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February 23, 2009

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Mr. John Banks Remedial Project Manager (3HS23) U.S. Environmental Protection Agency 2 State Street Hamburg, PA 19526-2012

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,

Xuanda

Lucinda J. Pype ' Project Manager CDM

CC:

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

February 23, 2009

Data Evaluation Oversight Report

## **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 Document Control No.: 3330-006-RT-OTHR-00530

February 23, 2009

Prepared for: U.S. Environmental Protection Agency Region III Philadelphia, Pennsylvania

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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<sup>®</sup> 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:

,	PRP		CDM		
Parcel and Sample	Number	Number	Number	Number	Analycie
Matrix	of	of	of	of	Analysis
-	borings	intervals	borings	intervals	,
Main Parcel (AGI Figure	s 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 (AC	31 Figure 5		an ang sang sa		
Soil Samples	8	26	.3	- 9	VOCs, SVOCs, Metals
Parking Lot Parcel (AGI	Figure 6)				
Soil Samples	5	19	1	3	VOCs, SVOCs, Metals

#### Table 1 Sample Analysis Summary for PRP and CDM

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
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- 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  $\mu$ g/kg, and the SOW SOM01.2 method returned a result of 3,500  $\mu$ g/kg, resulting in an RPD of 61.4%. 2-methylnaphthalene was 4,300  $\mu$ g/kg under SOW SOM01.2 and 6,600  $\mu$ g/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  $\mu$ g/kg and the SW846 8082 result was 140  $\mu$ g/kg. Both results were under the residential RBC of 220  $\mu$ g/kg. At MP48-9 the EPA analysis returned a result of 330  $\mu$ g/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 -  $260 \mu g/kg$ , benzo(a)pyrene -  $320 \mu g/kg$ , and benzo(b)flouranthene -  $230 \mu g/kg$ ) were above the residential RBCs for these compounds. At WH2-33, the SOW SOM01.2 result for benzo(b)flouranthene was 800  $\mu g/kg$  compared to an SW846 8260B analytical result of 490  $\mu g/kg$ , 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  $\mu$ g/kg via SOW SOM01.2 and 770  $\mu$ g/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 –  $100 \mu g/kg$ ) detected was above the residential RBC for the compound. The SW846 8260B data for 5 of the 11 results (benzo(a)anthracene – 2,200  $\mu g/kg$ , benzo(a)pyrene –  $1,700 \mu g/kg$ , benzo(b)flouranthene –  $1,800 \mu g/kg$ , dibenz(a,h)anthracene 420  $\mu g/kg$  and indeno(1,2,3-cd)pyrene –  $1,000 \mu g/kg$ ) 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:
  - o MP28-33 arsenic (21.3 mg/kg)
  - o MP34-57 lead (1,820 mg/kg)
  - o MP46-33 arsenic (49.9 mg/kg)
  - o MP48-9 lead (2,100 mg/kg)
  - o MP48-9 aroclor 1254 (330 µg/kg)
  - o MP45-33 all volatile analysis
  - o WH2-33 benzo(b)flouranthene (800 µg/kg)
  - o WH2-57 lead ( 39,400 mg/kg)
  - o WH13-9 lead (4,540 mg/kg)
  - o BW5-9 lead (1,060 mg/kg)
  - o BW8-9 arsenic (56 mg/kg)
  - o BW8-9 benzo(b)flouranthene  $(1,300 \,\mu g/kg)$
- 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**

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

	a de la compañía de l	-MP08-09					MP08-33	(All and the			
Metals	Units	COM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	25	J	58		79 5%	0 35	В	12	U	NA
ARSENIC	MG/KG	72	L	65		10 2%	26	L	34		26 7%
LEAD	MG/KG	151	J	143	J	5 4%	21 5	J	21 3	'J	09%
		MP08-57					MP08-81				
Second Second Second		CDM	Qualifier .	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD -
ANTIMONY	MG/KG	1	, В	18	-	NA	73	UL	12	Ù	NA
	MG/KG	3	L	32		6 5%	0 53	В	19		NA
LEAD	MG/KG	224	J	69 8	J	105 0%	12 3	J	12 5	J	1 6%
		MP09-09					MP09-33				9
	200 C	CDM	Qualifier	**** AGI	Qualifier	RPD	COM	Qualifier	AGI	Qualifier*	RPD
ANTIMONY	MG/KG	29	J	18 2		145 0%	0 94 -	8	15		NA
ARSENIC	MG/KG	43	L	7		47 8%	69	L	57		19 0%
LEAD	MG/KG	7080	J	19600	J	93 9%	114	L	86.1	J	27 9%
		MP21-9	604 L.S				MP21-57				
Contraction of the second second second	545 T	CDM 💈	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD .
ANTIMONY	MG/KG	28	, J	57	J	68 2%	52	J	85	J	48 2%
ARSENIC	MG/KG	9 2 <sup>.</sup>	_ L '	11.3		20 5%	57	L ·	<sup>*</sup> 62	•	8 4%
LEAD	MG/KG	573	J	732		24.4%	<b>633</b>	J	672		60%
		MP21-81					MP21-105				
		CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0 66	J	03	J	75.0%	~ / <b>R</b>		0 28	J	NA
ARSENIC	MG/KG	4	L	52		26 1%	51	L	47		8 2%
LEAD	MG/KG	13 2	Ĵ	<sup>-</sup> 16 1		19 8%	10 1	J	14		32 4%
	( <b>1</b>	MP21-129					MP28-9				
		COM	Qualifier	AGI	Qualifier	RPD	COM	Qualifier	He Agi	Qualifier	RPD
ANTIMONY	MG/KG	0 55	J	0 14	J	118 8%	101	L	153	J	40 9%
ARSENIC	MG/KG	35	L	36		2 8%	28	L	34		19 4%
LEAD	MG/KG	136	J	13 5		0 7%	683	J	601	•	12 8%

Notes

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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

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

and the second		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	114		60.6%	94	L	23 1		84 3%
LEAD	MG/KG	237	J	62 9		116 1%_	56 3	J	238		123.5%
		MP28-81					MP8401		and a second second		
	10 A 10	CDM	Cualifier	AGI	Qualifier	RPD	COM	Qualifier	AGI	Opelifier	10997
ANTIMONY	MG/KG	2.6	J	12.8	1	132.5%	R	1	13	IJ	NA
ARSENIC	MG/KG	36	L	39.1		8 3%	· 2		, 2		0 0%
LEAD	MG/KG	50.8	J	-647		24.1%	11 1	L	11 5	J	3 5%
		MP41.9					MP41-33				a second
	1295 (A)	CDM	Gualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	- Qualifier	RPD
ANTIMONY	MG/KG	25.3	L	138 _	J	138.0%	0 46	Ĵ	14	J	101.1%
ARSENIC	MG/KG	7		92		27 2%	2.9	· ·	33		12 9%
LEAD	MG/KG	2440	J	2980	- ·	19 9%	28	ſ	32 3	`	14 3%
		ME41-67					MP41-81				
		CDM	Qualifier	AG	Qualifier	RPD	Сри	Qualifier		Cicalifier	RPD
ANTIMONY	MG/KG	0.77	J	1.2	Ĵ	43 7%	0.57	8	11	J	NA
ARSENIC	MG/KG	· 2.9		56	,	63 5%	21		25		17 4%
LEAD	MG/KG	10 6	1-	15 8		39 4%	9.7	J	17.7		58 4%
		MIRANA					MP44-33				
		CDM	Citelliter	AGI	Qualifier	RPD	MGD.	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0.45	ر `	0 19	J	81.3%	1.2	J	25	J	70 3%
ARSENIC	MG/KG	3.8	-	.4.2		10 0%	11 2		12.7		12 6%
LEAD	MG/KG	13.7	L	178		26.0%	79 8	L L	78.3	J	1 9%
	a da an	MP44-07					MP44-81		ана <b>н</b> а с	20	
		COM	Qualifier	AGI	<b>Oualifier</b>	RPD	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0.38	J	1.2	UJ	NĄ	0.72	J	12	UJ T	NA
ARSENIC	MG/KG	4		38		5 1%	58		6		3 4%
LEAD	MG/KG	10 1	L	15 3		40.9%	17 9	- L	. 16 7	J	6 9%
		MP48-33					MP46-57	14 - Taylor 10 - Su			
	* *** <u>****</u>	CDM	Qualifier	AGI	Qualifier	RPD	COM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	5.9	J	84 8	J	174 0%	0 56	8.	12	IJ	NA
ARSENIC	MG/KG	49.9		22.5		75 7%	19		18		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

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

U Non-detect

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

	and the second second second	MEMORIA		r San a shara			MPAR-RI		*********		At Anna I
Metals	Units	COM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Clualifier	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%	29	'	43		38 9%
LEAD	MG/KG	462	L	257	• J	57 0%	- 81	L	13 5	J	50 0%
		MP50-9	an salad			- 14	MP50-33	Contest			1. S. M. 19
		COM	Oualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD.
ANTIMONY	MG/KG	0.37	_ J	11	ູ່ປ	NA	26	J	59	J	77 6%
ARSENIC	MG/KG	3		3.3	-	9 5%	59		6	1	1 7%
LEAD	MG/KG	17.2	L	20.8		18 9%	307	L	291	J	5 4%
		MP80-57-		ŵ.			MP50-81				1
		GDM .	Qualifier	AGI	Qualitier	RPD	CDM .	Qualifier	AG	Qualifier	RPD
ANTIMONY	MG/KG	0 75	J	0 15	L J	133.3%	0 51	J	1.1	UJ	73.3%
ARSENIC	MG/KG	61		71		15.2%	3.5		4.3	т	20 5%`
	MG/KG	16.2	L	15 5		4 4%	10 5·	L	146	J	32 7%

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Notes

L. Analyte Present. Reported value may be biased low

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

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

U Non-detect

NA = Not applicable

1

# Table 2b Total Metals Sample ComparisonMain ParcelPrice Battery OU2Hamburg, Pennsylvania

		MP34-33					MP34-57			1.0		ME45-36		1000	3a	
Metals	Units	CDM		AGI		RPD	CDM		AGI		RPD	CDM		AGI		RPD
ALUMINUM	MG/KG	4230		3530	ŀ	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	В	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	٦	10.3%	3.5	J	4.6	J	27.2%	10.1	J	9.2		9.3%
COPPER	MG/KG	41	κ	34.8		16.4%	20.8	κ	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		<sup>-</sup> 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	В	0.56	U	NA	1	UL	0.63	U	NA	1	UL	0.11	J	NA
SODIUM	MG/KG	441	В	224	J	NA	287	В	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	Ĵ	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%
	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:

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

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#### 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	Ĵ	<sup>~</sup> 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	Κ	32		8.1%	25.5	κ	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	υ	NA	3.5	U	0.53	υ	NA
SILVER	MG/KG	1	UL	0.4	J	NA	0.43	В	0.14	J	NA
SODIUM	MG/KG	129	В	33.5	J	NA	223	В	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:

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

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

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

U : Non-detect

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

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		MP08-09					MPOSET			1.1.1	
Analyte	Units	COM .	Qualifier	AGI	Cualities	RAD	coki.	Qualifier	AGI	Qualifier	a RPD
1,1,1-Trichloroethane	UG/KG	5	UL	73	U	NA	5	U	65	U .	NA
1,1,2,2-Tetrachloroethane	UG/KG	5	UL	73	U	NA	5	U	65	U	' NA
1,1,2-Trichloro-1,2,2-trifluoroethane	UG/KG	5	UL	73	U	NA	5	5 U	65	U	NA
1,1,2-Trichloroethane	UG/KG	5	UL	73	U	NA -	` 5	U	65	U	NA
1,1-Dichloroethane	UG/KG	5	U	73	U	NA	-5	<u>    U</u>	65	U	NA
1,1-Dichloroethene	UG/KG	13	8	73	U	NA	0 81	В	65	U	NA
1,2,3-Trichlorobenzene	UG/KG	14	B	NA 1	NA	NA.	0 57	B	NA	NA	NA
1,2,4-Trichiorobenzene	UG/KG	13	В	73	U	NA	0 52	8	65	Ū	NA
1,2-Dibromo-3-chloropropane	UG/KG	5	UL _	73	U	NA	5	U	65	U	NA
1,2-Dibromoethane	UG/KG	5	UL	73	U	NA	5	U	65	U	NA
1,2-Dichlorobenzene	UG/KG -	5	UL	73	U	NA	5	υ	65	U	NA
1,2-Dichloroethane	UG/KG	5	UL	73	U	NA	5	U	65	U	NA
1,2-Dichloropropane	UG/KG	6	UL	73	U	NA <sup>°</sup>	5	U	65	U	NA
1,3-Dichlorobenzene	UG/KG	5	UL	73	UĨ	NA	5	` U	65	U	NA
1,4-Dichlorobenzene	UG/KG	5	UL	73	U	NA	5	U	- 65	U	NA
1,4-Dioxane	UG/KG	1	R	NA :	NA	NA		R	NA	NA	NA
2-Butanone	UG/KG	23	₿	51	J	NA	6.2	8.	65	U	NA
2-Hexanone	UG/KG	12	́В	73-	U	NA	64	8	65	U	NA
4-Methyl-2-pentanone	UG/KG	17	J	73	U	NA	0 67	J	65	U	NA
Acetone	UG/KG	57	В	16	J	NA	13	В	26	U	NA
Benzene	UG/KG	5	UL	73	IJ	NA	5	U	65	IJ	NA
Bromochloromethane	UG/ĶG	5	υ	NA	NA	NA	5	U	NA	NA	NA
Bromodichloromethane	UG/KG	5	UL	73	υ	NA	5	U	65	υ	NA _
Bromoform	UG/KG	5	U	73	U	NA	5	U	65	U	NA
Bromomethane	UG/KG	5	U	73	U	NA	5	U	65	υ	NA
CarbonDisulfide	UG/KG	0 97	J	73	U	NA	5	U	65_	U	NA
Carbontetrachioride	UG/KG	14	L	73	U	NA	5	U	65	U U	NA
Chlorobenzene	UG/KG	, 5	UL	73	U	NA	5	- U -	65	U	NA
Chloroethane	UG/KG	5	U	73	UJ	NA	5	U	65	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

		MPOS-09					MPOD .		2		
ADBIYLE	Units	CDM	Qualitier	AGI	Qualifier	RPD	CDM	Cuellier	AG	Qualifier	(RPD)
Chloroform	UG/KG	5	U	73,	U	NA	<sup>-</sup> 5	U	65	U ~	NA
Chloromethane	UG/KG	5	U	73	U	<sup>-</sup> NA	5	U	65	U	NA
cis-1,2-Dichloroethene	UG/KG	-5	υ	73	U	NA	5.	U	65	U	NA
cis-1,3-Dichloropropene	UG/KG	5	UL	73	U	NA	5	U	6.5	U	NA
Cyclohexane	UG/KG	5	UL	73	U	NA	5	U	65	U	NA
Dibromochloromethane	UG/KG	5	υ	73	U	NA	5	U	65	U	NA
Dichlorodifluoromethane	UG/KG	5	U	73	U	NA	5	U	65	U	NA
Ethylbenzene	UG/KG	5	UL	7.3	U	NA	5	U	6.5	U	NA
lsopropylbenzene	UG/KG	5	UL	73	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	73	U	NA	5	U	85	υ	NA
Methylcyclohexane	UG/KG	. 5	UL	73	U	NA	5	υ	65	U	NA
Methylenechloride	UG/KG	11	B	73	U	NA	0 58	B	65	U	NA
Methyltert-butylether	UG/KG	5	UL	73	U	NA	5	U	65	U	NA
o-Xylene	UG/KG	5	UL	NA	NA	NA	5	U	NA	NA	NA
Styrene	UG/KG	5 -	UL	73	U	NA	5	U	- 65	U	NA
Tetrachloroethene	UG/KG	5	UL	73	U	NA	5	U	65	U	NA
Toluene	UG/KG	5	UL	73	U	NA	5	U	65	U	NA
trans-1,2-Dichloroethene	UG/KG	5	U	73	U	NA	5	U	65	U	NA
trans-1,3-Dichloropropene	UG/KG	5	UL	73	U	_ NA	5	υ	65	U	NA
Trichloroethene	UG/KG	5	UL	73	U ·	NA	5	υ	65	U	NA
Trichlorofluoromethane	UG/KG	5	UL	73	UJ	NA	5	υ	65	UJ	NA
Vinyichloride	UG/KG	5	· U	73	U	NA	5	U	6.5	- U	NA
Xylenes (total)	UG/KG	NA	NA	22	U	NA	NA	NA	20	U	NA

#### Notes.

L. Analyte Present. Reported value may be biased low

J. Analyte Present. Reported value may not be accurate

or precise.

6. The analyte concerned was also detected in the

laboratory or field blank associated with the sample

U • Non-detect

		MP46-33					MP48-33	5			
Analytie	i Ginte	COM		- <b>AG</b> I	(Continers)	RPD	CDM	• Capitalifier	AGI	Coalifier	RPD
1,1,1-Trichloroethane	UG/KG	250	UL -	* <b>280</b>	U	NA	5,	U	49	IJ	NA
1,1,2,2-Tetrachioroethane	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	υ	NA	5	U	49	υ	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-Dichlaroethene	UG/KG	250	UL	280	U	NA	5	υ	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	υ	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	JU	NA	5	U	49	U	NA
1,2-Dichlorobenzene	UG/KG	- 250	UL	43	J	NA	5	Ū	49	U	NA
1,2-Dichloroethane	UG/KG	250	UL	280	U	NA	5	ົບ	49	ັບ	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	Ū	49	U	NA
1,4-Dioxane	UG/KG	5000	· UL	NA	NA	NA		R	NA NA	NA	NA
2-Butanone	UG/KG	500	UL	280	U	NA	74 -	В	49	U	NA
2-Hexanone	UG/KG	500	UL	280	U	NA	85≈.	В	49	U	NA
4-Methyl-2-pentanone	UG/KG	500	UL	280	νU	NA	10	, n	49	IJ	NA
Acetone	UG/KG	500	UL .	1100	U	NA	12	8	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	<b>U U</b>	NA	5	υ	49	U	NA
Bromomethane	UG/KG	250	UL	280 -	U	- NA	5	υ	49	ບມ	NA
CarbonDisuifide	UG/KG	250	- UL	280	U	NA	5	- U	49	- U	NA
Carbontetrachloride	UG/KG	250	UL	280	U	NA	5	Ū	49	UJ	NA
Chlorobenzene	UG/KG	250	t UL	280	U	NA	5	Ū	49	U	NA
Chloroethane	UG/KG	250	UL	280 -	U	NA	5	U	49	UJ	NA

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Notes.

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J: Analyte Present. Reported value may not be accurate

or precise

8. The analyte concerned was also detected in the

laboratory or field blank associated with the sample.

