0 56	c	1 00	0 00	0 01
Perchlorate and Perchlorate Salts	14797-73-0	55 00	n	720 00	n	26 00	n			
Permethrin	52645-53-1	3100 00	n	31000 00	n	1800 00	n		650 00	
Phenmedipham	13684-63-4	15000 00	n	150000.00	nm	9100 00	n		6 80	
Phenol	108-95-2	18000 00	n	180000 00	nm	11000 00	n		8 10	
Phenylenediamine, m-	108-45-2	370 00	n	3700 00	n	220 00	n		0 08	
Phenylenediamine, o-	95-54-5	10 00	c	37 00	c	1 40	c		0 00	
Phenylenediamine, p-	106-50-3	12000.00	n	120000 00	nm	6900 00	n		2 40	
Phenylphenol, 2-	90-43-7	250 00	c	890.00	c	35 00	c		0 72	
Phorate	298-02-2	12 00	n	120 00	n	7 30	n		0 01	
Phosgene	75-44-5	0.40	n	1 70	n					
Phosmet	732-11-6	1200 00	n	12000 00	n	730 00	n		0 21	
Phosphine	7803-51-2	23 00	n	310.00	n	11 00	n			
Phosphoric Acid	7664-38-2	14000000.00	nm	60000000 00	nm					
Phosphorus, White	7723-14-0	1 60	n	20 00	n	0 73	n		0 00	
Phthalic Acid, P-	100-21-0	61000 00	n	620000.00	nm	37000 00	n		13 00	
Phthalic Anhydride	85-44-9	120000 00	nm	1200000 00	nm	73000 00	n		16 00	
Picloram	1918-02-1	4300 00	n	43000 00	n	2600 00	n	500 00	0 60	0 12
Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3	120 00	n	1200 00	n	73 00	n		0 03	
Pirimiphos, Methyl	29232-93-7	610 00	n	6200 00	n	370 00	n		0 17	
Polybrominated Biphenyls	59536-65-1	0 02	c*	0 06	c*	0 00	c			
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	850000 00	nm	3600000 00	nm					
Potassium Perchlorate	7778-74-7	55 00	n	720 00	n	26 00	n			
Prochloraz	67747-09-5	3 20	c	11 00	c	0 45	c		0 00	
Profluralin	26399-36-0	370 00	n	3700.00	n	220 00	n		8 00	
Prometon	1610-18-0	920 00	n	9200 00	n	550 00	n		0.28	
Prometryn	7287-19-6	240 00	n	2500 00	n	150 00	n		0 23	
Propachlor	1918-16-7	790.00	n	8000 00	n	470 00	n		0 37	
Propanil	709-98-8	310 00	n	3100 00	n	180 00	n		0.11	
Propargite	2312-35-8	1200 00	n	12000 00	n	730 00	n		200.00	
Propargyl Alcohol	107-19-7	120 00	n	1200 00	n	73 00	n		0 02	

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Contaminant		Screening Levels							Protection of Groundwater	
		Residential Soil	key	Industrial Soil	key	Tapwater	key	MCL	Risk-based SSL	MCL-based SSL
Analyte	CAS No.	mg/kg		mg/kg		ug/L		ug/L	mg/kg	mg/kg
Propazine	139-40-2	1200 00	n	12000 00	n	730.00	n		0.67	
Propham	122-42-9	1200 00	n	12000 00	n	730.00	n		0 33	
Propiconazole	60207-90-1	790 00	n	8000 00	n	470 00	n		5 40	
Propylene Glycol	57-55-6	1200000 00	nm	12000000 00	nm	730000.00	n		150 00	
Propylene Glycol Dinitrate	6423-43-4	60.00	n	250 00	n	0 57	n		0 00	
Propylene Glycol Monoethyl Ether	1569-02-4	43000 00	n	430000 00	nm	26000 00	n		5 20	
Propylene Glycol Monomethyl Ether	107-98-2	43000.00	n	430000 00	nm	26000.00	n		5 20	
Propylene Oxide	75-56-9	1 90	c	8 70	c	0 23	c		0 00	
Pursuit	81335-77-5	15000 00	n	150000 00	nm	9100 00	n		27 00	