U Non-detect

NA = Not applicable

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		MP45-33					MP48-33			••••	
Analyte	··· Unita ···	COM	· Qualifier .	AGI	Opalifier	, 19D	CDM	Qualifier	AGI	Qualitiet	RPD
Chloroform	UG/KG	<b>, 61000</b>	J	310	· · ·	99 5%	0.62	~ B	49	- U	NA
Chloromethane	UG/KG	34000	` J	280	ີ ປີ.	NA	5	U	49	U	NA
cis-1,2-Dichloroethene	UG/KG	250	UL	280	υ	NA	5	U	49	U	NA
cis-1,3-Dichloropropene	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
Cyclohexane	UG/KG	1400000	L	3800		99 7%	5	U	49	U	NA
Dibromochioromethane	UG/KG	250	UL	280	U,	NA	6	υ	49	, U	NA
Dichlorodiflucromethane	UG/KG	250	UL	280	U	NA	5	υ	49	U	- NA
Ethylbenzene	·UG/KG	2400000	L	13000	-	99 5%	5	U	49	U	NA
Isopropylbenzene	UG/KG	530000	L	2600		99 5%	5	U	49	U '	NA
m,p-Xytene	UG/KG	600000	, L	280	-	100 0%	5	U	NA	NA	NA
Methylacetate	UG/KG	250	UL	280	U	NA	5	U	49	υ	NA
Methylcyclohexane	UG/KG	1100000	L	5200	-	99 5%	5	υ	49	U	NA
Methylenechloride	· UG/KG	22000	J	280	U	NA	14	В	49	U	NA
Methyltert-butylether	UG/KG	~ 250	UL	280	-	NA	5	υ	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	Ŭ	49	U	NA
Tetrachioroethene	UG/KG	250	UL	280	U	NA	5	U	49	V	NA
Toluene	UG/KG	23000	J	170	J	99 3%	5	U	49	U	NA
trans-1,2-Dichloroethene	UG/KG	250	UL	280	U	NA	5	U	49	U	NA
trans-1,3-Dichloropropene	UG/KG	250	UL	280	U	NA	5	υ	49	U	NA
Trichloroethene	UG/KG	24000	J	280	U	NA	5	U	49	U -	. <b>NA</b>
Trichlorofluoromethane	UG/KG	250	UL	280	,U	NA	5	U	49	UJ	NA
Vinylchloride	UG/KG	250	UL	280	U	NA	5	U	49	UU	-NA
Xytenes (total)	UG/KG	NA	NA	8300		NA	NA	NA	15	U	NA

Notes

L. Analyte Present, Reported value may be blased 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

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

		MP48-57				1
Anatyla	Uppa .	COM .	Qualitie	AGI	Qualifier	RPD
1,1,1-Trichloroethane	.UG/KG	<b>.5</b>	UL	- 4.9	U	NA
1,1,2,2-Tetrachloroethane	UG/KG	5	U	NA	- NA	, NA
1,1,2-Trichioro-1,2,2-trifluoroethane	UG/KG	5	UL	49	Ū	NA
1,1,2-Trichloroethane	UG/KG	5	U	49'	U	NA
1,1-Dichloroethane	UG/KG	5	U	49	U	NA
1,1-Dichloroethene	UG/KG	₹5	UL	49	- U	NA
1,2,3-Trichlorobenzene	UG/KG	0 63	B	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	0 48	В	49	UJ	NA
1,2-Dibromo-3-chioropropane	UG/KG	5	U	49	U	NA
1,2-Dibromoethane	UG/KG	5	UL	49	U	NA
1,2-Dichlorobenzene	UG/KG	5	UL	49	υ	NA
1,2-Dichloroethane	UG/KG	5	UL	49	U	NA
1,2-Dichloropropane	UG/KG	5	U	49	U	NA
1,3-Dichlorobenzene	UG/KG	5	UL	49	U	NA
1,4-Dichlorobenzene	UG/KG	5	UL	49	U	NA
1,4-Dioxane	UG/KG		R	NA	NA 1	NA
2-Butanone	UG/KG	10	U	49	UJ	NA
2-Hexanone	UG/KG	53	B	49	ູບປ	NA
4-Methyl-2-pentanone	UG/KG	10	U	49	UJ	· NA
Acetone	UG/KG	44	В	20	U	NA
Benzene	UG/KG	5	UL ·	49	υ	NA
Bromochloromethane	UG/KG	5	υ	NA	NA	NA
Bromodichloromethane	UG/KG	5	U	49	υ	NA
Bromoform	UG/KG	5	U	49	υ	NA
Bromomethane	UG/KG	5	U	49	UJ	. <b>NA</b>
CarbonDisulfide	UG/KG	5	U	49	U	NA
Carbontetrachloride	UG/KG	5	UL	49	U	NA
Chlorobenzene	UG/KG	5	UL	49	U	NA
Chloroethane	UG/KG	5	- U	49	- 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

AR302663

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

	. A	MP48-57				
Analyte	Units	CDM	Qualifier	AGI -	Cualifier	* RPD
Chieroferm	UG/KG	5	U	49	U	NA
Chioromethane	UG/KG	5	U	49	UJ	NA
cis-1,2-Dichtoroethene	UG/KG	5	U	49	U	NA
cis-1,3-Dichloropropene	UG/KG	5	U	49	JŪ	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
Isopropyibenzene	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 U	NA
Methylenechloride	UG/KG	11	В	49	υ	NA
Methyltert-butylether	UG/KG	5	UL	NA	NA	NA
o-Xytene	UG/KG	5	UL	NA	NA	NA
Styrene	UG/KG	5	UL	49	U	NA
Tetrachioroethene	UG/KG	5	ŲL	49	U	NA
Toluane	UG/KG	5	UL	49	U	NA
trans-1,2-Dichloroethene	UG/KG	5	<b>U</b>	49	U	NA
trans-1,3-Dichloropropene	UG/KG	5	U	49	υ - ·	NA
Trichloroethene	UG/KG	5	UL	49	U,	NA
Trichlorofluoromethane	UG/KG	5	UL	49	U	NA
Vinylchloride	UG/KG	5	υ	49	U	` NA
Xyisnes (total)	UG/KG	NA	NA	15	U	NA

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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

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U . Non-detect

NA = Not applicable

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

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		MP08-09		1. A. 1.	1000		MP68-81	2 C			
Analyra	Units	COM	Qualifier	AGI	Qualifier	RPO	CÔM	Qualifier	AGI	Qualifier	RPD
1,1'-Biphenyi	UG/KG	170	U	450	U	NA	170	U	390	υ	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	υ	79	IJ	NA
2,3,4,6-Tetrachiorophenol	UG/KG	170	U	NA	NA	NA	170	U	' NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	170	U	450	υ	NA	170	U	390	U	NA
2,4,6-Trichlorophenol	UG/KG	170	U	450	U	NA	170	U	390	U	NA
2,4-Dichiorophenol	UG/KG	170	U	92	U	NA	170	U	79	U	NA
2,4-Dimethylphenol	UG/KG	170	U	450	U	NA	170	υ	390	U	NA
2,4-Dinitrophenoi	UG/KG	330	U	2300	U	NA	330	υ	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	<sup>×</sup> NA	170	U	390	U	NA
2-Chloronaphthalene	UG/KG	170	U ·	92	U,	NA	170	U	79	U	NA
2-Chiorophenol	UG/KG	170	U	450	υ	NA	170	·U	390	U	NA
2-Methyinaphthalene	UG/KG	170	υ	74	J	NA	170	U	79	υ	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	υ	NA	170	U	390	U -	NA
3-Nitroaniline ·	UG/KG	330	υ	2300	U	NA	330	υ	2000	U	NA
4,8-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-Chioroaniline	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	υ	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	υ	2000	υ	NA
Acenaphthene	"'UG/KG	170	U	92	U	NA	170	U	79	U	NA
Acenaphthylene	UG/KG	170	υ	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 blased low

N.,

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

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

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		MP08-09		er de la composition de la composition Composition de la composition de la comp			MP09481		1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.		
Analyta	Units	CDM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPD
Benzaldehyde	UG/KG	170	U _	450	U	NA	170	U	390	Ű	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	υ	79	U	NA
Benzo(b)fluoranthene	UG/KG	<sup>•</sup> 370		420		12.7%	170	U	79	U	NA
Benzo(G,h,i)perylene	UG/KG	180	Ĵ	150		18.2%	170	U	79	U	NA
Benzo(k)flüoranthene	UG/KG	150	J.	92	U	NA	170	U	79	U	NA
Bis(2-Chloroethoxy)methane	UG/KG	170	U z	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	υ	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	Ţ	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	υ.	390	U	NA
Dimethylphthalate	UG/KG	170	U	450	U	NA	170	υ	390	U	NA
Di-n-butyiphthalate	UG/KG	170	, U	450	U	NA	22	J	390	U	NA
Di-n-octytphthalate	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	υ	79	Ų	NA
Hexachlorobenžene	UG/KG	170	U	92	U	NA	170 '	υ	79	บ	· NA
Hexachlorobutadiene	UG/KG	170	U	92	U	NA	170	U	79	U	NA
Hexachlorocyclopentadiene	UG/KG	170	Ų	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	υ	390	U	NA
Naphthalene	UG/KG	170 -	U	55	J	NA	170	U	79	υ	NA
Nitrobenzene	UG/KG	170	U	92	U	NA	170	U,	7 <del>9</del>	υ	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 1	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.

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

ς.

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

Attenyo   Opine   Opine   Acquity   Qualitier   RPD     1,1'-Biphenyi   UG/KG   73   J   2100   U   NA     1,2,4,5-Tetrachtorobenzene   UG/KG   170   U   NA   NA     2,3,4,6-Tetrachtorophenol   UG/KG   170   U   NA   NA     2,3,4,6-Tetrachtorophenol   UG/KG   170   U   NA   NA     2,4,6-Trichtorophenol   UG/KG   170   U   2100   U   NA     2,4,6-Trichtorophenol   UG/KG   170   U   2100   U   NA     2,4,6-Trichtorophenol   UG/KG   170   U   2100   U   NA     2,4-Dimethylphenol   UG/KG   170   U   2100   U   NA     2,4-Dimitrotoluene   UG/KG   170   U   2100   U   NA     2,4-Dimitrotoluene   UG/KG   170   U   2100   U   NA     2,4-Dimitrotoluene   UG/KG   170   U   2100	CDM	No. of Concession, Super-			5 T
1.1*Biphenyl   UG/KG   73   J   2100   U   NA     1.2.4,5-Tetrachlorobenzene   UG/KG   170   U   NA   NA   NA     2.3.4,8-Tetrachlorobenzene)   UG/KG   170   U   430   U   NA     2.3.4,8-Tetrachlorophenol   UG/KG   170   U   NA   NA     2.4,6-Trichlorophenol   UG/KG   170   U   2100   U   NA     2.4,6-Trichlorophenol   UG/KG   170   U   2100   U   NA     2.4,6-Trichlorophenol   UG/KG   170   U   2100   U   NA     2.4,6-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2.4-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2.4-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2.Chlorophthalene   UG/KG   170   U   2100   U   NA     2.Chlorophthalene   UG/KG	470	. Enalmer	AGI	Qualifier	RPD
1,2,4,5-Tetrachlorobenzene UG/KG 170 U NA NA NA   2,2-Oxybis(1-chloropropane) UG/KG 170 U 430 U NA   2,3,4,8-Tetrachlorophenol UG/KG 170 U NA NA NA   2,4,8-Trichlorophenol UG/KG 170 U 2100 U NA   2,4,8-Trichlorophenol UG/KG 170 U 2100 U NA   2,4-Dinthrophenol UG/KG 170 U 2100 U NA   2,4-Dinthrophen	1/0	Ū	390	U	NA
2.2-Oxybis(1-chloropropane)   UG/KG   170   U   430   U   NA     2.3.4,8-Tetrachlorophenol   UG/KG   170   U   NA   NA   NA     2.4,5-Trichlorophenol   UG/KG   170   U   2100   U   NA     2.4,6-Trichlorophenol   UG/KG   170   U   2100   U   NA     2.4-Dichlorophenol   UG/KG   170   U   430   U   NA     2.4-Dinitrophenol   UG/KG   170   U   430   U   NA     2.4-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2.6-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2.6-Dinitrotoluene   U	170	U	NA	NA	NA
2,3,4,8-Tetrachlorophenol   UG/KG   170   U   NA   NA   NA     2,4,5-Trichlorophenol   UG/KG   170   U   2100   U   NA     2,4,6-Trichlorophenol   UG/KG   170   U   2100   U   NA     2,4-Dichlorophenol   UG/KG   170   U   430   U   NA     2,4-Dichlorophenol   UG/KG   170   U   430   U   NA     2,4-Dimethylphenol   UG/KG   170   U   2100   U   NA     2,4-Dimethylphenol   UG/KG   170   U   2100   U   NA     2,4-Dimethylphenol   UG/KG   170   U   2100   U   NA     2,4-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2,6-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2-Chiorophenol   UG/KG   170   U   2100   U   NA     2-Methylphenol   UG/KG	170	ν υ,	80	U	NA
2,4,5-Trichiorophenol   UG/KG   170   U   2100   U   NA     2,4,6-Trichiorophenol   UG/KG   170   U   2100   U   NA     2,4-Dichlorophenol   UG/KG   170   U   430   U   NA     2,4-Dimethylphenol   UG/KG   170   U   430   U   NA     2,4-Dimethylphenol   UG/KG   170   U   2100   U   NA     2,4-Dimitrophenol   UG/KG   170   U   2100   U   NA     2,4-Dimitrotoluene   UG/KG   170   U   2100   U   NA     2,6-Dinitrotoluene   UG/KG   170   U   430   U   NA     2.Chiorophenol   UG/KG   170   U   2100   U   NA     2.Chiorophenol   UG/KG   170   U   2100   U   NA     2.Chiorophenol   UG/KG   170   U   2100   U   NA     2.Nitrophenol   UG/KG   170	170	U	NA	NA	NA
2,4,6-Trichiorophenol   UG/KG   170   U   2100   U   NA     2,4-Dichlorophenol   UG/KG   170   U   430   U   NA     2,4-Dimethylphenol   UG/KG   170   U   2100   U   NA     2,4-Dimethylphenol   UG/KG   170   U   2100   U   NA     2,4-Dinitrophenol   UG/KG   170   U   2100   U   NA     2,4-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2,6-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2,6-Dinitrotoluene   UG/KG   170   U   430   U   NA     2,6-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2,6-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2-Chiorophenol   UG/KG   170   U   2100   U   NA     2-Nitroaniline   UG/KG   170	170	U	390	U	NA
2,4-Dichlorophenol   UG/KG   170   U   430   U   NA     2,4-Dimethylphenol   UG/KG   170   U   2100   U   NA     2,4-Dimethylphenol   UG/KG   330   U   11000   U   NA     2,4-Dimitrophenol,   UG/KG   170   U   2100   U   NA     2,4-Dimitrotoluene   UG/KG   170   U   2100   U   NA     2,6-Dimitrotoluene   UG/KG   170   U   2100   U   NA     2,6-Dimitrotoluene   UG/KG   170   U   2100   U   NA     2,6-Dimitrotoluene   UG/KG   170   U   2100   U   NA     2-Chiorophenol   UG/KG   170   U   2100   U   NA     2-Methylnaphthalene   UG/KG   170   U   2100   U   NA     2-Nitroaniline   UG/KG   170   U   2100   U   NA     3,3'-Dichlorobenzidine   UG/KG <t< td=""><td>170</td><td>U</td><td>390</td><td>Û</td><td>NA</td></t<>	170	U	390	Û	NA
2,4-Dimethylphenol   UG/KG   170   U   2100   U   NA     2,4-Dinitrophenol,   UG/KG   330   U   11000   U   NA     2,4-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2,6-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2,6-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2,6-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2-Chiorophenol   UG/KG   170   U   2100   U   NA     2-Chiorophenol   UG/KG   170   U   2100   U   NA     2-Methylphenol   UG/KG   170   U   2100   U   NA     2-Nitroaniline   UG/KG   170   U   2100   U   NA     3,3'-Dichtorobenzidine   UG/KG   170   U   2100   U   NA     4,8-Dinitro-2-methylphenol   UG/KG <t< td=""><td>170</td><td>U</td><td>80</td><td>υ</td><td>NA</td></t<>	170	U	80	υ	NA
2,4-Dinitrophenci   UG/KG   330   U   11000   U   NA     2,4-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2,8-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2,6-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2-Chioronaphthalene   UG/KG   170   U   430   U   NA     2-Chiorophenol   UG/KG   170   U   2100   U   NA     2-Methylnaphthalene   UG/KG   170   U   2100   U   NA     2-Methylphenol   UG/KG   170   U   2100   U   NA     2-Nitroaniline   UG/KG   170   U   2100   U   NA     3.3'-Dichlorobenzidine   UG/KG   170   U   2100   U   NA     4,8-Dinitro-2-methylphenol   UG/KG   330   U   11000   U   NA     4-Chioro-3-methylphenol   UG/KG	170	U	390	U	NA
2,4-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2,6-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2-Chioronaphthalene   UG/KG   170   U   430   U   NA     2-Chiorophenol   UG/KG   170   U   2100   U   NA     2-Chiorophenol   UG/KG   170   U   2100   U   NA     2-Methylnaphthalene   UG/KG   170   U   2100   U   NA     2-Methylphenol   UG/KG   170   U   2100   U   NA     2-Nitroaniline   UG/KG   170   U   2100   U   NA     2-Nitroaniline   UG/KG   170   U   2100   U   NA     3,3'-Dichlorobenzidine   UG/KG   170   U   2100   U   NA     4-Bromophenyl-phenylethenol   UG/KG   330   U   11000   U   NA     4-Chioro-3-methylphenol   UG/KG	330	U	2000	U	NA
2,8-Dinitrotoluene   UG/KG   170   U   2100   U   NA     2-Chioronaphthalene   UG/KG   170   U   430   U   NA     2-Chiorophenol   UG/KG   170   U   2100   U   NA     2-Chiorophenol   UG/KG   170   U   2100   U   NA     2-Methylnaphthalene   UG/KG   4300   6600   42.2%     2-Methylphenol   UG/KG   170   U   2100   U   NA     2-Nitroaniline   UG/KG   170   U   2100   U   NA     2-Nitroaniline   UG/KG   170   U   2100   U   NA     3.3'-Dichlorobenzidine   UG/KG   170   U   2100   U   NA     4-Bromophernyl-phenylethenol   UG/KG   330   U   11000   U   NA     4-Chioro-3-methylphenol   UG/KG   170   U   2100   U   NA     4-Chiorophernyl-phenylether   UG/KG   170 <t< td=""><td>170</td><td>U</td><td>390</td><td>U</td><td>NA</td></t<>	170	U	390	U	NA
2-Chloronaphthalene   UG/KG   170   U   430   U   NA     2-Chlorophenol   UG/KG   170   U   2100   U   NA     2-Methylnaphthalene   UG/KG   4300   6600   42.2%     2-Methylphenol   UG/KG   170   U   2100   U   NA     2-Methylphenol   UG/KG   170   U   2100   U   NA     2-Nitroaniline   UG/KG   170   U   2100   U   NA     2-Nitroaniline   UG/KG   170   U   2100   U   NA     3,3'-Dichlorobenzidine   UG/KG   170   U   2100   U   NA     3,3'-Dichlorobenzidine   UG/KG   170   U   2100   U   NA     4-Bromophernyl-phenol   UG/KG   330   U   11000   U   NA     4-Chloroa-s-methylphenol   UG/KG   170   U   2100   U   NA     4-Chlorophenyl-phenylether   UG/KG   170   U	170	U	390	U	NA
2-Chiorophenol   UG/KG   170   U   2100   U   NA     2-Methylnaphthalene   UG/KG   4300   6600   42.2%     2-Methylphenol   UG/KG   170   U   2100   U   NA     2-Methylphenol   UG/KG   170   U   2100   U   NA     2-Nitroaniline   UG/KG   330   U   11000   U   NA     2-Nitroaniline   UG/KG   170   U   2100   U   NA     3,3'-Dichlorobenzidine   UG/KG   170   U   2100   U   NA     3,3'-Dichlorobenzidine   UG/KG   170   U   2100   U   NA     4-Stronophernyl-phenol   UG/KG   330   U   11000   U   NA     4-Chioro-3-methylphenol   UG/KG   170   U   2100   U   NA     4-Chioro-aniline   UG/KG   170   U   2100   U   NA     4-Chiorophenyl-phenylether   UG/KG   170   U<	170 .	U	80	U	NA
2-Methylnaphthalene   UG/KG   4300   6600   42.2%     2-Methylphenol   UG/KG   170   U   2100   U   NA     2-Nitroaniline   UG/KG   330   U   11000   U   NA     2-Nitroaniline   UG/KG   170   U   2100   U   NA     2-Nitroaniline   UG/KG   170   U   2100   U   NA     3,3'-Dichlorobenzidine   UG/KG   170   U   2100   U   NA     3,3'-Dichlorobenzidine   UG/KG   330   U   11000   U   NA     4,8-Dinitro-2-methylphenol   UG/KG   330   U   11000   U   NA     4-Bromophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Chloroa-s-methylphenol   UG/KG   170   U   2100   U   NA     4-Chlorophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Chlorophenyl-phenylether   UG/KG	170	U	390	U	<u>,</u> NA
2-Methylphenol   UG/KG   170   U   2100   U   NA     2-Nitroaniline   UG/KG   330   U   11000   U   NA     2-Nitrophenol   UG/KG   170   U   2100   U   NA     3,3'-Dichlorobenzidine   UG/KG   330   U   11000   U   NA     4-Bromophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Chtoroa-smethylphenol   UG/KG   170   U   2100   U   NA     4-Chtoroaniline   UG/KG   170   U   2100   U   NA     4-Chtoroaniline   UG/KG   170   U   2100   U   NA     4-Methylphenol   UG/KG	170	U	80	U	NA
2-Nitroaniline   UG/KG   330   U   11000   U   NA     2-Nitrophenol   UG/KG   170   U   2100   U   NA     3,3'-Dichlorobenzidine   UG/KG   170   U   2100   U   NA     3,3'-Dichlorobenzidine   UG/KG   170   U   2100   U   NA     3,3'-Dichlorobenzidine   UG/KG   170   U   2100   U   NA     3-Nitroaniline   UG/KG   330   U   11000   U   NA     4,8-Dinitro-2-methylphenol   UG/KG   330   U   11000   U   NA     4-Bromophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Chloroaniline   UG/KG   170   U   2100   U   NA     4-Chlorophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Chlorophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Methylphenol	170	U	390	U	NA
2-Nitrophenol   UG/KG   170   U   2100   U   NA     3,3'-Dichlorobenzidine   UG/KG   170   U   2100   U   NA     3.3'-Dichlorobenzidine   UG/KG   170   U   2100   U   NA     3-Nitroaniline   UG/KG   330   U   11000   U   NA     4,8-Dinitro-2-methylphenol   UG/KG   330   U   11000   U   NA     4-Bromophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Chtoro-3-methylphenol   UG/KG   170   U   2100   U   NA     4-Chtoroaniline   UG/KG   170   U   2100   U   NA     4-Chtoroaniline   UG/KG   170   U   2100   U   NA     4-Chtoroaniline   UG/KG   170   U   2100   U   NA     4-Methylphenol   UG/KG   330   U   11000   U   NA     4-Nitroaniline   UG/KG	330	U	2000	U	NA
3,3°-Dichlorobenzidine   UG/KG   170   U   2100   U   NA     3-Nitroaniline   UG/KG   330   U   11000   U   NA     4,8-Dinitro-2-methylphenol   UG/KG   330   U   11000   U   NA     4.8-Dinitro-2-methylphenol   UG/KG   170   U   2100   U   NA     4-Brornophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Chtoro-3-methylphenol   UG/KG   170   U   2100   U   NA     4-Chtoroaniline   UG/KG   170   U   2100   U   NA     4-Chtoroaniline   UG/KG   170   U   2100   U   NA     4-Chtoroaniline   UG/KG   170   U   2100   U   NA     4-Methylphenol   UG/KG   170   U   2100   U   NA     4-Nitroaniline   UG/KG   330   U   11000   U   NA     4-Nitroaniline   UG/KG </td <td>170</td> <td>U</td> <td>390</td> <td>U</td> <td>NA</td>	170	U	390	U	NA
3-Nitroaniline   UG/KG   330   U   11000   U   NA     4,8-Dinitro-2-methylphenol   UG/KG   330   U   11000   U   NA     4-Brornophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Chioro-3-methylphenol   UG/KG   170   U   2100   U   NA     4-Chioro-3-methylphenol   UG/KG   170   U   2100   U   NA     4-Chioro-3-methylphenol   UG/KG   170   U   2100   U   NA     4-Chiorophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Chiorophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Methylphenol   UG/KG   170   U   2100   U   NA     4-Nitroaniline   UG/KG   330   U   11000   U   NA     4-Nitroaniline   UG/KG   330   U   11000   U   NA     Acenaphthene	170	U	390	UJ	NA
4,8-Dinitro-2-methylphenol   UG/KG   330   U   11000   U   NA     4-Bromophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Chloro-3-methylphenol   UG/KG   170   U   2100   U   NA     4-Chloro-3-methylphenol   UG/KG   170   U   2100   U   NA     4-Chloroaniline   UG/KG   170   U   2100   U   NA     4-Chloroaniline   UG/KG   170   U   2100   U   NA     4-Chlorophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Methylphenol   UG/KG   170   U   2100   U   NA     4-Nitroaniline   UG/KG   330   U   11000   U   NA     4-Nitroaniline   UG/KG   330   U   11000   U   NA     Acenaphthene   UG/KG   70   J   430   U   NA	330	U	2000	υ	NA
4-Bromophenyl-phenyleiher   UG/KG   170   U   2100   U   NA     4-Chioro-3-methylphenol   UG/KG   170   U   2100   U   NA     4-Chioro-3-methylphenol   UG/KG   170   U   2100   U   NA     4-Chioro-antiline   UG/KG   170   U   2100   U   NA     4-Chiorophenyl-phenyleither   UG/KG   170   U   2100   U   NA     4-Methylphenol   UG/KG   170   U   2100   U   NA     4-Nitroantiline   UG/KG   170   U   2100   U   NA     4-Nitroantiline   UG/KG   330   U   11000   U   NA     4-Nitroantiline   UG/KG   330   U   11000   U   NA     Acenaphthene   UG/KG   70   J   430   U   NA	330	U	2000	U	NA NA
4-Chioro-3-methylphenol   UG/KG   170   U   2100   U   NA     4-Chioro-aniline   UG/KG   170   U   2100   U   NA     4-Chioroaniline   UG/KG   170   U   2100   U   NA     4-Chiorophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Methylphenol   UG/KG   170   U   2100   U   NA     4-Nitroaniline   UG/KG   330   U   11000   U   NA     4-Nitroaniline   UG/KG   330   U   11000   U   NA     4-Nitroaniline   UG/KG   330   U   11000   U   NA     Acenaphthene   UG/KG   70   J   430   U   NA	170	U	390	U	NA
4-Chtoroaniline   UG/KG   170   U   2100   U   NA     4-Chtorophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Methylphenol   UG/KG   170   U   2100   U   NA     4-Methylphenol   UG/KG   170   U   2100   U   NA     4-Nitroaniline   UG/KG   330   U   11000   U   NA     4-Nitrophenol   UG/KG   330   U   11000   U   NA     Acenaphthene   UG/KG   70   J   430   U   NA	170	, U	390	U	NA
4-Chlorophenyl-phenylether   UG/KG   170   U   2100   U   NA     4-Methylphenol   UG/KG   170   U   2100   U   NA     4-Nitroaniline   UG/KG   330   U   11000   U   NA     4-Nitroaniline   UG/KG   330   U   11000   U   NA     4-Nitrophenol   UG/KG   330   U   11000   U   NA     Acenaphthene   UG/KG   70   J   430   U   NA	170	U	390	U	NA
4-Methylphenol   UG/KG   170   U   2100   U   NA     4-Nitroaniline   UG/KG   330   U   11000   U   NA     4-Nitroaniline   UG/KG   330   U   11000   U   NA     4-Nitrophenol   UG/KG   330   U   11000   U   NA     Acenaphthene   UG/KG   70   J   430   U   NA	170	U	390	U	NA
4-Nitroaniline   UG/KG   330   U   11000   U   NA     4-Nitrophenol   UG/KG   330   U   11000   U   NA     Acenaphthene   UG/KG   70   J   430   U   NA	170	U	390	υ	NA
4-Nitrophenol   UG/KG   330   U   11000   U   NA     Acenaphthene   UG/KG   70   J   430   U   NA	330	U	2000	U	NA
Acenaphthene UG/KG 70 J 430 U NA	330	U	2000	U	NA
	170	υ	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	υ	80	U	NA
Atrazine UG/KG 170 U 2100 UJ NA	170	1 U	390	UJ	NA

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#### Notes

L. Analyte Present. Reported value may be biased low

J Analyte Present. Reported value may not be accurate

or precise.

8 The analyte concerned was also detected in the

laboratory or field blank associated with the sample.

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U Non-detect

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

	144 J	MP45-33		Second and a			MP48-33				
Anatyle	· Units	COM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier.	AGI	Qualifier	RPD
Benzaldehyde	UG/KG .	170	υ	2100	υ	NA	170	υ	390	ບມ	NĄ
Benzo(a)anthracene	UG/KG	170	U	430	υ	NA	170	U,	31 `	J	NA
Benzo(a)pyrene	UG/KG	170	U	430	U	NA	45	J	29	7	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	ſ	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	υ	NA	170	U	390	υ	· 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	υ	NA	170	U	390	U	NA
Butylbenzylphthaiate	UG/KG	170	U	2100	u	NA	170	U	390	UJ	NA
Caprolact	UG/KG	170	U	11000	U	NA	170	U	2000	UJ	NA
Carbazöle	UG/KG	170	υ	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	IJ	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	υ	NA
Di-n-butylphthalate	UG/KG	170	U	2100	U	NA	170	U	390	υ	NA
Di-n-octylphthalate	UG/KG	170	U	2100	U	NA `	170	U,	390	IJ	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	υ	NA
Hexachlorobenzene	UG/KG	170	U	430	U	NA	170	U	<b>, 80</b>	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	IJ	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	IJ	NA
Isophorone	UG/KG	170	U	2100	U	NA .	170	U	390	U	NA
Naphthalene	UG/KG	3500		6600		61 4%	170	υ	<b>80</b> ,	U	NA
Nitrobenzene	UG/KG	170	U	430	υ	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	V	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	ບ	NA	170	υ	80	U	NA
Pyrene	UG/KG	72	J	430	U	NA	33	J	26	J	23 7%

Notes.

L Analyte Present. Reported value may be biased low

J Analyte Present. Reported value may not be accurate

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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

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

		MP/48-57				e de la
Analyte	Units	CDM.	Qualifier	AG	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-chioropropane)	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	V	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>ະ</u> ບ	' 'NA
3,3'-Dichlorobenzidine	UG/KG	170	U	370	UJ '	NA
3-Nitroanitine	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-Chioro-3-methylphenol	UG/KG	170	U	370	U	NA
4-Chloroaniline	UG/KG	170	U	370	υ	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	Ũ	74	U	NA
Atrazine	UG/KG	170	Ū	370	UJ	NA

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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

		MIPA8-57		19-90-91		
Analyse	Units	CDM .	Qualifier	AGI	Qualifier	RPD
Benzaldehyde	UG/KG	170	U	370	IJ	NA
Benzo(a)anthracene	UG/KG	170	U	74	'U	NA
Benzo(a)pyrene	UG/KG	170	U	74	υ	NA
Benzo(b)fluoranthene	UG/KG	170	U	74	UJ	NA
Benzo(G,h,i)perylene	UG/KG	170	U	74	ບ	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	<b>370</b> (	UJ	NA
Caprolact	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	υ	, NA
Di-n-buty/phthalate	UG/KG	170	U	370	U	NA
Di-n-octylphthalate	UG/KG	, 170	υ	370	IJ	_ NA
Fluoranthene	UG/KG	170	U	74	U	INA .
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	Ų	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-dl-n-propyline	UG/KG	170	υ	74	U	NA
N-Nitrosodiphenyline	UG/KG	170	υ	74	U	NA
Pentachlorophenol	UG/KG	330	U	370	IJ	NA
Phenanthrene	UG/KG	170	υ	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 blased 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

# Table 2eTPH DRO Sample ComparisonMain ParcelPrice Battery OU2Hamburg, Pennsylvania

Diesel Range Organics	Parameter	
MG/KG	Units	
ND	CDM	
U	Qualifier	MP8-S
. 67	AGI	7
	Qualifier	
' NA	RPD .	

#### Notes:

U : Non-detect

NA = Not applicable

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### Table 2f PCBs Sample ComparisonMain ParcelPrice Battery OU2Hamburg, 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	4	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	NĄ		NA	33	U	NA		NA
Aroclor-1268	UG/KG	33	U ~	<b>NA</b>	r	_ NA	. 33	U	NA		NA
		MP48C-09	1. A.				MP48D-09				
		CDM	Qualifier	AGI	Outalifier	RRD	CDM	Qualifier	AG	Qualifier	RPD
Aroclor-1016	UG/KG	33	U	ND °		NA	33	U	ŇD		NA
Aroclor-1221	UG/KG	· 33	U,	ŇD		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	υ	ND		NA
Aroclor-1254	UG/KG	' 33	Ù	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

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

		WHI2-09					WHIZ-93				
Metals	Units 🔭 🔎	COM.	Qualifier	AGI	Qualifièr .		CDM -	Qualifier	AGI		RPD
ANTIMONY	MG/KG	15.9	L	48.2		100.8%	. 116	L	271		80.1%
ARSENIC	MG/KG	12.1 -	L	<u> </u>	-	4.0%	44.2	L	· 41.8	, ,	5.6%
LEAD	MG/KG	45100	J.	32000		34.0%	9860	J	12500	,	23.6%
		MH2-57	and the second				WH2-84			and a second	
		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					V#H5-33			Colored and the	
		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	<b>4.9</b>	· 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					WH6-81				
	2	CDM	Qualifier	AGI	Qualifier	RPD.	CDN	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	Ľ	18.5	-	77.2%	9.2	Ľ	9.4		2.2%
LEAD	MG/KG	1780	J	1680		5.8%	454	J	525		14.5%
		SWH7-09					WH7-33				
	No.	CDM	Qualifier	AGI	Qualifier	RPD	COM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	4.2	J	7.9	·	61.2%	-	R	1.1	J	NA
	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

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

	2	WH7-57	and the second				WH12-09				
Metals	Units	COM	Qualifier	AGI	Qualifier	RPD	CDM	Qualifier	AGI	Qualifier	RPO
ANTIMONY	MG/KG	0.46	J	<b>1.1</b> t	Û	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				
	a series and the series of	CDM	Qualifier	AGI	Qualifier.	RPD and	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0.94		Ŏ.21	- J	-127.0%	16.9	4 <b>Ľ</b> –	25.3	J	39.8%
ARSENIC	MG/KG	~ 4.3	Ľ	5.6		26.3%	7.4	L	7.1		4.1%
LEAD	MG/KG	24.2	J	22.6	1	6.8%	4540	· J ·	·2820		46.7%
		WH13-18					WH1333				
	An	CEM	Qualifier	AGI	Qualifier	RPD	COM	Qualifier	AG	Gualifier	RPD
ANTIMONY	MG/KG	1.1	J _	, NA	<u>N</u> A	NA	0.67	J	~ <b>0.19</b>	J	111.6%
ARSENIC	MG/KG	46	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:

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

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

U : Non-detect

NA = Not applicable

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a second and the second second		WH2-33				Sec. 10 marts	ANH7-09				
Anabes	Units	COM ::	Qualifier	AGI	Qualifier	RPD	<b>C</b> BM	Qualifier	AGI	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	υ	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	υ	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-Trichiorobenzene	UG/KG	5	U	NA	NA	NA	5	IJ	NA	NA	NA
1,2,4-Trichlorobenzene	UG/KG	5	U	5	U	NA	16	8	19	U	NA
1,2-Dibromo-3-chloropropane	UG/KG	5	U	5	U	NA	5	IJ	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	В	19	U	NA
1,2-Dichloroethane	UG/KG	5	υ	5	U	NA	5	U	19	U	NA
1,2-Dichloropropane	UG/KG	5	υ	5	U	NA	5	U	19	U	NA
1,3-Dichlorobenzene	UG/KG	5	U	5	U	NA	5	ບງ	19	U	NA
1,4-Dichlorobenzene	UG/KG	5	U	5	U	NA	- 11	B	19	U	NA
1,4-Dioxane	UG/KG		R	5	UJ	NA		R	19	UJ	NA
2-Butanone	UG/KG	4 5	8	5	IJ	NA -	10	U	19	UJ	NA
2-Hexanone	UG/KG	59	B	5	ນ	NA	11	В	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	84	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
Bromodichioromethane	UG/KG	5	U	5	ι 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	ŇA	5	υ	19	U	NA
Carbontetrachloride	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Chlorobenzene	UG/KG	5	υ	5	U	NA	5	UL	, 19	U	NA
Chloroethane	UG/KG	5	u	5	11	NA	5	u	19	u	NA

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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

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

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	and the second second second	* WH2-33					WH7-09-			a la cal	
Analyte	Units	COM	Qualifier	AGI	Qualifier	RPD	COM	Qualifier	. AGI	Qualifier	RPD
Chloroform	UG/KG	5	U	- 5	U	NA	5	U	<sup>2</sup> 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 <u>,</u>	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	LŊ	NA	5	U	19	U	NA
Ethylbenzene	UG/KG	0 63	B	5	U	NA	0 91	B	19	U	NA
Isopropyibenzene	UG/KG	5	U	5	U	NA -	5	U	19	U	NA
m,p-Xylene	UG/KG	0 72	В	NA	NA	NA	12	Βı	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	В	19	U	NA
Styrene	UG/KG	5	U	- 5	U	NA	5	υ	19	U	NA
Tetrachloroethene	UG/KG	5	U	5	U	NA	5	U	19	U	NA
Toluene	UG/KG	- 0 55	В	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	55	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	В	NA	NA	NA '	12	В	NA ~	NA	NA

Notes.

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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

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

		WHATS-18		Wh2-33		Sec. 2	Sec. 1		WH7-09 2				
Analyte	Unite	CDM only	Qualifier	COM	Coalifier	AG	Qualifier	RPD ·	CDM	<ul> <li>Qualifier</li> </ul>	AGI	Qualifier	RPD
1,1'-Biphenyi	UG/KG	<sup>•</sup> 170	U	170	U	1900	U	NA	170	U	<b>340</b>	Ù	NA
1,2,4,5-Tetrachlorobenzene	UG/KG	170	- U	170	U	NA	NA	NA	170	<u> </u>	NA	NA	NA
2,2'-Oxybis(1-chloropropane)	UG/KG	170 5	U-	170	U	380	U	NA	170 -	U	69	U	NA
2,3,4,6-Tetrachiorophenol	UG/KG	170	U	170	U	<sup>-</sup> NA	NA	NA	170	U	NA	NA	NA
2,4,5-Trichlorophenol	UG/KG	170	U	170	U	1900	U	NA	170	Ú	340	U	NA
2,4,6-Trichlorophenol	- UG/KG	170	U	170	U	1900	υ	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	υ	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	υ	1900	U	NA	170	U	340	U	NA
3-Nitroaniline	UG/KG	330	U	330	υ	9500	U	NA	330	U	1800	U <sup>~</sup>	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	υ	NA
4-Chloroaniline	UG/KG	170	U	170	U	1900	U	NA	170	U	340	U	NA
4-Chiorophenyi-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	L 340	U	NA
4-Nitroaniline	UG/KG	330	- U	330	U	9500	U	NA	330	υ	1800	U	NA
4-Nitrophenol	UG/KG	330	U	330	U	9500	U	NA	330	Ū	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

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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

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	1	WH13-18		WH2-33		- 149 er 1	200		WH7-09		ан — — — — — — — — — — — — — — — — — — —		
Analyte	Units	COM only	Qualifier	COM	Qualifier	AGI	Qualifier	RPD	COM	Qualifier	AGL	Qualifier	RPD
Benzaldehyde	UG/KG -	170	U	<u></u> 170	U	1900 -	υ	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	ļ 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/ĶG	170	U	170	U	1900	U	NA	170	U	340	U	NA
Bis(2-Chloroethyl)ether	UG/KG	170 ,	U	170	U	380	υ	NA	170	U	69	U	NA
Bis(2-ethylhexyl)phthalate	UG/KG	23	В	190	В	170	J	NA	31	В	340	U	NA
Butylbenzylphthalate	UG/KG	170	U	170	U	1900	U	- <b>NA</b>	170	U	340	U	NA
Caprolact	UG/KG	170	U	170	[ U	9500	U	NA	170	υ	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	<sup>~</sup> 170	υ	340	U	NA
Diethyiphthalate	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> </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
Hexachioroethane	UG/KG	170	U	170	υ	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	υ	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	Ų.	1900	U	NA -	330	U	340	U	NA
Phenanthrene	UG/KG	210	J	140	J	460		106 7%	40	J	480		169 2%
Phenoi	UG/KG	170	U	170	U U	380	U	NA	170	U	69	U	NA
Pyrene	UG/KG	430	1	330	J	470	[	35.0%	120	J	750		144 8%

Notes<sup>.</sup>

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.