Pydrin	51630-58-1	1500 00	n	15000.00	n	910 00	n		810 00	
Pyridine	110-86-1	78 00	n	1000 00	n	37 00	n		0 01	
Polychlorinated Biphenyls (PCBs)										
Aroclor 1016	12674-11-2	3.90	n	21 00	c**	0 96	c**		0 05	
Aroclor 1221	11104-28-2	0 17	c	0 62	c	0 01	c		0 00	
Aroclor 1232	11141-16-5	0 17	c	0 62	c	0 01	c		0 00	
Aroclor 1242	53469-21-9	0 22	c	0.74	c	0 03	c		0 00	
Aroclor 1248	12672-29-6	0 22	c	0 74	c	0 03	c		0 00	
Aroclor 1254	11097-69-1	0 22	c**	0 74	c*	0 03	c*		0 01	
Aroclor 1260	11096-82-5	0 22	c	0 74	c	0 03	c		0 01	
Heptachlorobiphenyl, 2,2',3,3',4,4',5- (PCB 170)	35065-30-6	0 03	c	0 11	c	0 01	c		0 00	
Heptachlorobiphenyl, 2,2',3,4,4',5,5'- (PCB 180)	35065-29-3	0 34	c	1 10	c	0 05	c		0 02	
Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9	0 11	c	0 38	c	0.02	c		0 01	
Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6	0 11	c	0 38	c	0 02	c		0 00	
Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	69782-90-7	0 11	c	0 38	c	0 02	c		0 00	
Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4	0.11	c	0 38	c	0.02	c		0 00	
Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6	0 00	c	0 00	c	0 00	c		0 00	
Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3	0 11	c	0 38	c	0 02	c		0 00	
Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6	0 11	c	0 38	c	0 02	c		0 00	
Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4	0 11	c	0 38	c	0.02	c		0 00	
Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0	0 11	c	0 38	c	0 02	c		0 00	
Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8	0 00	c	0 00	c	0 00	c		0.00	
Polychlorinated Biphenyls (high risk)	1336-36-3	0 24	c	0 86	c					
Polychlorinated Biphenyls (low risk)	1336-36-3					0 17	c	0 50	0 02	0 05
Polychlorinated Biphenyls (lowest risk)	1336-36-3									
Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	0 03	c	0 11	c	0 01	c		0 00	
Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4	0 01	c	0 04	c	0 00	c		0 00	
Polynuclear Aromatic Hydrocarbons (PAHs)										
Acenaphthene	83-32-9	3400 00	n	33000 00	n	2200 00	n		27 00	
Anthracene	120-12-7	17000 00	n	170000 00	nm	11000 00	n		450 00	
Benz[a]anthracene	56-55-3	0 15	c	2 10	c	0 03	c		0 01	
Benzo[a]pyrene	50-32-8	0 02	c	0 21	c	0 00	c	0 20	0.00	0 31
Benzo[b]fluoranthene	205-99-2	0 15	c	2.10	c	0 03	c		0.05	
Benzo[k]fluoranthene	207-08-9	1 50	c	21.00	c	0 29	c		0 46	
Chrysene	218-01-9	15 00	c	210.00	c	2 90	c		1 40	
Dibenz[a,h]anthracene	53-70-3	0 02	c	0 21	c	0 00	c		0.02	
Fluoranthene	206-44-0	2300 00	n	22000 00	n	1500 00	n		210 00	

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Contaminant		Screening Levels							Protection of Groundwater	
Analyte	CAS No.	Residential Soil mg/kg	key	Industrial Soil mg/kg	key	Tapwater ug/L	key	MCL ug/L	Risk-based SSL mg/kg	MCL-based SSL mg/kg
Fluorene	86-73-7	2300 00	n	22000.00	n	1500 00	n		33 00	
Indeno[1,2,3-cd]pyrene	193-39-5	0.15	c	2 10	c	0 03	c		0 16	
Methylnaphthalene, 1-	90-12-0	22 00	c	99 00	c	2 30	c		0.02	
Methylnaphthalene, 2-	91-57-6	310 00	n	4100.00	ns	150.00	n		0 90	
Naphthalene	91-20-3	3 90	c*	20 00	c*	0 14	c*		0 00	
Pyrene	129-00-0	1700 00	n	17000 00	n	1100 00	n		150 00	
Quinalphos	13593-03-8	31 00	n	310.00	n	18 00	n		0.07	
Quinoline	91-22-5	0 16	c	0 57	c	0 02	c		0 00	
Refractory Ceramic Fibers	NA	43000000 00	nm	180000000 00	nm					
Resmethrin	10453-86-8	1800 00	n	18000 00	n	1100 00	n		930 00	
Ronnel	299-84-3	3100 00	n	31000.00	n	1800 00	n		7 70	
Rotenone	83-79-4	240 00	n	2500.00	n	150 00	n		100 00	
Savey	78587-05-0	1500 00	n	15000 00	n	910.00	n		7 60	
Selenious Acid	7783-00-8	390.00	n	5100 00	n	180 00	n			
Selenium	7782-49-2	390 00	n	5100 00	n	180.00	n	50 00	0.95	0 26
Selenourea	630-10-4	310 00	n	3100 00	n	180.00	n			
Sethoxydim	74051-80-2	5500 00	n	55000 00	n	3300.00	n		19 00	
Silver	7440-22-4	390.00	n	5100 00	n	180.00	n		1 60	
Simazine	122-34-9	4 00	c*	14 00	c	0 56	c	4 00	0 00	0 00
Sodium Acifluorfen	62476-59-9	790 00	n	8000 00	n	470 00	n		3 10	
Sodium Azide	26628-22-8	310 00	n	4100 00	n	150 00	n			
Sodium Diethyldithiocarbamate	148-18-5	1 80	c	6 40	c	0 25	c			
Sodium Fluoroacetate	62-74-8	1 20	n	12.00	n	0 73	n		0 00	
Sodium Metavanadate	13718-26-8	78 00	n	1000 00	n	37 00	n			
Sodium Perchlorate	7601-89-0	55.00	n	720 00	n	26 00	n			
Stirofos (Tetrachlorovinphos)	961-11-5	20 00	c*	72 00	c	2 80	c		0 00	
Strontium, Stable	7440-24-6	47000 00	n	610000 00	nm	22000 00	n		770 00	
Strychnine	57-24-9	18 00	n	180.00	n	11 00	n		0 14	
Styrene	100-42-5	6500 00	ns	38000 00	ns	1600.00	n	100 00	2 00	0 12
Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9	310 00	n	3100 00	n	180 00	n		2 80	
Systhane	88671-89-0	1500 00	n	15000 00	n	910 00	n		210 00	
TCMTB	21564-17-0	1800 00	n	18000 00	n	1100 00	n		8 30	
Tebuthiuron	34014-18-1	4300.00	n	43000 00	n	2600 00	n		0 63	
Temephos	3383-96-8	1200 00	n	12000 00	n	730.00	n		2300.00	
Terbacil	5902-51-2	790 00	n	8000.00	n	470 00	n		0 17	
Terbufos	13071-79-9	1 50	n	15 00	n	0 91	n		0 00	
Terbutryn	886-50-0	61 00	n	620.00	n	37.00	n		0 05	
Tetrachlorobenzene, 1,2,4,5-	95-94-3	18 00	n	180 00	n	11.00	n		0 03	
Tetrachloroethane, 1,1,1,2-	630-20-6	2 00	c	9 80	c	0 52	c		0 00	
Tetrachloroethane, 1,1,2,2-	79-34-5	0 59	c	2.90	c	0.07	c		0 00	
Tetrachloroethylene	127-18-4	0 57	c	2 70	c	0 11	c	5 00	0 00	0.00
Tetrachlorophenol, 2,3,4,6-	58-90-2	1800 00	n	18000 00	n	1100 00	n		4 60	
Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1	0 02	c	0 09	c	0.00	c		0 00	