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U · Non-detect

NA = Not applicable

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

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		BW/8-9				
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	ຸບJ	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	, <b>6.3</b>	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	ŃA
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	UĻ	NA	NA <sup>-</sup>	NA
2-Butanone	UG/KG	10	ŲL	6.3	Ĵ	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	В	25	U	NA
Benzene	UG/KG	5	UÌ	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

### Table 4c VOCs Sample ComparisonBroom WorksPrice Battery OU2Hamburg, Pennsylvania

		BW8-9				
Analyte	Units	CDM	Qualifier.	AGI	Qualifier :	RPD
Chloromethane	UG/KG	5	UL	6.3	Û,	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	υ	NA
Methylenechloride	UG/KG	0.81	В	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	В	6.3	U	NA
Toluene	UG/KG	0.55	J	6.3	U	NA
trans-1,2-Dichloroethene	UG/KG <sup>·</sup>	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
Vinyichloride	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

### Table 4d SVOCs Sample ComparisonBroom WorksPrice Battery OU2Hamburg, Pennsylvania

		BW8-9		1		
Analyte	Units	CDM		AGI		RPD
1,1'-Biphenyi	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	<b>390</b> ,	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	1 . U	NA
2,4-Dinitrotoluene	UG/KG	170	U	390	U	NA
2,6-Dinitrotoluene	UG/KG	170	U	390	U	NA
2-Chioronaphthalene	UG/KG	170	U	79	U	NA
2-Chlorophenol	UG/KG	170	U	390	U	NĂ
2-Methylnaphthalene	UG/KG	<b>110</b> (	J	120		8.7%
2-Methylphenöl	UG/KG	170	U	390	U	NA
2-Nitroaniline	UG/KG	330	U	2000	υ	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-Chioro-3-methylphenol	UG/KG	170	υ	390	U	NA
4-Chloroaniline	UG/KG	170	IJ	390	U	NA
4-Chiorophenyl-phenylether	UG/KG	170	U	390	U	NA
4-Methyiphenol	UG/KG	170	U	390	U	NA
4-Nitroaniline	UG/KG	330	U	2000	υ	NA
4-Nitrophenol	UG/KG	330	U	2000	υ	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	υ	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<sup>.</sup> 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 ComparisonBroom WorksPrice Battery OU2Hamburg, Pennsylvania

		BW/8-9				
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	UĢ/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	υ	NA
Bis(2-ethylhexyl)phthalate	UG/KG	<sup>,</sup> 170	υ	260	J	NA
Butylbenzylphthalate	UG/KG	170	U	3,90	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	υ	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	ł	390	U	NA
Hexachloroethane	UG/KG	170	υ	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	<sup>•</sup> 79	U	NA
Pentachlorophenol	UG/KG	330	U	390	<sup>,</sup> 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.

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U: Non-detect

### Table 5a Selected Metals Sample ComparisonParking LotPrice BatteryHamburg, Pennsylvania

		PL3-24				
Metals	Units	COM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/ĶG	2.5	J	<b>1.7</b> <sup>°</sup>	J	38.1%
ARSENIC	MG/KG	67.7		80.2		16.9%
LEAD	MG/KG	42.4	J	44.6		5.1%
	a shirt	PL3-33-			Sec.	
Metals	Units	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	<b>2.6</b>	J	1.7	J	41.9%
ARSENIC	MG/KG	105		93.4		11.7%
LEAD	MG/KG	26.3	* J	26.9	1	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

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# Table 5b Total Metals Sample ComparisonParking LotPrice BatteryHamburg, Pennsylvania

		PL3-9				1. A.
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 <sup>-</sup>	J	69.4%
COBALT	MG/KG	5.3	J	9.3		54.8%
COPPER	MG/KG	57.8	J	43.7	3	27.8 <u></u> %
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	<sup>,</sup> 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

### Table 5c VOCs Sample ComparisonParking LotPrice Battery OU2Hamburg, Pennsylvania

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		PL3-9				
Analyte	Units	ĊŌM	Qualifier	AGI 🛸	Qualifier	RPD
1,1,1-Trichloroethane	UG/KG	5	UL	5	U	NA
1,1,2,2-Tetrachloroethane	ÚG/KĢ	<sup>′</sup> 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	ŲL	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	<sup>5</sup>	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	ÙG/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

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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

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# Table 5c VOCs Sample ComparisonParking LotPrice Battery OU2Hamburg, Pennsylvania

A State of the second second		PL3-9				
Analyle	Units	сри 🗧	Qualifier	AGI	Quelifier	RPD
Chloroform	UĢ/KG	-5	ŲL	<sup>,</sup> 5	U	NA
Chloromethane	UG/KG	5	UL	5	- U	NA
cis-1,2-Dichloroethene	UG/KG	5	ÚL	5	U	NA
cis-1,3-Dichloropropene	UG/KG	5	UĻ	· 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	υ	NA
Methylcyclohexane	UG/KG	5	UL	5	U	ŇA
Methylenechloride	UG/KG	5	UL	5 ,	U	<sup>,</sup> NA
Methyltert-butylether	UG/KG	5	UL	5	U	ŇA
o-Xylene	UG/KG	5	UL	NA	NA	NA
Styrene	UG/KG	5	, UL	1.7	J	NA
Tetrachloroethene	UG/KG	9.7	Β,	5	U	NA
Toluene	UG/KG	5	UL	5	U	NA
trans-1,2-Dichloroethene	UG/KG	5	UL <sup>y</sup>	· 5	U	NA
trans-1,3-Dichloropropene	UG/KG	5	UL	5	U	NA
Trichloroethene	UG/KG	5	UL	, <b>5</b> '	U	NA
Trichlorofluoromethane	UG/KG	5	UL	5	υ	NA
Vinyichloride	UG/KG	5	UL	: '5	υ	NA
m,p-Xylene	UG/KG	5	UL	,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

### Table 5d SVOCs Sample ComparisonParking LotPrice Battery OU2Hamburg, 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	NÃ
2,4,5-Trichlorophenol	UG/KG	170	U	370	U	NA
2,4,6-Trichlorophenol	UG/KG	170	υ	370	U	NA
2,4-Dichlorophenol	UG/KG	170	U	75	U	NĂ
2,4-Dimethylphenol	UG/KG	170	J- U	370	υ	NÀ
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	1,70	' U	370	U	NA
2-Chloronaphthalene	UG/KG	170	U	<sup>•</sup> 75	U	NA
2-Chlorophenol	UG/KG	170	U,	370	U	NA
2-Methylnaphthalene	UG/KG	170	U	110		ŃA
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	υ	• NA
4-Bromophenyl-phenylether	UG/KG	· 170	U	370	υ	NA
4-Chloro-3-methylphenol	UG/KG	170	U	<b>.</b> 370	υ	NA
4-Chloroaniline	UG/KG	°170	U	370	U	NA
4-Chlorophenyl-phenylether	UG/KG	170	, U	<sup>,</sup> 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	۰U	360		NA
Acenaphthylene	UG/KG	170	U	130	1	NA
Acetophenone	UG/KG	170	U	370	U	NA
Anthracene	UG/KG	21	J	1100		192.5%
A		***		***************************************		

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

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#### 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	<sup>,</sup> U	1900	U	NĄ
Carbazole	UG/KG	170	U	510		NA
Chrysene	UG/KG	100 <sup>,</sup>	, J	2200		182.6%
Dibenzo(a,h)anthracene	UG/KG	170	U	420	7	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/KĢ	170	U	470	r	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%

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#### 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

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### Table 6a Dissolved Metals Sample ComparisonMain Parcel Groundwater Sample ResultsPrice Battery OU2Hamburg, 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 <sup>-</sup>	4	U	NA
CADMIUM	UG/L	0.093	В	5	U	NA
CALCIUM	UG/L	25900		25000		3.5%
CHROMIUM	UG/L	10	U	5	U	NA
COBÂLT	UG/L	1.2	В	1.1	J	NA
COPPER	UG/L	0.86	Ĵ	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%
ŞELENIUM	UG/Ĺ	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	ĴŪ - Z	50	U	NA
ZINC	UG/L	5.2	J	20	U	NA

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Notes:

L: Analyte Present. Reported value may be blased 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

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# Table 6b VOCs Sample ComparisonMain Parcel Groundwater Sample ResultsPrice Battery OU2Hamburg, Pennsylvania

		MW3				
Analyter	Units	CDM	Qualifier	AGI	Qualifier	RPD
1,1,1-Trichloroethane	UG/L	0.5	υ	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	Ú	NA
1,2-Dibromo-3-chloropropane	UG/L	0.5	U	5	UJ	NA
1,2-Dibromoethane	UG/L	0.5	Ų	5	U,	NA
1,2-Dichlorobenzene	ÜG/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	, ÚG/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	В	20	U	NA
Benzene	UG/L	0.5	υ	5	U	NA
Bromochloromethane	UG/L	Ŏ.5	υ	NA	NA	NA
Bromodichloromethane	UG/L	0.5	υ	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	В	5	UJ	NA
Carbontetrachloride	UG/L	0.5	U	5	U	NA
Chlorobenzene	UG/Ľ	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

### Table 6b VOCs Sample ComparisonMain Parcel Groundwater Sample ResultsPrice Battery OU2Hamburg, Pennsylvania

		MWB				
Analyte	Units	GDM	Qualifier	AGI	Qualifier	RPD
Chloroform	UG/L	0.096	В	. 5	υ	NA
Chloromethane	UG/L	0.28	В	5	Ŭ	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	<sup>ل</sup> ان ک	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	Ú	, NA
Methylcyclohexane	UGAL	0.5	U	5	U	NA
Methylenechloride	UG/L	0.5	∖ U	5	U	NA
Methyltert-butylether	UG/L	0.5	U	5	U	NĂ
o-Xylene	UG/L	0.5	U	NĄ	NÅ	NA
Styrene	UG/L	0.5	U	- 5	U	NA
Tetrachioroethene	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 ,	<b>NA</b>	15	U	NA

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#### Notes:

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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

### Table 6c SVOCs Sample ComparisonMain Parcel Groundwater Sample ResultsPrice Battery OU2Hamburg, Pennsylvania

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		MWB				
Analyte	Units	CDM	Qulaifier	AGL	Qualifier	RPD
1,1'-Biphenyl	UĜ/L	5	U	9. <u>9</u>	U	NA
1,2,4,5-Tetrachiorobenzene	UG/L	5	U	NA	NA	NA
2,2'-Oxybis(1-chloropropane)	UG/L	5	U	2	U <sup>,</sup>	NA
2,3,4,6-Tetrachlorophenol	UG/L	5	U	NA	NA	NA
2,4,5-Trichlorophenol	UG/L	5	U	99	U	NA
2,4,6-Trichlorophenol	UG/L	5	U	99	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	99	<sup>,</sup> U	NA
2,6-Dinitrotoluene	UG/L	5	U	99	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	υ	NA
2-Methylphenol	UG/L	5	U	99	U	NA
2-Nitroaniline	UG/L	10	U	50	U	NA
2-Nitrophenol	UG/L	5	U	99	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	99	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-Chiorophenyl-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	NÅ
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	υ	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 ComparisonMain Parcel Groundwater Sample ResultsPrice Battery OU2Hamburg, Pennsylvania

		MW3				
Analyte	Units	CDM	Qulaifier	AGI	Qualifier	RPD
Benzaldehyde	UĢ/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	99	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	99	U	NA
Caprolactam	UG/L	5	U	50	υ	ŅA
Carbazole	UG/L	5	U	<u>'</u> 2	U	NA
Chrysene	UG/L	5	U	2	U	NA
Dibenzo(a,h)anthracene	UG/L	5	U	2	U	<sup>~</sup> NA
Dibenzofuran	UG/L	5	U	9.9	U	NA
Diethylphthalate	UG/L	5	U	9.9	U	NA
Dimethylphthalate	UG/L	5	U	99	U	NA
Di-n-butylphthalate	UG/L	5	U	9.9	U	NA
Di-n-octyiphthalate	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	υ	9.9	U	NA
Hexachloroethane	UG/L	5	υ	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	99	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

### Table 6d PCBs Sample ComparisonMain Parcel Groundwater Sample ResultsPrice Battery OU2Hamburg, Pennsylvania

		MW3				
Analyte	Result	CDM	Qualifier	AGI	Qualifier	RPD
Aroclor-1016	UG/L	1	U	0.39	υ	NA .
Aroclor-1221	UG/L	1,	U	0.39	U	, <b>NA</b>
Aroclor-1232	, UG/L	1	U	0.39	U	NA
Aroclor-1242	UG/L	1	U	0.39	U	NA
Arocior-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
Arocior-1268	UG/L		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

# Table 7 Selected Metals Sample ComparisonKaercher Creek Sediment SamplesPrice Battery OU2Hamburg, Pennsylvania

an the second			KC-S	ED2		
Metats	Units	CDM	Qualifier	AGI	Qualifier	RPD
ANTIMONY	MG/KG	0.7	J	<b>63</b> ,	J	195.6%
ARSENIC	MG/KG	1.7	1	10.6		144.7%
LEAD	MG/KG	200		1150		140.7%

#### Notes:

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

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CDM

#### Figures

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Berks County, Hamburg, PA

Figure 2-1 Site Location Map AR302697



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

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GABION MATTRESS PROPERTY LINE OF EXIDE OWNED PROPERTIES	SITE LAYOUT	(PRIOR TO MAIN PARCEL DEMOLITION)	PROJECT MANAGER: P.G.S. SCALE: 130'	URECKEU DI. T.G.S. FROMEUR NUMBER. 2002-310	DRAWN BY: CEP DATE: 12/5/07
INFORMATION OBTAINED FROM THE "PLOT RAWING No.22-SLI-94-D, DATED JUNE 5, OVIDED BY EXIDE TECHNOLOGIES.	ADWANCED		Engineering for the Environment. Planning for People.	1055 ANDREW DRIVE, SUITE A, WEST CHESTER PA, 18380 tel 610.840.9100 fax 610.840.9199 www.edwoncedgeoservices.com	
NAMES OBTAINED FROM "STORM WATER "DRAWING NO. 22-SLI-18FD DATED JULY PROVIDED BY EXIDE TECHNOLOGIES. 0 130 260	JRMER PRICE BATTERY SITE		Hamburg, Pennsylvania		
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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 #:37633 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# 101**3**6

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#### OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

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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<sup>AM</sup> Senior Oversight Chemist

TO: Khin-Cho Thaung ESAT Region 3 Project Officer

#### <u>OVERVIEW</u>

Case 37823, Sample Delivery Group (SDG) C8222, consisted of one (1) aqueous sample submitted to Shealy Environmental 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 gammachlordane 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.

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

<u>Fraction</u> Pesticide	Blank Method (PBLK 84)	Compound beta-BHC	Concentration 0.086 J ug/L	Affected Sample C8222
	(I DEROF)	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.

	:	$\frac{\text{Concentration } (\mu g/L)}{\mu g/L}$						
Compound	<u>C8222</u>	<u>C8222MS</u>	<u>C8222MSD</u>	<u>RPD</u>				
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

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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: Trace Volatiles

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

Number of Soil Samples : 0

Number of Water Samples : 1

Sample Number :		C8222	******		and the second				9757. National and		
Sampling Location :		MW3	÷ ،								•
Matrix :		Water									
Units :		ug/L									
Date Sampled :		9/30/2008									
Time Sampled :		14:20									
pH:		< 2									
Dilution Factor :	-	1.0					-			Kasi 17 Jenistan di sedara	
Trace Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	0,50%		行影响						de la compañía de la Compañía de la compañía	S. E. H. W. C. M.	202
Chloromethane	0.50	0.28	B	19.09.000 (A. 19.000)	19. 19. 19. 19. 19. 19. 19. 19. 19. 19.				tin autor	anter a statem	66-22V
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3,1,2-1 IIChloro-1,2,2-thluordethane	0.50										1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
Corbon Digulido	#2632832 0 50	0.26	<i>湯洗</i> 袋	SALAN AN A	RESAR		103S	a sente kons		46730 SH \$7091	898.24
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	( <b>6 80</b> )	r koran	T	ed and		N S IN ANALASA In Mill Alasa			ter (CA) A CAS		17 1 K 2 K C
Methyl tert-butyl ether	0.50	alt. David Rith Barts Allian oct.	sister <b>1</b> .3€1		r 45-581	ne s fri Kurteny	21822 2	9192 (999), - N. 1844 ( 3	/%X 5.14 %	gaaren en en beserren. Geboren	e (menter)
1.1-Dichlorcethane	0.50	0.59	<u> </u>	ster i sta	S. M.		۰. کړ ا د ا		灌松	$\mathfrak{h}$	
cis-1.2-Dichloroethene	0.50	AND CALLS TO DO AN A CONSTRUCTION	17 AN 18	e sa wina na ma	1.044.04.0444		10. AC	a n'ny faritr'i Carlon a Maria ana ang a	W67 7 8.	ana nan an an an	···· • • ··
2-Butanone	6.60	215					8405	5H288	<b>滚</b> 滚	<b>各的</b> 最后,	\$\$.\$
Bromochloromethane	0.50	and the solution of the solution of	44 4 <b>6</b> 6 6 7 7								
Chloroform	0.50	0.096	В.,								
*1,1,1-Trichloroethane	0.50										
Cyclohexane	10.50										
*Carbon tetrachloride	0.50		2-0-01/0	1745-141-1415-1516-1516-1516-1516-1516-151	-	1994. There is a strategy of the state	7.4084370	454 (MAS & OPA #24071	D.NO.1. BY		
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*1,2-Dichloroethane	0.50	atalanda muhami ti sumu utan	113.218	1	12,455(5655)	in an	an a	1181270640.42004193680	80583803-	99899-1886-1986-1987	
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*1:2-Dichloropropane	0.50		198399		30 A	Maria		2017031405			1898
Bromodichloromethane	0.50	NATIONAL STREET	61923X2		8496393	MARKA AND AND AND AND AND AND AND AND AND AN	n easairte	ar an a' an	162.00M	<u> 1995 - San San San</u> tan	Mora
cis-1,3-Dichloropropene	7 0,50 S		1ZA		SE S					NET KLEN	
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#### DATA SUMMARY FORM: Trace Volatiles