Tetraethyl Dithiopyrophosphate	3689-24-5	31 00	n	310 00	n	18 00	n		0 14	
Tetrafluoroethane, 1,1,1,2-	811-97-2	110000 00	nms	470000.00	nms	170000.00	n		96 00	
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	240 00	n	2500 00	n	150.00	n		0 65	

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Contaminant		Screening Levels							Protection of Groundwater	
		Residential Soil	key	Industrial Soil	key	Tapwater	key	MCL	Risk-based SSL	MCL-based SSL
Analyte	CAS No.	mg/kg		mg/kg		ug/L		ug/L	mg/kg	mg/kg
Thallium (I) Nitrate	10102-45-1	7.00	n	92 00	n	3 30	n			
Thallium (Soluble Salts)	7440-28-0	5.10	n	66 00	n	2 40	n	2 00	0 17	0 14
Thallium Acetate	563-68-8	7 00	n	92.00	n	3 30	n			
Thallium Carbonate	6533-73-9	6 30	n	82 00	n	2.90	n			
Thallium Chloride	7791-12-0	6 30	n	82.00	n	2 90	n			
Thallium Sulfate	7446-18-6	6.30	n	82.00	n	2 90	n			
Thiobencarb	28249-77-6	610 00	n	6200 00	n	370 00	n		2.00	
Thiofanox	39196-18-4	18 00	n	180.00	n	11.00	n		0 00	
Thiophanate, Methyl	23564-05-8	4900 00	n	49000.00	n	2900.00	n		0.67	
Thiram	137-26-8	310.00	n	3100 00	n	180 00	n		0 04	
Tin	7440-31-5	47000 00	n	610000 00	nm	22000 00	n		5500.00	
Toluene	108-88-3	5000 00	ns	46000 00	ns	2300 00	n	1000 00	1 70	0 76
Toluene diisocyanate mixture (TDI)	26471-62-5	54 00	n	230 00	n	0.15	n		0 00	
Toluene-2,4-diamine	95-80-7	0 13	c	0 45	c	0 02	c		0.00	
Toluene-2,5-diamine	95-70-5	37000 00	n	370000.00	nm	22000 00	n		9 60	
Toluene-2,6-diamine	823-40-5	1800 00	n	18000 00	n	1100 00	n		0 49	
Toluidine, o- (Methylaniline, 2-)	95-53-4	2 70	c	9 60	c	0.37	c		0 00	
Toluidine, p-	106-49-0	2 60	c	9 10	c	0.35	c		0 00	
Toxaphene	8001-35-2	0 44	c	1 60	c	0 06	c	3 00	0 01	0 60
Tralomethrin	66841-25-6	460 00	n	4600 00	n	270 00	n		140 00	
Triallate	2303-17-5	790 00	n	8000 00	n	470 00	n		1.70	
Triasulfuron	82097-50-5	610 00	n	6200 00	n	370 00	n		0 33	
Tribromobenzene, 1,2,4-	615-54-3	310 00	n	3100 00	n	180.00	n		0.30	
Tributyl Phosphate	126-73-8	53 00	c	190 00	c	7.30	c		0.03	
Tributyltin Compounds	NA	18 00	n	180.00	n	11 00	n			
Tributyltin Oxide	56-35-9	18 00	n	180 00	n	11 00	n		820 00	
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	43000 00	ns	180000 00	nms	59000 00	n		150 00	
Trichloroaniline HCl, 2,4,6-	33663-50-2	17 00	c	59 00	c	2 30	c		0 00	
Trichloroaniline, 2,4,6-	634-93-5	14 00	c	51 00	c	2 00	c		0 00	
Trichlorobenzene, 1,2,4-	120-82-1	87 00	n	400.00	ns	8 20	n	70 00	0 01	0.11
Trichloroethane, 1,1,1-	71-55-6	9000.00	ns	39000 00	ns	9100.00	n	200 00	3 30	0.07
Trichloroethane, 1,1,2-	79-00-5	1 10	c	5.50	c	0 24	c	5 00	0.00	0 00
Trichloroethylene	79-01-6	2 80	c	14 00	c	1 70	c	5 00	0.00	0 00
Trichlorofluoromethane	75-69-4	800 00	n	3400 00	ns	1300 00	n		0 84	
Trichlorophenol, 2,4,5-	95-95-4	6100 00	n	62000 00	n	3700.00	n		9 40	
Trichlorophenol, 2,4,6-	88-06-2	44 00	c**	160 00	c**	6 10	c**		0 02	
Trichlorophenoxy) Propionic Acid, 2(2,4,5-	93-72-1	490 00	n	4900.00	n	290.00	n	50.00	0 11	0 02
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	610.00	n	6200 00	n	370 00	n		0 11	
Trichloropropane, 1,1,2-	598-77-6	390 00	n	5100.00	ns	180 00	n		0 08	
Trichloropropane, 1,2,3-	96-18-4	0 09	c	0 41	c	0 01	c		0.00	
Trichloropropene, 1,2,3-	96-19-5	2 70	n	12 00	n	2 10	n		0 00	
Tridiphane	58138-08-2	180 00	n	1800 00	n	110 00	n		0 41	
Triethylamine	121-44-8	170 00	n	710 00	n	15 00	n		0 01	
Trifluralin	1582-09-8	63 00	c**	220 00	c*	8.70	c*		0 17	
Trimethyl Phosphate	512-56-1	13 00	c	47 00	c	1 80	c		0.00	
Trimethylbenzene, 1,2,4-	95-63-6	67 00	n	280 00	ns	15.00	n		0 02	

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Contaminant		Screening Levels							Protection of Groundwater	
Analyte	CAS No.	Residential Soil mg/kg	key	Industrial Soil mg/kg	key	Tapwater ug/L	key	MCL ug/L	Risk-based SSL mg/kg	MCL-based SSL mg/kg
Trimethylbenzene, 1,3,5-	108-67-8	47.00	n	200.00	n	12.00	n		0.02	
Trinitrobenzene, 1,3,5-	99-35-4	2200.00	n	27000.00	n	1100 00	n		2.60	
Trinitrotoluene, 2,4,6-	118-96-7	19 00	c**	79 00	c**	2 20	c**		0 01	
Triphenylphosphine Oxide	791-28-6	1200 00	n	12000 00	n	730 00	n		1 50	
Tris(2-chloroethyl)phosphate	115-96-8	35 00	c	120.00	c	4 80	c		0 00	
Tris(2-ethylhexyl)phosphate	78-42-2	150 00	c*	540 00	c	21 00	c		96 00	
Tetrabromodiphenyl ether, 2,2',4,4'- (BDE-47)	5436-43-1	7 80	n	100 00	n	3 70	n			
Tri-n-butyltin	688-73-3	18 00	n	180.00	n	11 00	n		0 28	
Uranium (Soluble Salts)	NA	230.00	n	3100.00	n	110 00	n		49 00	
Vanadium Pentoxide	1314-62-1	400 00	c**	2000 00	c**	330 00	n			
Vanadium Sulfate	36907-42-3	1600 00	n	20000.00	n	730 00	n			
Vanadium and Compounds	NA	390 00	n	5200 00	n	180 00	n		180 00	
Vanadium, Metallic	7440-62-2	550 00	n	7200 00	n	260 00	n		260 00	
Vernolate	1929-77-7	61 00	n	620 00	n	37.00	n		0 04	
Vinclozolin	50471-44-8	1500 00	n	15000 00	n	910 00	n		0 71	
Vinyl Acetate	108-05-4	990 00	n	4200.00	ns	410.00	n		0.09	
Vinyl Bromide	593-60-2	0 11	c*	0 58	c*	0 15	c*		0 00	
Vinyl Chloride	75-01-4	0 06	c	1 70	c	0 02	c	2 00	0.00	0 00
Warfarin	81-81-2	18 00	n	180 00	n	11.00	n		0.01	
Xylene, Mixture	1330-20-7	600.00	ns	2600 00	ns	200 00	n	10000 00	0 23	11 00
Xylene, P-	106-42-3	4700 00	ns	20000 00	ns	1500.00	n		1 60	
Xylene, m-	108-38-3	4500 00	ns	19000 00	ns	1400.00	n		1.60	
Xylene, o-	95-47-6	5300 00	ns	23000 00	ns	1400 00	n		1 60	
Zinc (Metallic)	7440-66-6	23000 00	n	310000 00	nm	11000 00	n		680 00	
Zinc Phosphide	1314-84-7	23 00	n	310 00	n	11 00	n			
Zineb	12122-67-7	3100 00	n	31000 00	n	1800 00	n		0 40	

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