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

Sample Number :	r.	C8222									
Sampling Location :		MW3									
Matrix :		Water									- s [
Units :		ug/L									
Date Sampled :		9/30/2008			ļ						
Time Sampled :	14 1	14:20				, vi					
pH:		< 2									
Dilution Factor :	0.5.01	1.0	_								
Trace Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
*Tetrachloroethene	0.50			er an stat	2055	NG NV MARIN			<b>REAL</b>		92.8E
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1,2-Dibrompetnane	20.50	87574C918					影響				教育教 法公式
*Chlorobenzene	0.50	- 1167-2017 N 1 + 45-26 (842)-4437	NON L A.	1. 1		Andres a sub-server serve	Barra a Maria	1928 - 1929 - 1926 - 1926 - 1926 - 1927		GUADSTATE (STR	
*Ethylbenzene	0,50										
o-Xylene	0.50	CELUTION LORONS	472Y11	BAAAAAAABAAA	annen)	BARREN CONTRACT	25. 323	an a	5.0°243	terset the carries	<b>2.3</b> 2 (2.20)
m,p-Xylene	0,50		2833				R SS				調整
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Isopropyidenzene	0.50		<b>3</b> 27								P.S
*1.3-Dichlorobenzene	0.50		1016 May 23	alan kanyadapatén kanadara	p.91.52690	ith the second filmers which the	135247079.0	lan and the constant	1889 9 WALL	\$9.4 <b>9.1</b> 03838665464943	184, 189.1
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To calculate sample quantitation limits: (C	RQL * D	ilution Factor)			,		~ 14/11			Revised	09/99

To calculate sample quantitation limits: (CRQL \* Dilution Factor)

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#### DATA SUMMARY FORM: BNA

Case #: 37823
Site :
Lab. :

Number of Soil Samples: 0

Number of Water Samples: 0

Cample Number		00000						r			
Sample Number .		10222 MM/3									
Matrix :		Water		٢							
Units :		ua/L									
Date Sampled :		9/30/2008					•				1
Time Sampled :	н.	14:20								•	
Dilution Factor :		1.0									
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzeldehyde	© <b>∵6</b> 0∕∞	建立教育医学教			16. OK					2219 <b>2</b> 623	
Phenol	5.0	NER STATE STATE	2742832	NATONE COMPANY	3343-34791	THE PERSON IS	6353/50	aranzan karatar	Next and	S. S	MEEMI
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2.2-Ovybie(1-chloropropage)	50		942¥	ALEX SOLUTION	和的人類		88.932 1				SWALL
Acetophenone											
4-Methylphenol	5.0	กระการสำนักงานสมัยสล	6000000	Sectors and the sector	(Actos)	RESERVE AND A WITH	s anosaa	RELATION COPPOSED	6884 6-841	en -	békawa
N-Nitrosc-di-n-propylamine	842 <b>5,0</b> 03		3.K		設議		58.88			MANERA I.	1845A
Hexachloroethane Nitropenzene	5.0 5.0				(NR)			9998/7/C			
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2-Nitrophenol	於他的》					派派结察	ЩЩ.			///XXX	
2,4-Dimethylphenol	5,0	NESSAR STOLENESS	areasta ta	tasan ing ana é	45.992.792	\$\$\$\$\$\$\$\$\$\$	37. SHAVA	NANUNTA BASING	854.74S	an a	1990 B. 100
Bis(2-Chloroethoxy)methane	4×-25,0 g	影响这个影响。			德语	SI SCHOOL	96 A S	國際的主張的			
2,4-Dichlorophenol	5.0	an the state of the second	10 MAR		8578	SING MARKE	SELST.	835933335743	1132 BA	THE CONTRACTOR	a an
	SK 0.0.		309 1	2010 (A) (C) (2010) (A) (A) (C) (2010) (A) (A) (C) (A) (A) (A) (A) (A) (A) (A) (A) (A) (A	L EL	BARAR B	89.883 19		R.R.	ar raid	
4-Chlorodnillne Hexachlorodutadiene	5.0										17. 19. julije
Caprolactam	5.0				())	เขตระ ครสาร สาร	A SECOND	UNPERADA - PERSONA		New York, and the second second second	4.2000 CIV.V
dichloro-simethylphenol								de la carat	數透		
2-Methylnaphthalene	5.0	STANDAU TANA CINA	9808897	AND AND AND AND	n Warint		Marina	NESPT-WARMAN	833-8335		-
/Hexachlorocyclopentacione			28 S.S.	RELET	ae s	R ECER	预测。		\$. A.		建藏
2,4,6-1 richlorophenol 2,4,6-Trichlorophenol	5.0 5.0				NG C						
1,1'-Biphenyl	5.0										
2-Chlotoriaphthalene	QX 5.0										
2-Nitroaniline	10	oran taking manageri taking	1. Carlot and the	107723373002205365	Maderica	AND DO BAOMOR 2005.		STREET & PROPERTY AND	1999 AN 189 A	AND AND AND AND AND AND	Second.
Dimethylphthalate	5.0		Щ. Дай								题的
2,6-Dinitrotoluene	5.0		<u> 1</u>		3553		<i>法</i> 教练		\$9.5Q	NK KADAR	ar an
Acenaphinylene	273- <b>5:U</b> Z	NATION PARTY		和限定为许	N. CO	的时候使	27 - W			8 N C C	90492 1
Acenaphthene	50 50	Section &								1777 av 1995 Laske der klasse klasse	

#### DATA SUMMARY FORM: BNA

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Case #: 37823	
Site :	
Lab. :	

SDG : C8222 PRICE BATTERY SHEALY

Sample Number :		C8222									
Sampling Location :		MW3		\$							
Matrix :		Water					. ]				
Units :		ug/L									
Date Sampled :		9/30/2008									
Time Sampled :		14:20						19 - 19 - 19 - 19 - 19 - 19 - 19 - 19 -			
Dilution Factor :	0.000	1.0									
Semivolatile Compound	CRQL	Result	Flag	Result	⊦lag	Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol 4-Nitrophenol	10 10					<b>MELINA</b> IS	<u>ski</u>				
Dibenzofuran 2 A-Dinirrotoluene	5.0 100			<b>D</b> NG KR				<u> ENERE</u>			
Diethylphthalate Fluorene	5.0 (5)0	n 26019	ŦM			MARIZA		r (szerni			
4-Chlorophenyl-phenylether A-Nitroaniline	5.0 40	R. Katapat									
4,6-Dinitro-2-methylphenol	10 50										
1,2,4,5-Tetrachlorobenzene 4-Bromophenyl-phenylether	5.0 										
*Hexachlorobenzene Afrazina	5.0 50				<b>(</b> 34)					NFR CA	
*Pentachlorophenol Pherianintene	10 				\$22. A	REE &	T.S.				
Anthracene Cercazole	5.0 8 0 1										
Di-n-butylphthalate Fluoranthene	5.0 50										
Pyrene Bulylbenzylphthalaten	5.0								<i>X</i> M		
3,3-Dichlorobenzidine Benzo(8)anthracene	5.0 ///50		Ŷ		<u> I</u>						Ϣ
Chrysene Bis(2 <sup>2</sup> ethy(hexy))phthalate	5.0 8.0							2019534	ŧ.		1920)
Di-n-octylphthalate (Benzo(b)fluorarithene	5.0	ALLON MARKAN									<u>B</u> R
Benzo(k)nuoraninene Benzo(a)pyrene	5.U 60						<u>zw</u>				<u>S</u> R
ndeno(1,2,3-cd)pyrene Dibenzo(a,h)anthracene	5.0 5.0	MEN A 12		<b>FR</b> IER	ġĸ.M					R CAR	۶Ż
Benzo(g,n,i)perviene 2,3,4,6-Tetrachlorophenol CRQL = Contract Required Quantita	5.0 8.0 atlon Limit		*Actio	on Level Ex	ists	SEE	NAR	RATIVE FO	R CO	DE DEFINIT	ions

To calculate sample quantitation limits: (CRQL \* Dilution Factor)

Revised 09/99

#### DATA SUMMARY FORM: Pesticides

×.

Case #:	37823
Site :	
Lab. :	

SDG : C8222 PRICE BATTERY SHEALY

Number of Soil Samples: 0

Number of Water Samples: 0

Sample Number :		C8222					·				6
Sampling Location :		MW3		, :							
Matrix :		Water			•						
Units :		ug/L		н. 1							
Date Sampled :		9/30/2008									
Time Sampled :		14:20									
Dilution Factor :		1.0		1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -							
Pesticide Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
alpha-BHO way to a full with	0.050				<u>kaj</u> z			N. K. A. S. S. S.			£166
beta-BHC	0.050	0.019	В	a séri vandéne servenia intérne	and a strategy	NETWOINDO AND ALL D	-	NA MARKANI A DESIGNATION	37-40-004	ana ana amin'ny farana amin'ny farana	
delta-BHC	0.050				ear s		£.		¥.3.		調約
*gamma-BHC (Lindane)	0.050	radiation and the state		The subscreen and the second	0.14.0 A.A.	HDDATE AN ACCORD		化化化物 化化物化化物化物	net in com	atur eratiko bar 4000'az 6	5795.1000
Heptechlor	0,050	0.13	B			<b>的问题之</b> 识			傳教		影谱
Aldrin	0.050	1	NSE 1. (989)	andra da tada da ancara a cara a da ar	وبالتربية والمع	and a state of the s		N. M. C. 45-725-744	Ú3000 6-31	aa a seesa waxaa dhada dhada	T.C. 003/17.
Heptachior epoxide	0.050	1.311年4月38					10.4			的建设的	20)
Endosulfan I	0.050	new sea : 1605, 4808, 9609, 100	10000000	ener mannan stariae daarache d.C	tura subsection	Maratan di Jakin di Libbia	жала мен	NS012-#312262-48822	14059-385	and a second second second second	155(1)/89/
Dieldrin	0.10	ALL STREET	續從		18.H.L			S. 19. 19. 19. 19. 19. 19. 19. 19. 19. 19	San de		
4,4'-DDE	0.10	and all the second of the Poiston	122943415756	CARGERS D THEORY AND A	344778235	THE PROPERTY OF THE PROPERTY OF	17705-1473		52.30201.DN85	AND DESCRIPTION OF A DE	
*Endrin	2.00.101			<b>DESERVES</b>							
Endosulfan II	0,10	ve savera e a succession.	and the second	nar narstninger ander darktede	1892-976-72	14-00-140000000000000000000000000000000	43553697	NET WARDEN DATE:	an a	STATISTICS	ndelstar
4,4/DDU	APROMONI	同時建發的		和自己的新闻。	的重要		×.8				<b>派</b> 派
Endosulfan sulfate	0.10	an ar an	R	283927-2325620000000000000000	201, SADA 310.	แต่น 2008ส์คา 5.54	trace	ang pangangan palampa	287.5	an si seri della inte	NUMBER OF
AAADDT.	<b></b>		de la	SPACAR PAR	99.69 1995			299 B. B. B.	5303	的之体比率	<b>8</b> . sk
*Methoxychlor	0.50	renta adota - Albora	-916-81-42	server - mar verstaat v	1.16 68	989299993-2-25571945	18 1983.	หอดจำสาวรา	Production	an waar ta san sa	3 <b>69</b> 525
Endrin ketone	N 0 10 2				建设						
Endrin aldehyde	0.10	an a		THE PARTY NON A DEPARTMENT	-	142722408341625259936	2012-01	MANOCOMPER	541.BX	ひまんりょうごうわ てんわつりつ	RIFEREN
alpha-Chlordane	0.050	XXX				Section 20					
gamma-Chlordane	0.050	0.034	В	1928-12226-1222-1222	SAKUPANS	AND THE CONTRACTOR	850.5 X445	ane worther	1944 (S. 16)	una marganetra an	1961.0007
*Toxaphene	5.0			al market at	ANO A						
CRQL = Contract Required Qua	antitation L	mit	*Action	on Level Exists	5	SE	E NA	RRATIVE FO	OR CO	DDE DEFINIT	ONS
To calculate sample quantitatio	n limits: (C	RQL * Dilution	Facto	or)						Revised (	09/99

To calculate sample quantitation limits: (CRQL \* Dilution Factor)

AR302719

#### DATA SUMMARY FORM: Aroclor

Case #: 37823 Site : Lab. :	SDG : C PRICE   SHEAL	08222 BATTERY Y						Number Number of	of So Wate	il Samples : er Samples :	0 0
Sample Number :		C8222 -					Formation of				1
Sampling Location :		MW3		, <sup>1</sup> .							
Matrix :		Water	1								
Units :		ug/L									
Date Sampled :		9/30/2008			1						
Time Sampled :	1	14:20									
Dilution Factor :		1.0								,	
Aroclor Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aroclor-1016	<u></u>										
*Aroclor-1221 Micclor-1282	1.0 • 1.0										
*Aroclor-1242 *Aroclor-1248	1.0 1,0										873) 873
*Aroclor-1254	1.0										

Arocior-1260 復長 派行 ( \$ 11 S.M 是中華6年6月1日 1944 614 11/2 \*Aroclor-1262 1.0 Arcclot-1268 () (12 %) 21.0% ALL AND ROLL 

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

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

-**\$**\$

AR302720

### Appendix C

### Chain-of-Custody Records

€EP4	USEPA C Organic	ontra Traffi	ict Laboratory ic Report & Ch	Program ain of Cus	tody Reco	rd		· ·	Case DAS N	No:	37823		R
Region: Project Code: Account Code:	3 CT4356			Date Shipped: Carrier Name:	: 10/1/2008 : FedEx 7927 6079 769 Shealy Environ 106 Vantage P	1/2008 IEx		uished By	Record	Time)	Sampler Signature: Received By	(Date / T	Time)
CERCLIS ID: Spill ID:	PAN000305 AE2	679		Shipped to:		en nmental Point Drive	1	······································				•	
Site Name/State Project Leader: Action: Sampling Co:	<ul> <li>37823 - Pric</li> <li>Lucinda Pyr</li> <li>Combined F</li> <li>CDM</li> </ul>	xe Battery be RI/FS	y ou2 - 092008/PA		(803) 791-9700		3	<u></u>					
ORGANIC SAMPLE No.	MATRIX SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG PRESERVAT	No.J IVE/ Bottles	STATION LOCATION		SAMPLE DAT	ECOLLECT ENTME	INOF SAM	RGANIC PLE No.	QC Type	<del>البريدة بيريدة بر</del> يد
C8222	Ground Water/ David Michailof	IJG	BNA (14), PEST (14), VOA (14)	005-417 (loe O (loe Oniy), 005- Only); 005-420 005-421 (loe O (loe Oniy), 005- Only), 005-424 005-425 (HCL) (HCL), 005-427	nly), 005-418 419 (Ice (Ice Only), nly), 005-422 423 (Ice (Ice Only), , 005-426 ' (HCL) (11)	MW3 -	••.	S: 9/30/2008	14:20	# <u>2====</u> 0#3= <u>+</u>	۵۵۹ <u>م</u> رمیدا (۱۹۵۵) 	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 Semivo	latiles, PEST = CLP TCL Pesticide/PCBs, VOA = CLP TCL	Volatiles	· · · · · · · · · · · · · · · · · · ·		
TR Number:	3-594095470-100108-0001		REGION COPY		

### TR Number: 3-594095470-100108-0001 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 AR302722

### U.S. EPA Region III Analytical Request Form Revision 10.06

$ \mathcal{H}  \geq$	4-2-07	8
	ASQAB U	SE ONLY
<b>RAS#</b>	CT4356	Analytical TAT
DAS#		7/11
NSE#		17

37.8	23					·					
Date: 25 August 200	Date: 25 August 2008 Site Activity: RI/FS Oversight										
Site Name: Price Batte	er <u>v</u>				Street Address: 251 Grand Street						
City: Hamburg		St	ate: I	PA	Latitude:		Longitude	e:			
Program: Superfund		A	cci. #: 2	008 T03 🕅 302DD2	C A3E2BD02	CERCLIS #: PA	N00030567	9			
Site ID: N/A		Sr	oill ID: I	N/A		Operable Unit:	2	-			
Site Specific QA Plan	Submitted: No	) Xes	Title:	Price Battery Operat	ble Unit 2 RI/FS Oversigh	t Draft SMP		Date Approved: 5/	12/08		
EPA Project Leader:	John Banks		Phon	e#: 215-814-3214	Cell Phone #:		E-mail: ba	nks.john-d@epa.gov	~		
Request Preparer: An	drea Soo		Phon	e#: 610 293 0450	Cell Phone #: 610-3	04-0803	E-mail: soc	oac@cdm.com			
Site Leader: Lucinda	Руре		Phon	e#: 717-560-7500	Cell Phone #:		E-mail: py	pelj@cdm.com			
Contractor: CDM				EPA CO/PO: Mel	lisa Hoffman						
#Samples 34	Matrix: soil	Trix: soil Parameter: Lead, Antimony, and Arsenic Bonnep Method: ILM05					LM05.4 ICP-AES	2.8183			
#Samples 1	Matrix: soil Parameter: ICP metals + Hg				V_	Method: I	LM05.4 ICP-AES	28184			
#Samples 10	Matrix: soil			Parameter: TCL V	/0C	Method: S	OM01.2, low soil	28186			
#Samples 10	Matrix: soil			Parameter: TCL S	SVOC	Method: S	OM01.2, low soil	28187			
#Samples 2	Matrix: soil	-		Parameter: TCL P	°CB	Method: S	OM01.2	28188			
#Samples 2	Matrix: water non	-potable		Parameter: ICP M	letals + Hg (Total)	Method: I	LM05.4 ICP-AES	28185			
#Samples 2	Matrix: water non	-potable		Parameter: ICP M	letals + Hg (Dissolved)	Method: I	LM05.4 ICP-AES	<u> </u>			
#Samples 2	Matrix: water non	-potable		Parameter: TCL V	/OC	Shieles	Method: S	OM01.2, trace water	2-8:189		
#Samples 2	Matrix: water non	-potable		Parameter: TCL S	SVOC	V	Method: S	OM01.2, low water	28190		
Ship Date From: 9/08	12008 (9/12) S	hip Date 7	Го: 10/	31/2008	Org. Validation Level 1	M3	Inorg. V	alidation Level IM2			
Unvalidated Data Req	uested: 🗌 No 🛛	Yes If	Yes, T	AT Needed: 🗌 14 o	days 🛛 7days 🗌 72hrs	s 🗌 48hrs 🗌 24	hrs 🗌 Othe	r (Specify) + 3 days fo	or CADRE ESA		
Validated Data Packag	ge Due: 🗌 42 days	🗌 30 d	ays [	] 21days 🗌 14 da	iys 🛛 Other (Specify) 2	28 days	425	14/214			
Electronic Data Delive	erables Required:	No 🛛	Yes	(EDDs will be provi	ided in Region 3 EDD For	mat)	/		···		
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 sooaccacdm.com or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (sooacacdm.com) and Nancy Forman (FormanNA(acdm.com), and Jonah Jackson (JacksonJM@cdm.com) when available. Quantitation limits are provided in the PDF file that was attached to this lab request.											

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<u>Saroj Pa</u>	<u>rikh</u>						
From: To: Cc:	"Walsh, Colin" <cwalsh20@fedcsc.com> "Saroj Parikh" <sparikh@shealylab.com "Kerry Hinshaw" <khinshaw@shealylab. <thaung.khin-cho@epa.gov>; <kwedar.j< th=""><th>&gt; .com&gt;; <slizys.da john@epa.gov&gt;</slizys.da </th><th>in@epa.gov&gt;; &lt;{</th><th>Harris.Carroll@</th><th>epamail.epa.ç</th><th>jov&gt;;</th><th></th></kwedar.j<></thaung.khin-cho@epa.gov></khinshaw@shealylab. </sparikh@shealylab.com </cwalsh20@fedcsc.com>	> .com>; <slizys.da john@epa.gov&gt;</slizys.da 	in@epa.gov>; <{	Harris.Carroll@	epamail.epa.ç	jov>;	
Sent: Attach: Subject:	ATT00046.htm Region 3   Case 37823   Lab SHEALY	Issue Discrepan	cles with tags, ja	rs, and/or TR/C	OC   FINAL	<b>.</b> €.	•••
Saroj,							1 A. A.
-			•			an george	
**Summary	Ştart***						-
Through nor	mal practices, the SMO Coordinator noticed the	at the analyses list	ed on the TR/COC	: do not match the	e analyses that	were schedu	lied
	· .						
ssue: The Ti scheduled for requested for	R/COC lists the analysis as VOA/SVOA/ARO/P r VOA/SVOA analysis for the water samples. P the water samples.	EST for the 1 wate lease note that the	er sample (C8222) Case request list	shippəd on 10/1/ TVOA, not VOA,	08; however, ti and there is no	e laboratory i ARO/PEST a	is onl analy
Resolution: F	er Region 3, the laboratory will perform TVOA/ arrative and proceed with the analysis of the sa	/SVOA/ARO analys ample.	sis on the water sa	mple. The labora	tory will note th	e issue in the	)
***Summarv	End***						
- Currinday -							
Please let me	e know if you have any further questions or prol	blems.			:		
1,54 1, <sup>5</sup>			and the second second	·	·		i.
Thanks,				n an the the track			A
Colin		:	• • • • •	- 			
Colin G. Mol			e transiana.	•			
Cont G. Was	ol Coordinator Degion 2			• ,			
COC	a Coordinator - Region 3						
686		•					•
15000 Confe	rence Center Drive, Chantilly, VA 20151		· .			ı	
Civil Division	(p) 703-818-4544   (f) 703-818-4602   cwalsh:	20@fedcsc.com   v	www.csc.com	,			
		·					
10/2/08, 8:15 Is listed as T	AM, Phone conversation between Dan Slizys ( VOA, not VOA, and there is no ARO analysis lis	(Region 3) and Col sted on the request	in Walsh (SMO). C for the water sam	Colin indicated the ples. Dan indicate	at on the Case i ed that the labo	equest the ar ratory will per	nalys rform
	And analysis on the water sample.	· .		• . • • •	 	ng ngang Ngang tang	
						•	
							i A
			•		AR302724	867 of 88	827
•						1.0/	

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-----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@epamall.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"

<cwaish20@fedcs

c.com> To

Dan Slizys/ESC/R3/USEPA/US@EPA,

10/01/2008 Carroll Harris/ESC/R3/USEPA/US@EPA

03:25 PM

Khin-Cho

Thaung/ESC/R3/USEPA/US@EPA, John

CC

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@epamall.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 To .com> Judy Snyder/ESC/R3/USEPA/US@EPA, Lisa Penix/ESC/R3/USEPA/US, 10/01/2008 02:47 "Michelle Berardino"
PM <mberardino@fedcsc.com>, R3

Clients@EPA, "Soo, Andrea"

<SooAC@cdm.com>

CC -

"Pype, Lucinda" <PypeLJ@cdm.com>,

AR302726 869 of 889

AR30272

870

"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)

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Saroj	Parikh

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Saroj Pa	arikh		£		· · · ·	. *	•••• •••••
From: To: Cc:	"Walsh, Colin" <cwalsh20@fedcsc.com> "Saroj Parikh" <sparikh@shealylab.com> "Kerry Hinshaw" <khinshaw@shealylab.com>; <mwoo <harris.carroll@epamail.epa.gov>; <thaung.khin-cho@< th=""><th>drum@shea ]}epa.gov&gt;;</th><th>alylab.com <kwedar.< th=""><th>1&gt;; <slizys john@epa</slizys </th><th>s.dan@epa.( a.gov&gt;</th><th>gov&gt;;</th><th></th></kwedar.<></th></thaung.khin-cho@<></harris.carroll@epamail.epa.gov></mwoo </khinshaw@shealylab.com></sparikh@shealylab.com></cwalsh20@fedcsc.com>	drum@shea ]}epa.gov>;	alylab.com <kwedar.< th=""><th>1&gt;; <slizys john@epa</slizys </th><th>s.dan@epa.( a.gov&gt;</th><th>gov&gt;;</th><th></th></kwedar.<>	1>; <slizys john@epa</slizys 	s.dan@epa.( a.gov>	gov>;	
Sent: Attach: Subject:	Monday, October 06, 2008 9:05 AM ATT00036.htm; Case 37823 SDG C8222 TR.pdf Region 03   Case 37823   Lab SHEALY   Issue Docum	entation   Fl	INAL	 	1. 	• •	· •
- Saroj,				• • • • •		· ·	
***Summary	Stan***						
-Discrepanci	es with tags, jars, and/or TR/COC-						
Issue 1: The and VOA; ho TVOA, SVO/	TR/COC lists the analyses for sample C8222 as BNA, PEST, wever, per the Scheduling Notification From the analyses are A, and ARO.	•	. : ·				
Resolution 1 and PEST ar the Case/SD	: Per Region 3, the laboratory will perform TVOA, SVOA, ARO, nalyses on sample C8222. The laboratory will note the issue in G Narrative and proceed with the analysis of the sample.		. <sup>1</sup> • •	:		· .	
Issue 2: The however, the be located.	laboratory received 11 containers for sample C8222; y only have 10 sample tags. Sample tag number 005-421 cann	ot			e an star the		
Resolution 2 Case/SDG N	: Per Region 3, the laboratory will note the issue in the larrative and proceed with the analysis of the sample.				,		
			÷ .	11	1		
-insufficient/i	nappropriate designation of laboratory QC-						-
Issue 3: The per the Sche	TR/COC designated sample C8222 as laboratory QC; however duling Notification Form laboratory QC is not required.	Γ,			· .	'	
Resolution 3 QC on samp Narrative and	: Per Region 3, the laboratory will not perform laboratory le C8222. The laboratory will note the issue in the Case/SDG d proceed with the analysis of the sample.					÷	
***Summary	End***						
					·		
Please let mi	e know it you have any lunner questions or problems.	×		· ·	. <b>-</b>		: '
Thanks,		• •					
Colin							•
Colin G. Wal	sh						
Environment	al Coordinator - Region 3						
CSC				•			· ·

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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: Sllzys.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>

To

Dan Slizys/ESC/R3/USEPA/US@EPA,

10/03/2008 03:40 Carroll

#### PM Harris/ESC/R3/USEPA/US@EPA

CC

#### Subject

NEW ISSUE | Case 37823 | Lab

#### SHEALY | Issue Documentation

AR302729 872

Page 2 o

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 iaboratory 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

15000 Conference Center Drive, Chantilly, VA 20151 civil division | phone 703-818-4346 | fax 703-823-4602 | kschaffer@fedcsc.com | www.csc.com

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Page 4 of

AR30273

874 c

----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>

То

CC

10/03/2008 10:49 R3 Clients@EPA

AM

"Walsh, Colin"

<cwaish20@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

AR3027

Page 1 of

From:	"Walsh, Colin" <cwalsh20@fedcsc.com></cwalsh20@fedcsc.com>
To:	"Saroj Parikh" <sparikh@shealylab.com></sparikh@shealylab.com>
Cc:	"Kerry Hinshaw" <khinshaw@shealylab.com>; <mwoodrum@shealylab.com>; <slizys.dan@epa.gov>;</slizys.dan@epa.gov></mwoodrum@shealylab.com></khinshaw@shealylab.com>
	<harris.carroll@epamail.epa.gov>; <thaung.khin-cho@epa.gov>; <kwedar.john@epa.gov></kwedar.john@epa.gov></thaung.khin-cho@epa.gov></harris.carroll@epamail.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

15000 Conference Center Drive, Chantilly, VA 20151 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

AR30273

877 of 88

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.

AR302735 878 of 889

-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

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.

AR302736

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#### (See attached file: CT4356.doc)

"Walsh, Colin"

<cwalsh20@fedcsc

.com> To

Dan Slizys/ESC/R3/USEPA/US@EPA,

10/03/2008 03:40 Carroll

PM 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.

Page 5 of

AR302737 880 of

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

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>

То

#### 10/03/2008 10:49 R3 Clients@EPA

AM

"Walsh, Colin"

<cwalsh20@fedcsc.com>,

"Michailof, David"

<MichailofDR@cdm.com>

Subject

cc

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,

AR302739



Page 7 of

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)

#### 883 of 889 10/07/
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Saroj Pa	ikh				an a
From: To: Cc: Sent:	"Schaffer, Keri" <kschaffer@fedcsc.com "Kerry Hinshaw" <khinshaw@shealylab <slizys.dan@epa.gov>; <harris.carrol@ Thursday, October 23, 2008 9:56 AM</harris.carrol@ </slizys.dan@epa.gov></khinshaw@shealylab </kschaffer@fedcsc.com 	n> .com>; "Saroj Parikh" )epa.gov>; <kwedar.jo< th=""><th><sparikh@shealylab.com hn@epa.gov&gt;; <thaung.k< th=""><th>&gt; hin-cho@epa</th><th>.gov&gt;</th></thaung.k<></sparikh@shealylab.com </th></kwedar.jo<>	<sparikh@shealylab.com hn@epa.gov&gt;; <thaung.k< th=""><th>&gt; hin-cho@epa</th><th>.gov&gt;</th></thaung.k<></sparikh@shealylab.com 	> hin-cho@epa	.gov>
Adach: Subject:	Region 03   Case 37823   Lab SHEALY	SDG C8222   Issue	Laboratory problems   FIN	IAL	
Kerry,					· · ·
·					•
This Is Keri Sc	haffer; I'm helping Colin today.				
***Summary S	tart***			•	
Issue: SDG Cl contaminated Eight bottles w volume left for	8222 contained one water sample for VOA, S with PEST compounds from a high level sam ere received, MS/MSDs were required for the this sample.	VOC, Pest, and ARO and ple that was processed to Pest and ARO analyses	alysis. The PEST sample an hrough the extractions labora s, and the SVOC had one re-	d associated m atory concurrent extraction, so t	ethod blank are lly with this SDG. here Is no remaini
Resolution: Pe	r Region 3, the laboratory shall report the res	sults for this sample as is	and note the issue in the Ca	se/SDG Narrat	ve.
***Summary E	nd***				
Please let me	know if you have any questions.				
Thank you,					
Keri for					
Colin G. Walsl	1				
Environmental	Coordinator - Region 3				· · ·
CSC ,					N.
15000 Conference	ence Center Drive, Chantilly, VA 20151 Civil E	Division   (p)			· ·
703-818-4544	(f) 703-818-4602   cwalsh20@fedcsc.com	www.csc.com <hitp: td="" ww<=""><td>w.csc.com&gt;</td><td></td><td>:</td></hitp:>	w.csc.com>		:
·	· . ·				
10/23/2008 9::	35am				
Phone conven issue in the SI	sation between Keri Schaffer (SMO) and Dan OG Narrative.	Slizys (Region 3). Per Re	egion 3, the laboratory shall r	report the samp	le as is and note

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

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and the second second second

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### 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> То

Dan Slizys/ESC/R3/USEPA/US@EPA

10/21/2008 01:22 Carroll

PM

Harris/ESC/R3/USEPA/US@EPA, John Kwedar/ESC/R3/USEPA/US@EPA, Khin-Cho

CC

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

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initiative expressly permitting the use of e-mail for such purpose.

----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.carroli@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,

000000000

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> To

Dan Slizys/ESC/R3/USEPA/US@EPA,

10/21/2008 11:23 Carroll

AM 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

AR302744

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 Givil 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.

AR302745 888 of 889 10/23/0

### 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

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AR302746

## Appendix D

## Laboratory Case Narrative

### Shealy Environmental Services, Inc.

Contract Number: EPW05031

Date: 10/28/2008

### **SDG Narrative**

### Case 37823

<sup>•</sup>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) = $\frac{(A_x)(I_s)(DF)}{(A_{i_s})(RRF)(V_o)}$	trij N	 
	Where $A_x$ is the area of the characteristic ion (BICP) for the compound to be measured. $A_{is}$ is the area of the characteristic ion (BICP) 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	(A_)(I_)(V_)(DF)(GPC)
	Water sample concentration ug/L = $\frac{(x + y)(x + y)(x + y)(x + y)}{(x + y)(x + y)(x + y)}$
	(Ais)(RRF)(Vo)(Vi)
	Where
	$A_x$ is the area of the characteristic ion (EICP) for the compound to be measured.
	Ag is the area of the characteristic ion (ELCP) for the internal standard.
	KKP is the mean relative response factor from the initial calibration.
	$\Delta P$ is the unique factor. () GPC = V, V, $\sim$ GPC factor
	$V_{in}$ is the volume of extract loaded onto GPC column.
	V <sub>oat</sub> 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 $V_t = V_{\text{out}}$ .
	V: Volume of water extract injection in d.
ter i ser en	
PEST/Aroclor	$(A_{\star})(V_{\star})(OF)(GPC)$
Equation	Water sample concentration $ug/L = \frac{(2\pi)(-1)(2T)(2T-2)}{(2\pi)(2T)(2T)}$
	(CF)(V₀)(Vi)
· · · · ·	Where
	$A_x$ is the response (peak area) of the compound to be measured.
	CF is the mean calibration factor from the initial calibration (area/ng).
	DF is the dilution factor.
	$GPC = V_{in}/V_{out}$ ; $GPC$ factor.
	$v_{\rm h}$ is up volume of extract folloaded onto GrC column.
	$V_i$ is volume of the concentrated extract in uL. (If no GPC cleanup is performed, then $V_i = 1000$ uL. If GPC cleanup is
•	performed, then $V_1 = V_{out}$ .
	Vt is the volume of the extract injected in uL.
	V <sub>o</sub> : 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.

### Arocior 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. Panior

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

### ANALYTICAL SERVICE AND QUALITY ASSURANCE BRANCH OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

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 <sup>444</sup> 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.

### <u>NOTES</u>

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 1ASummary 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 1ASUMMARY OF QUALIFIERS ON DATA SUMMARYFORM AFTER DATA VALIDATION

Case 37823,	SDG MC8223			• •	· · · · · · · · · · · ·
· . · · .		÷	NON-	an th	
ANALYTE	SAMPLES AFFECTED	POSITIVE <u>VALUES</u>	DETECTED VALUES	BIAS	COMMENTS*
Sb	MC8223	<b>J</b>	ş		>MDL <crql MSL (50%)</crql 

\* See explanation of comments in Table 1B

AR302754

### TABLE 1B CODES USED IN COMMENTS COLUMN

Ξ	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.

## 

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## Appendix B

Data Summary Forms

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### DATA SUMMARY FORM: INORGANIC

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

Sample Number :		MC8223	}	ļ					
Sampling Location :		KC-SED 2			00000				
Matrix :		Soil							
Units :		mg/Kg							i
Date Sampled :		10/2/2008				•			
Time Sampled :		09:00							
%Solids:		84.5							
Dilution Factor :		1.0		·					
ANALYTE	CRQL	Result Flag	Result Fla	g Result F	lag	Result	-lag	Result	Flag
ANTIMONY	6	0.70 J							
ARSENIO ,	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

AR302759

Appendix C

## Chain of Custody Records

AR302760

\$EP	USEPA ( Inorgan	Contra ic Traf	ct Laboratory fic Report &	/ Program Chain of C	ustody Re	ecord			<b>Cas</b> DAS	<b>e No:</b> No:	37823		R
Region: Project Code	3 : CT4356			Date Shipped: Carrier Name:	10/2/2008 FedEx		Cha	in of Custody	Record		Sampler Signature:		
Account Cod	le:			Airbill:	7921-1802 3	635	Relin	nquished By	(Date	/ Time)	Received By	(Date )	/ Time)
CERCLIS (D:	PAN000305	679		Shipped to:	Bonner Analy	tical Testing	1						
Site Name/St	ate: 37823 - Prio	ce Battery	OU2 - 092008/PA		2703 Oak Gr	ove Rd	2	ŕ					
Project Lead	er: Lucinda Py Combined F	pe RI/ES			(601) 264-28	54 54	3						
Sampling Co	CDM				•		4		<u>_</u>			<u> </u>	
INORGANIC SAMPLE No	MATRIX Sampler	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG PRESERVAT	No./ IVE/ Bottles	STATION LOCATION		SAMPLE	COLLECT E/TIME	OR( SAM	GANIC PLE No.	QC Type	
MC8221	Ground Water/ David Michailof	U/G	DM (14)	005-408 (HNO:	3) (1)	MW3 DIS		S: 9/30/2008	14:20	-	IFEED particular in the first of the second s	Lab QC	
MC8222	Ground Water/ David Michailof	L/G	TM/Hg (14)	005-428 (HNO:	i) (1)	MW3		S: 9/30/2008	14:20	C8222	·	Lab QC	
MC8223	Soil/Sediment/	ĽĠ	ICP Sb. As (14)	005-429 (lce Oi	niv) (1)	KC-SED 2		S: 10/2/2008	9:00	•		l ah OC	

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 lced?				
DM = CLP TAL Dissolv	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		<b>REGION COPY</b>				

David Michailof

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

## **U.S. EPA Region III Analytical Request Form**

Revision 10.06

	ASQABUS	EONLY
RAS#	CT4356	Analytical TAT
DAS#		P 111
NSE#	· · · · · · · · · · · · · · · · · · ·	117

378	23								¥	
Date: 25 August 200	08 Site Activ	vity: RI	I/FS Oversight				~		· ·	· · · · · · · · · · · · · · · · · · ·
Site Name: Price Batte	ery and			Str	eet Address: 251 Gran	nd Str	eet	· · ·		······································
City: Hamburg	· · · · · · · · · · · · · · · · · · ·	State:	PA	La	titude:	-		Longitude	······································	
Program: Superfund		Acct.	#: 2008 T03 1 302DD2	C A3	3E2BD02	CE	RCLIS #: PA	N000305679	)	
Site ID: N/A		Spill 1	ID: N/A			Op	erable Unit: 2	2		
Site Specific QA Plan	Submitted: 🗌 No 🖾 Y	es Ti	itle: Price Battery Operal	ble U	Init 2 RI/FS Oversight	Dra	ft SMP		Date Approved: 5/	12/08
EPA Project Leader:	John Banks	P	'hone#: 215-814-3214		Cell Phone #:			E-mail: ban	iks.john-d@epa.gov	
Request Preparer: An	drea Soo	P	Phone#: 610 293 0450		Cell Phone #: 610-30	04-08	03	E-mail: soo	ac@cdm.com	
Site Leader: Lucinda	Рурс	P	hone#: 717-560-7500		Cell Phone #:			E-mail: pyp	pelj@cdm.com	
Contractor: CDM	EPA CO/PO: Mel	EPA CO/PO: Melisa Hoffman								
#Samples 34 Matrix: soil Parameter: !				ameter: Lead, Antimony, and Arsenic Bennee				Method: II	LM05.4 ICP-AES	28183
#Samples 1	Matrix: soil		Parameter: ICP m	etals	+ Hg		V	Method: II	M05.4 ICP-AES	28184
#Samples 10	Matrix: soil		Parameter: TCL V	70C			Shealur	Method: S	OM01.2, low soil	28186
#Samples 10	Matrix: soil		Parameter: TCL S	voc				Method: S	OM01.2, low soil	25187
#Samples 2	Matrix: soil		Parameter: TCL P	CB				Method: S	ОМ01.2	28188
#Samples 2	Matrix: water non-potabl	le	Parameter: ICP M	etals	+ Hg (Total)		Bonner	Method: II	M05.4 ICP-AES	1 25185
#Samples 2	Matrix: water non-potabl	le	Parameter: ICP M	etals	+ Hg (Dissolved)		V	Method: II	LM05.4 ICP-AES	
#Samples 2	Matrix: water non-potab	le	Parameter: TCL V	70C			Shialu	Method: S	OM01.2, trace water	25189
#Samples 2	Matrix: water non-potab	le	Parameter: TCL'S	voo			UT.	Method: S	OM01.2, low water	.28,90
Ship Date From: 9/08	$1/2008$ $(q_{12})$ Ship Da	ate To:	10/31/2008	Org	g. Validation Level M	/13		Inorg. V	alidation Level IM2	
Unvalidated Data Req	uested: 🗌 No 🛛 Yes	If Ye	s, TAT Needed: 🔲 14	days	🖾 7days 🗌 72hrs		48hrs 🗌 24	hrs 🗌 Other	(Specify) + 3 days for	or CADRE ESAT
Validated Data Packaş	ge Due: 🗌 42 days 🔲 3	0 days	🗌 21days 🔲 14 da	ys	Other (Specify) 28	8 day	s Ŧ	425,	14/214	
Electronic Data Delive	erables Required: 🗌 No	X Yes	s (EDDs will be provi	ided	in Region 3 EDD Form	mat)		1	1	· · · · · · · · · · · · · · · · · · ·
Special Instructions:	The unvalidated data is req	uested v	via SMO/ESAT – 7 day:	s ana	lytical TAT + 3 days fo	for co	mpliance rev	iew = 10 day	s at no additional cost.	Please note that

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 source edm.com or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (socac@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

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		08	10040-01DUP
		MC8223S		0	810040-01MS

Were ICP-AES and ICP interelement corrections applied?	(Yes/No)	ICP-AES Yes	ICP-MS 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:	aut	Name: <u>Brandon G. Beck For Chris Bonner</u>
Date:	10/16/08	Title: President

COVER PAGE

ILM05.4

## **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 199

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 08 10,040-01 EPA Sample # MC8 223 Date & Time 10/16/2008 2 1107  $25_{\mu g/L}$ (0.100 L) 100 % 1000 g 1 mgMetals: (Analyte As) (1.00 g) 84,5 % 1 kg 1000 µg

Authorized by e Daniel Antrim

Document Control Officer

2

### 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

AR302766

### 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: % Solida = ((Dry Pan and Sample Weight - Pan Weight)/(Wei pan and Sample Weight - Pan Weight) X 100 % Malatura = 100- % Solida

105°C Oven: Fisher Isotemp S/N 70600094 Batance: #8

-----

	mport Spec	-WC TS and WC_PMC	NST						(Time in Oven)	(Time out of Oven)	_	_			<u>.</u>
_[	Pan	SampiD	Cilent ID	SampType	Pan	Wet Pan and Sample	Dry Pan and Sample	Ory Sample	AnalQate		unita	% Solids	% Molsture	Recovery	POL
Ī	#		Source ID		Weight (g)	Weight (g)	Weight (g)	Weight (g)				RawVal	RawVal	or RPD_	
ĺ		0810040-01	MC8223	Sample	1.0300	9.3300	2.3200	1,2900				15.642	84.458		
1		8101617-DUP1	0810040-01	Duplicate	1.0000	9,9000	2,6300	1 6300				18.315	81.685		

10/16/2008 13:24

Version 6/2/2005

υ ω

### 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 KC7 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

### ANALYTICAL SERVICE AND QUALITY ASSURANCE BRANCH OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

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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

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

Mahboobeh Mecanic<sup>4,44</sup> Senior Oversight Chemist

To: Khin-Cho Thaung ESAT Region 3 Project Officer

### <u>OVERVIEW</u>

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 ( $\leq 5X$ ) 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 1ASummary of qualifiers on data summary forms after data validationTable 1BCodes used in comments column of Table 1AAppendix AGlossary 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 1ASUMMARY OF QUALIFIERS ON DATA SUMMARYFORM AFTER DATA VALIDATION

Case 37823, SDG MC8221

ANALYTE	SAMPLES AFFECTED	POSITIVE <u>VALUES</u>	NON- DETECTED <u>VALUES</u>	<u>BIAS</u>	COMMENTS*
Со	MC8221	В		High	CCB (0.760 J ug/L)
Fe	MC8221	В		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)

1 12

Case 37823, SDG MC8222

	·	POSITIVE	NON- DETECTED		
ANALYTE	SAMPLES AFFECTED	VALUES	VALUES	BIAS	COMMENTS*
Cd	MC8222	В		High	CCB (0.361 J ug/L)
Co	MC8222	В		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  $\leq 5X$  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

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## Glossary of Data Qualifier Codes

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### **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

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## Data Summary Forms

DATA SUMMARY FORM: INORGANIC

Case #: 37823	
Site :	
Lab. :	

SDG : MC8221 PRICE BATTERY BONNER Number of Soli Samples: 0

Number of Water Samples: 1

· · · · · · · · · · · · · · · · · · ·		-		Dissolved	Meta	s					
Sample Number :		MC8221									
Sampling Location :		MW3 DI	S								
Matrix :		Water									
Units :		ug/L			-		1				
Date Sampled :		9/30/2008	8			*					
Time Sampled :		14:20					:				
Dilution Factor :		1.0									
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200					1					
ANTIMONY	· 60		ſ		[			. · ·			
*ARSENIC	10										
BARIUM '	200	32.9	J								
BERYLLIUM	5	[ .		×.							i .
*CADMIUM	5	:									
CALCIUM	5000	26000				-					
*CHROMIUM	10	[ ]		ſ	1					an la f	
COBALT	50	1.1	в								
COPPER	25	: 1 <b>.</b> 3 ∈	J				28				
IRON	100	15.5	в	ſ							ł
*LEAD	10		UL					반 전 2		an t	
MAGNESIUM	5000	11000					1				Į
MANGANESE	15	170			1	ł	1 1				[:
MERCURY	0.2		υL	l			l				
*NICKEL	40	1.4	J ·		i	2.12	a adalari	Xely - S		-	
POTASSIUM	5000	2290	J		1			1			ł
SELENIUM	35		н Н						N.	a. *	
SILVER	10										Î
SODIUM	5000	16500	ł	1	1			en en e	ંં		1
THALLIUM	25							1			
VANADIUM	50										1
ZINC	60	6.6	J				L				<u> </u>
ODOL On when at ID	o 111 11										

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

Case #: 37823 Site : Lab. :	SDG : M PRICE B BONNE	C8222 ATTERY R		Number of Sol Number of Wate					Soil S ater S	Samples : Samples :	0 1	
	artite to stige.			Total Meta	als							
Sample Number :		MC8222			•							
Sampling Location :		MW3		ſ				•		1		- 1
Matrix :		Water										
Units :	•	ug/L										
Date Sampled :		9/30/200	8									
Time Sampled :		14:20									1	
Dilution Factor :		1.0										
ANALYTE	CRQL	Result	Flag	Result	Flag	R	esult	Flag	Result	Flag	Result	Flag
ALUMINUM	200	180	J								÷.,	
ANTIMONY	60				-							
*ARSENIC	10											
BARIUM	200	33.7	J					<u>.</u>				
BERYLLIUM	5										1.1	
*CADMIUM	5	0.093	В									
CALCIUM	5000	2590Ò								•		
*CHROMIUM	10			1	1.17			ŀ	• .	c.		ŀ .
COBALT	<sup>·</sup> 50	1.2	В				•				•	
COPPER	25	0.86	J				. •					1.5
IRON	100	292										
*LEAD	10		UL.							а 1. ч		
MAGNESIUM	5000	11100										
MANGANESE	S 15 a	ା <b>173</b> ି		e e pr	98	S. 5		3 J. 1	in er	È G	os tras e	e si s
MERCURY	0,2		UL			· ·						
*NICKEL	40	1.5	J					1		l'		
POTASSIUM	5000	2290	J									
SELENIUM	35											
SILVER	10											
SODIUM	5000	16800										
THALLIUM	25											
VANADIUM	50							l				
ZINC	60	5.2		1				1	ł	1		1

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

# Appendix C

# Chain of Custody Records

\$EP/	USEPA C Inorgan	Contrac ic Trafi	t Laborator fic Report &	/ Program Chain of Cus	tody Re	ecord			Cas DAS	e No: No:	37823		R
Region:     3     Date Shipped:     10/2/200       Project Code:     CT4356     Carrier Name:     FedEx       Account Code:     CT4356     Carrier Name:     FedEx		10/2/2008 Chain of Custody F FedEx Beingwichted By		Record	/ Time)	Sampler Signature: Received By	(Date / Tim						
CERCLIS ID: Spill ID:	PAN000305 AE2	5679	79 Shipped to: Bonner Analytical Testing Company		ytical Testing	1							
Site Name/Stat Project Leader: Action: Sampling Co:	Site Name/State:     37823 - Price Battery OU2 - 092008/PA     2703 O       Project Leader:     Lucinda Pype     Hattiest       Action:     Combined RI/FS     (601) 20       Sampling Co:     CDM		703 Oak Grove Rd         2           lattiesburg MS 39402         3           301) 264-2854         3           4         4		2 3 4			- <u></u>		·····			
INORGANIC SAMPLE No.	MATRIX SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/	Bottles	STATION LOCATION		Sample Dat	e collect E/TIME	OR SAM	GANIC PLE No.	QC Type	-27 <sub>441-100</sub>
MC8221	Ground Water/ David Michailof	L/G	DM (14)	005-408 (HNO3) (1	I)	MW3 DIS		S: 9/30/2008	14:20			Lab QC	
MC8222	Ground Water/ David Michailof	Ľ∕G	TM/Hg (14)	005-428 (HNO3) (1	)	MVV3		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 Dissolve	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					

#### 3-594095470-100208-0001 IR Number:

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 AR302779

# U.S. EPA Region III Analytical Request Form Revision 10.06

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	SEONLY		
RAS#	CT4356	Analytical	TAT
DAS#		5	111
NSF#			17

### 37823

and the second se										
Date: 25 August 200	)8 Site	e Activity:	RI/FS	Oversight						
Site Name: Price Batt	ery				Street Address: 251 Grand Street					
City: Hamburg State: PA			PA	Latitude:			Longitude: *			
Program: Superfund		A	cct. #: 2	008 T03 🗰 302DD2C	A3E2BD02		CERCLIS #: PA	N000305679	)	
Site ID: N/A		Sp	ill ID:	N/A		_	Operable Unit: 2	2		
Site Specific OA Plan	Submitted: 🗌 No	⊃ ⊠Yes	Title:	Price Battery Operabl	e Unit 2 RI/FS (	Oversight	Draft SMP		Date Approved: 5/12/08	
EPA Project Leader:	John Banks		Phon	e#: 215-814-3214	Cell Phone	#:		E-mail: ban	ks.john-d@epa.gov	
Request Preparer: An	drea Soo		Phon	e#: 610 293 0450	Cell Phone	#: 610-30	04-0803	E-mail: soo	ac@cdm.com	
Site Leader: Lucinda	Руре		Phon	e#: 717-560-7500	Ceil Phone	#:		E-mail: pyp	elj@cdm.com	
Contractor: CDM				EPA CO/PO: Melis	a Hoffman					
#Samples 34	Matrix: soil Parameter: Lead,			Parameter: Lead, A	ntimony, and A	senic	Benner	Method: IL	M05.4 ICP-AES	28183
#Samples 1	Matrix: soil		_	Parameter: ICP met	als + Hg		V	Method: ILM05.4 ICP-AES		
#Samples 10	Matrix: soil	Aatrix: soil Parameter: TCL V			)C		Shealur	Method: SOM01.2, low soil 25/54.		
#Samples 10	Matrix: soil Parameter: TCL S			Parameter: TCL SV	ос			Method: SO	DM01.2, low soil	28187
#Samples 2	Matrix: soil	Parameter: TCL P			В		/	Method: SC	DM01.2	28188
#Samples 2	Matrix: water non-	potable		Parameter: ICP Met	tals + Hg (Total) 730hner 1			Method: IL	M05.4 ICP-AES	1.5725
#Samples 2	Matrix: water non-	-potable		Parameter: ICP Met	etals + Hg (Dissolved)			Method: IL	M05.4 ICP-AES	
#Samples 2	Matrix: water non-	-potable		Parameter: TCL VC	IC		Shealer	Method: SC	DM01.2, trace water	2.5189
#Samples 2	Matrix: water non-	-potable		Parameter: TCL SV	OC _		VI	Method: SC	DM01.2, low water	28196
Ship Date From: 9/08	$/2008$ ( $q_{12}$ ) S	hip Date T	`o: 10/	31/2008	Org. Validation	Level M	13	Inorg. Va	lidation Level IM2	
Unvalidated Data Req	uested: 🗌 No 🛛	Yes If	Yes, T	AT Needed: 🗌 14 da	ys 🛛 7days	72hrs	48hrs 24	irs 🗌 Other	(Specify) + 3 days fo	r CADRE EA
Validated Data Packag	e Due: 🗌 42 days	🗌 30 da	iys 🗌	] 21days 🔲 14 days	🛛 Other (Sp	ecify) 28	days 7	121 1	4/214	
Electronic Data Delive	rables Required:	No 🛛	Yes	(EDDs will be provide	ed in Region 3 I	DD Form	nat)	/		
Electronic Data Deliverables Required: INO 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 <u>sooactacedm.com</u> or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (sooac(acdm.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

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## **SDG MC8221**

Lab	Name:	Bonner 1	Analytical	Testing			Contract:	EPW06055		
Lab	Code:	BONNER	Case No.:	37823	NRAS	No.	:	SDG No.:	MC8221	
SOW	No.:	ILM05.4								
		EPA	A SAMPLE NO	).			Lab	Sample ID:		
			MC8221	· ·			- <u> </u>	0810037-01	_	
			MC8221D		,		08	10037-01DUP	• •	`
			MC8221S	-			0	810037-01MS	-	

Were ICP-AES and ICP interelement corrections applied?	(Yes/No)	ICP-AES Yes	ICP-MS 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:	Uth	Name:
Date:	10/14/08	Title: President

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### **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.

#### <u>Metals</u>

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 # MC 8221 Date & Time 10/16/2008@1306 26011 µg/L \* \_ (Dilution Factor) = 26,000 ug/L Metals: (Analyte  $C_{0}$ ) Date & Time<u>19/07/2008@</u>1407 (CRQL reported) -Qa Qda µg/L \* (Dilution Factor) -0,0060 eng. Hg:

Authorized by Daniel Antrim

Document Control Officer

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98 Bonner Analytical Testing Company 04268 Corrective Action Topic: MCB221 ? MCO6223 Date: 13/14/08 Nature of Problem: while running the closing QC the sample introduction lese came base causing the CCV to ful the everything. Action Requested: 1 New Sample Requested: YES 2 Retest or Reanalysis Necessary: YES 3 Other Action: Submitter Alo-Date: 10/14/08 Signature: Since there was run left in the analytic. Corrective Action Taken: sequence the m was stopped, tubing reattached : the hill closery Be was reanalyzed YES Was the problem resolved: NO Responder Signature: Date: AR302785

**SDG MC8222** 

Lab	Name:	; Bonner Analytical Testing Co				ontract: EPW06055			
Lab	Code:	BONNER Case No.:	37823	NRAS	No.:	SDG No.;	MC8222		
SOW	No.:	ILM05.4					· .		
		EPA SAMPLE NO			Lab	Sample ID:			
		MC8222			1	0810039-01	_		
		MC8222D			08	10039-01DUP			
		MC8222S			0	810039-01MS			

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

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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

COVER PAGE

### **Bonner Analytical Testing Company**



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

#### **SDG NARRATIVE:**

#### <u>SDG Number: MC8222</u> <u>Case Number: 37823</u> <u>Contract Number: EPW06055</u>

#### 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

<u>CSF:</u> No Discrepancies

Sample Equation: Lab ID OS EPA Sample # MCDate & Time 10/16/2008@1242 180,21 μg/L \* Metals: (Dilution Factor) 🚞 (Analyte 208@1413 Date & Time (Dilution Factor)  $= -Q_1 Q_3 Q_{44}$ Hg:-0,0295 μg/L

Authorized by Daniel Antrim Document Control Officer

**Bonner Analytical Testing Company** Corrective Action **n**k283 Topic: MC8221 ? Mc08223 Date: 10/10/08 Nature of Problem: While running the closing QC the rough in trade too Action Requested: 1 New Sample Requested: YES 2 Retest or Reanalysis Necessary: YES 3 Other Action: Submitter Signature: \_\_\_\_\_ Date: 15/10/08 Corrective Action Taken: Since the ra was run left in the analytical Sequence the in was stopped, tubing reatlactual it the fill closery Be was rearalyzed YES NO Was the problem resolved: Responder Signature: Date:



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.

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OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

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AR302790

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 J

To:

Colleen Walling ESAT Region 3 Project Officer

#### <u>OVERVIEW</u>

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 ( $\leq$ 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,  $\pm 2XCRQL$ ) 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 gualified "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.

#### <u>ATTACHMENTS</u>

#### 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 1BCodes 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 <u>VALUES</u>	NON- DETECTED <u>VALUES</u>	BIAS	COMMENTS*
Al	All samples	J	÷ .	· .	ISD (23%)
Sb	MC81Y1	L	· ·	Low	MSEL (12%)
1 a	MC0050, MC8201, MC8204	J			>MDL <crql MSEL (12%)</crql 
As	All samples	L		Low	MSL (70%)
Ba	All samples	J		*.	ISD (24%) LCSL (9%)
Be	All samples	<b>J</b> .			ISD (12%)
Cd	MC0050, MC8201	В		High	CCB (0.266 J ug/L) MSL (74%)
	MC81Y1, MC8204	J		· .	>MDL <crql MSL (74%)</crql 
Ca	All samples	J	· .	· · ·	ISD (25%)
Cr	All samples	J			ISD (16%)
Со	All samples	J	'.	1.	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 1ASUMMARY OF QUALIFIERS ON DATA SUMMARYFORM AFTER DATA VALIDATION

#### Case 37823, SDG MC0050

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ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON- DETECTED <u>VALUES</u>	<u>BIAS</u>	COMMENTS*
К	All samples	J	•		ISD (25%)
Se	All samples	n <b>J</b> n t	· · · · · · · · · · · · · · · · · · ·		>MDL <crql MSL (60%)</crql 
Ag	MC0050, MC8204		UL	Low	MSL (57%)
	MC81Y1, MC8201	J	م الم الم الم الم الم الم الم الم الم الم الم		>MDL <crql MSL (57%)</crql 
V	All samples	J		· · ·	ISD (15%)
Zn	All samples	Ĵ	· .		ISD (31%) MSL (73%)

#### TABLE 1B CODES USED IN COMMENTS COLUMN

ISD	<b>=</b>	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< td=""><td>=</td><td>Reported results are greater than MDLs but less than CRQLs and are considered estimated.</td></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.
ССВ	=	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	H	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.

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# Appendix A

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## Glossary of Data Qualifier Codes

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#### **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
Site :
Lab. :

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SDG : MC0050 PRICE BATTERY BONNER Number of Soil Samples : 4

Number of Water Samples : 0

			Constitution of the low		******					the second s	
Sample Number :	MC0050		MC81Y1		MC8201		MC8204				
Sampling Location :		MP45-33	MP45-33		BW1-9		BW8-9		PL3-9		
Matrix :	Soll		Soil		Soil		Soil				
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg			
Date Sampled :		9/18/200	В	9/22/200	₿	9/24/200	B	9/24/200	8		
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	Ĵ	79.8	J	101	J		
BERYLLIUM	0.5	0.86	J	0.22	J	0.28	J	0.66	J		
GADMIUM	0.5	0.032	B	0.28	J	0.073	В	0,32	J	4 S S	
CALCIUM	500	2030	J	47200	J	13800	J	18900	J		
CHROMIUM	1	15.4	)	22.2	J.	15.7	U.	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		ф, ч
IRON	10	19500	J	18900	J	47800	J	23100	J		
MEAD		45.0	IJ	1790	J.	104	J	184	J		
MAGNESIUM	500	2070	J	3170	J	2920	J	4710	J		
MANGANESE	1.5	1230 -	ປີ	269	J	940	J	260	J		¥8
MERCURY	0.1	0.11	J	0.086	J	0.14		0.20			
NIGKEL	4	14.8	J	12.4	Ĵ.	13.4	(Jack	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	5.4	22.9	J	12.5	J	33.4	J	17.4	J		80
ZINC	6	52.3	J	47.2	J	37.7	J	68.5	J		

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / (% Solids/ 100)

# Appendix C

# Chain of Custody Records

	USEPA Contract Lab Inorganic Traffic Rep	-	<b>Reference C</b> a Client No:	ase: 37823	R		
Region: Project Code: Account Code: CERCLIS ID: Spill ID: Site Name / City/State: Project Leader: Action: Sampling Co:	3 CT4356 AE2 37823 - Price Battery OU2 - 092008 PA Lucinda Pype CDM	Date Shipped: Carrier Name: Airbill: Shipped to:	9/25/2008 FedEx 792113123305 Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	Chain of Custo Relinquished By 1 2 3 4	ody Record	Sampler Signature: Received By	(Date/Time)
INORGANIC SAMPLE No. MC0050	MATRIX/ SAMPLER TYPE Soil (>12")/ David Michailof 2	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION MP45-33	SAMPI DA S: 09/1	LE COLLECT TE/TIME 8/2008 14:55	QC Type

MC0068	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	/ 006-301 (loe 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 (lce 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 Michallof	2	ICP Sb, As (14)	006-315 (loe Only) (1)	WH12-33	S: 09/19/2008 10:45	

### I rec & 10-10-08 JES MCOOD 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/Me	dium Type/Designate : Composite = C, Grab = G, Both = B	Shipment Iced?		
ICP Sh As = ICP Sh A				1	

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

### COC Number : 3-594095470-092508-0001

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

AR302801

10 J.A.	USEPA Contract Inorganic Traffic		Reference Case: 37823 Client No:					
Region: Project Code:	3 CT4356		Date Shipped: Carrier Name:	9/25/2008 FedEx	Chain of Custod	y Record	Sampier Signature:	
Account Code:			Airbill:	792113123305	Relinquished By	(Date/Time)	Received By	(Date/Time)
Spill ID:	AF2		Shipped to:	Bonner Analytical Testing Co.	1			· · · · · · · · · · · · · · · · · · ·
Site Name /	37823 - Price Battery OU2 - 092008			2703 Oak Grove Road Hattiesburg MS 39402	2			
Project Leader.	PA • Lucinda Pype		•	6012642854	3			······································
Action: Sampling Co:	CDM				4			
· · · · · · · · · · · · · · · · · · ·				· · · · · · · · · · · · · · · · · · ·				· · · · · · · · · · · · · · · · · · ·
INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAĠ No./ PRESERVATIVE/Bottles	SAMPLING	SAMPL	e collect re/Time	QC Type
MC81X6	Soil (>12")/ David Michailofv	2	ICP Sb, As (14)	/ 006-322 (loe Only) (1)	WH2-81	S: 09/22	2/2008 12:20	-
MC81X7	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	/ 006-323 (lçe Only) (1)	WH5-9	S: 09/22	2/2008 14:44	-
MC81X8	Soil (>12*)/ David Michallof	2	ICP Sb, As (14)	/ 006-324 (Ice Only) (1)	WH5-33	S: 09/22	2/2008 14:52	-

							0, 00,000 14.02	
MC81X9	Soil (>12")/ David Michailof	2	ICP Sb, As (14)	1	006-325 (Ice Only) (1)	BW1-21	S: 09/22/2008 16:10	-
MC81Y0	Soil (>12")/ David Michallof	2	ICP Sb, As (14)	./	/ 006-326 (loe Only) (1)	BW1-33	S: 09/22/2008 16:15	-
MC81Y1	Soil (>12")/ David Michailof	2	TM/Hg (14)	J	006-327 (Ice Oniy) (1)	BW1-9	S: 09/22/2008 16:05	-

### Tucid 10-10-08 grs MC0050 TMXH9

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/Me	dium Type/Designate : Composite = C, Grab = G, Both = B	Shipment lced?
ICP Sb, As = ICP Sb, J	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.

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 Labo Inorganic Traffic Repo		Reference Ca Client No:	R			
Region: Project Code:	3 CT4356	Date Shipped: Carrier Name:	9/25/2008 FedEx	Chain of Custo	dy Record	Sampler Signature:	
CERCLIS ID:		Airbill:	792113123305	Relinquished By	(Date/Time)	Received By	(Date/Time)
Spill ID:	AE2	Shipped to:	Bonner Analytical Testing Co.	1	· · · ·		
Site Name / City/State:	37823 - Price Battery OU2 - 092008		2703 Oak Grove Road Hattlesburg MS 39402	2			·····
Project Leader:	PA Lucinda Pype		6012642854	3			· · · · · · · · · · · · · · · · · · ·
Action:				4			
Sampling Co:	CDM .					_	

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING	SAMPLE COLLECT DATE/TIME	QC Туре
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	1CP 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 (loe Only)(1)	BW8-9	S: 09/24/2008 08:20	-

I rec \$ 10.10.08 975 Thirty MC0050

Shipment for Case Complete?	Sample (s) to be used for laboratory GC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
N	· ·		
Analysis Key:	Concentration : L = Low, M = Medium, H = High, L/M = Low/Me	idium <b>Type/Designate :</b> 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.

Conter Dr. Chantilly VA 20151-3819: Phone 703/818-4200; Fax 703/818-4602; e-Mail f2lite@fedcsc.com

	USEPA Contract L Inorganic Traffic R	aboratory F	Program ain of Custody Record		Reference Case: 37823 Client No:	R
Region: Project Code:	3 CT4356	Date Shipper Carrier Name	d: 9/25/2008 9: FedEx	Chain of Custod	y Record Sampler Signature:	
CERCLISID:		Airbiil:	792113123305	Relinquished By	(Date/Time) Received By	(Date/Time)
Spill ID: Site Name / City/State:	AE2 37823 - Price Battery OU2 - 092008 PA	Shipped to:	Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	1 2		••••
Action: Sampling Co:	CDM			4		
n						
INORGANIC SAMPLE No.	MATRIX/ T SAMPLER	YPE ANALYS TURNARO	IS/ TAG No.J UND 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 Oniy) (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 (lce Only) (1)	MP41-81	S: 09/18/2008 11:55	-
Due	: \$ 10.10-08 JTS TA	M& Hg MCOO.	50	· · · · · · · · · · · · · · · · · · ·		
Shipment for Case Complete?	e Sample (s) to be used for lab	oratory QC:,	Additional Sampler Signature (s):	÷	Chain Of Custody Seal Number	:
Analysis Key:	Concentration: L = Low, M = Me	ledium, H = High, L/M = Lo	w/Medium Type/Designate : Comp	posite = C, Grab = G, Both = B	Shipment Iced?	· · · · · · · · · · · · · · · · · · ·
iCP Sb. As = iCP S	b. As, Pb, TM/Hg = CLP TAL Total Metals/	/HG >			•	

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### COC Number : 3-594095470-092508-0001

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

FORMS II Lite Help Desk, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602; e-Maii f2lite@fedcsc.com

# U.S. EPA Region III Analytical Request Form Revision 10.06

ASOABU	SEONLY
RAS#   CT4356	Analytical TAT
DAS#	111
NSF#	1 114

### 37823

Date: 25 August 20	Date: 25 August 2008 Site Activity: RI/FS Oversight											
Site Name: Price Battery Street Address: 251 Grand S							Street					
City: Hamburg		State	e: P	A	Latitude:				Longitude	:	-	
Program: Superfund		Acc	et. #: 20	008 T03 🕅 302DD2C	A3E2	3D02		CERCLIS	#: PA	N000305679		
Site ID: N/A	· · · · · · · · · · · · · · · · · · ·	Spil	II ID: N	N/A Operable Unit: 2								
Site Specific QA Plan Submitted: No Sys Title: Price Batter			rice Battery Operabl	ble Unit 2 RI/FS Oversight Draft SMP Date Approved: 5/12/0			/12/08					
EPA Project Leader: John Banks Phone			#: 215-814-3214	Ce	ll Phone #:	_			E-mail: banks.john-d@epa.gov			
Request Preparer: Ar	idrea Soo		Phone	#: 610 293 0450	Ce	ll Phone #: 610-3	304-	-0803		E-mail: soo	ac@cdm.com	
Site Leader: Lucinda	Pype.		Phone	#: 717-560-7500	Ce	Il Phone #:				E-mail: pyp	elj@cdm.com	
Contractor: CDM			T	EPA CO/PO: Melis	sa Hoffi	man						
#Samples 34	Matrix: soil	soil Parameter: Lead, Antimony, and						Bon	NER	Method: IL	M05.4 ICP-AES	2818
#Samples 1	Matrix: soil		_	Parameter: ICP metals + Hg				/	Method: IL	M05.4 ICP-AES	28184	
#Samples 10	Matrix: soil	Parameter: TCL V			C			Shi	alu	Method: SO	DM01.2, low soil	28186
#Samples 10	Matrix: soil	Parameter: TCL S'			70C			1	1	Method: SO	DM01.2, low soil	28187
#Samples 2	Matrix: soil	Parameter: TCL P(			В				/	Method: SO	DM01.2	28185
#Samples 2	Matrix: water non-potable Parameter: ICP Me			tals + H	lg (Total)		Bon	nes	Method: IL	M05.4 ICP-AES	1 25185	
#Samples 2	Matrix: water non-potable Parameter: ICP Me			tals + F	lg (Dissolved)		V	,	Method: II	M05.4 ICP-AES		
#Samples 2	Matrix: water non-potat	ile		Parameter: TCL VC	C .			Shia	lu	Method: SO	DM01.2, trace water	2-8:18
#Samples 2	Matrix: water non-potal	le		Parameter: TCL SV	70C			V		Method: SO	DM01.2, low water	28191
Ship Date From: 9/08	3/2008 (9/12) Ship D	ate To	o: 10/3	1/2008	Org. V	alidation Level N	M3			Inorg. Va	lidation Level IM2	<u> </u>
Unvalidated Data Rec	uested: 🗌 No 🛛 Yes	If Y	les, TA	T Needed: 🗌 14 da	ays 🛛	7days 🗌 72hrs	s [	_] 48hrs	🗌 24I	rs 🗌 Other	(Specify) + 3 days f	or CADRE
Validatêd Data Packa	ge Due: 🗌 42 days 🗌	30 day	/s	21days 🔲 14 days	s 🛛	Other (Specify) 2	28 d	ays	A	HOT 1	4/8/4	
Electronic Data Deliv	erables Required: 🔲 No	X Ye	'es (	EDDs will be provid	led in R	egion 3 EDD For	rmat	t)		/	1/	
Special Instructions:	The unvalidated data is re-	luestec	d via Sl	MO/ESAT – 7 days a	analytic	al TAT + 3 days t	for	complian	ice revi	ew = 10 day:	s at no additional cost.	Please note that
we will be adopting the attached PDF file in T	e CLP methods, SOM01.2 Table 1a under "RL" If the	and II	LM05.4	4 in place of the PRP	P's SW8	46 methods listed	d in	the attacl	hed PD	F file. Repo	rting limits required and drea Soo immediately	re listed in the
sooaca-cdm.com or (	510)304-0803. Please send	unval	lidated	EDDs and validated	l data pa	ckages, including	g ex	cel and d	atabase	e-ready formation	ats to Andrea Soo (soo	ac(acdm.com)
and Nancy Forman (F	ormanNA(ä.edm.com), and	i Jonah	h Jacks	on (JacksonJM@cdn	n.com)	when available.	Qua	antitation	limits	are provided	in the PDF file that wa	as attached to
this lab request.	this lab request.											

# Appendix D

# Laboratory Case Narrative

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

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: Usoclas	Title: President

COVER PAGE

## **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 Réceipt:

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	<u>QC</u>
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 330-02 EPA Sample # / Lab ID 1353 Date & Time 1000 g (0.100 L) Metals: µg/L 100 % 1 mg (Analyte A (1.00 g) 1 kg 1000 µg Date & Time 1462 µg/L (0.100 L) 100 % Hg: 1000 g 1 mg 8% 1000 µg (0.20 g) 1 kg Authorized by Daniel Antrim Document Control Officer

### Bonner Analytical Testing Company Total Solids

SDG No:	MC0	0050	-	Case No.:	378	323		Batch No.:			
Date Began: Date Finished:	09/2	29/08 30/08	- Ti	Time Began: me Finished	13: 08:	58 20	Temperati Temperati	ature Began: ure Finished:	<u>10</u> 10	2.0 4.5	
EPA Sample ID	MC	0050	MC81Y1	MC8201	MC8204						
Laboratory ID	08093	330-01	0809330-02	0809330-03	0809330-04				<u> </u>		
Pan ID	.1	11	2	3	4	5	<u>6</u>	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%	#DJV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
% RSD	1.5	59%	$\geq$	$\geq \leq$	$\geq$	$\geq$	$\geq$	$\geq$	$\geq \leq$	$\geq \leq$	$\geq$
	·	£	· · · · · · · · · · · · ·	r		·····		·	<u> </u>	r	1
Sample ID		<u> </u>						·	<u> </u>	· · · · · · · · · · · · · · · · · · ·	- <u>-</u>
Laboratory ID									<u></u>		1
Pan ID	11	12		14	15	16	17		19	20	
Pan Weight						-					
Pan + Sample (Initial)		<u> </u>					<i>2</i>		·	·	
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

BAK

CMB

Analyst:

Supervisor:

Date: 9/29/2008 Date: 9/30/2008 Date: 10/6/2008

#### **Bethany Whitehead**

From:	Walsh, Colin [cwalsh20@fedcsc.com]
Sent:	Friday, September 26, 2008 11:38 AM
То:	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 | <u>cwalsh20@fedcsc.com</u> | <u>www.csc.com</u>

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

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

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 MARTIA 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 L Inorganic Data Reviewer

Mahboobeh Mecanic W

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 ( $\leq 5X$ ) 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,  $\pm 2$ XCRQL) 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.

### <u>NOTES</u>

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 reanalyzed 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.

1.11

Table 1ASummary of qualifiers on data summary forms after data validationTable 1BCodes used in comments column of Table 1AAppendix AGlossary of Data Qualifier CodesAppendix BData Summary Form(s)Appendix CChain of Custody Records

Appendix D Laboratory Case Narrative

· )

DCN: 37823\_MC0068

AR302814

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

### Case 37823, SDG MC0068

ANALYTE	SAMPLES AFFECTED	POSITIVE <u>VALUES</u>	NON- DETECTED <u>VALUES</u>	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%)</crql 
As	All samples	Ĺ		Low	MSL (72%)
Pb	All samples	J	• .		DUP (38%) ISD (23%)

# TABLE 1ASUMMARY OF QUALIFIERS ON DATA SUMMARYFORM AFTER DATA VALIDATION

### Case 37823, SDG MC8200

<u>ANALYTE</u>	SAMPLES AFFECTED	POSITIVE <u>VALUES</u>	NON- DETECTED <u>VALUES</u>	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%)</crql 
Pb	All samples	J			ISD (16%)

### 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< td=""><td>=</td><td>Reported results are greater than MDL but less than CRQL and are considered estimated.</td></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, $\pm 2XCRQL$ ) [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 $\leq 5X$ the blank concentration may be biased high.

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### 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: INORGÁNIC

Case #: 37823 Site : Lab. :

SDG : MC0068 PRICE BATTERY BONNER

Number of Soil Samples: 20 Number of Water Samples: 0

Sample Number :	ample Number :		MC0068		MC0070		MC0071			MC81W9	
Sampling Location :		WH13-18		WH7-09	WH7-09		WH2-33			WH12-33	
Matrix :		Soll	25	Soil		Soil		Soil		Soil	
Units :		mg/Kg	с.,	mg/Kg		mg/Kg		mg/Kg	ų	mg/Kg	
Date Sampled :	· .	9/19/2008		9/22/2008	3	9/22/2008	3.	9/19/2008		9/19/2008	
Time Sampled :	ime Sampled :		11:20		10:30			10:25		10:45	
%Solids :		85.3		95,6		87.7		86.1	1.1	84.9	
Dilution Factor :		1.0		1.0	1.0		1.0/5.0			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	ų	308	J	9860 +	J	23200 +	J	24.2	J.

Sample Number :		MC81X0		MC81X1	MC81X1			MC81X3		MC81X4	
Sampling Location :	$z \in \mathbb{C}$	WH13-9		ेWH13-33		WH7-33		WH7-57		WH2-09	
Matrix :		Soil		Soll		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		9/19/2008		9/19/200	8	9/22/2008	3 ·	9/22/2008		9/22/2008	
Time Sampled :		11:15	· · · ·	11:25		10:40		10:50		11:35	
%Sollds:		88.6		86.8		84.0		90.7		90.7	
Dilution Factor :	· .	1.0/3.0		1.0	:	i <b>1.0</b>		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	Ŀ	3.2	L	3.7	14	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

#### DATA SUMMARY FORM: INORGANIC

Case #: 37823	
Site :	
Lab. :	

SDG : MC0068 PRICE BATTERY BONNER

Sample Number :	mber: MC8			MC81X6	Å.	MC81X7		MC81X8		MC81X9	
Sampling Location :	1.56	WH2-57		WH2-81	WH2-81		WH5-9		.:	BW1-21	
Matrix :		Soil .		Soil		Soil		Soil		Soli	
Units :	1 I	mg/Kg n		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :	100	9/22/2008	9/22/200	в.	9/22/200	8	9/22/2008	·	9/22/2008		
Time Sampled :		12:10	1	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	- X. 2	.1.0	]	1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6	281	L	1.1	J	3.1	J	4.0	J	54.4	Ĺ
ARSENIC	1	61.2 L		5.7	5.7 L		4.9 L.		L	13.6	L
*LEAD	1	39400 +	J	71.0	J	1120	J	2090	J	1720	J

Sample Number :	e e d	MC81Y0		MC81Y2	·	MC81Y3		MC81Z8	1.11	MC81Z9	
Sampling Location :		BW1-33		WH5-57	1	WH5-81		BW5-21	: "	BW5-33	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :	N S	mg/Kg		mg/Kg	•	mg/Kg		mg/Kg		mg/Kg	
Date Sampled :	• ·	9/22/2008		9/22/200	3	9/22/200	<b>B</b> ·	9/23/2008	*	9/23/2008	
Time Sampled :		16:15		15:10	5 L J	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	Ŀ	6.2	L	11.4	L
*LEAD	1	127 .	J	1780	J	454	J	1290	J	362	J

CRQL = Contract Required Quantitation Limit

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

"+" = Result reported from the diluted analysis

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#### DATA SUMMARY FORM: INORGANIC

Page	3	of	З	
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Case	#:	37823
Site :		
lah ·		

SDG : MC8200 PRICE BATTERY BONNER Number of Soll Samples: 11 Number of Water Samples: 0

	*******											
Sample Number :		MC8200		MC8202	MC8202		MC8203		MC8205		MC8206	
Sampling Location :		BW5-9	BW5-9		BW8-21			MP41-33	8	MP41-57		
Matrix :		Soil		Soil		Soil	•	Soil		Soil		
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		
Date Sampled :	e Sampled : 9/23/2008		3	9/24/2008		9/24/2008		9/18/2008		9/18/2008		
Time Sampled :	-	11:00		08:30		08:40	1	11:41		11:49		
%Solids :		89.4		80.3	80.3		78.5			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.A	L.	0.56	J	0.54	J	0.46	J	0.77	Ĵ	
ARSENIC	1	5.3		5.3		4.8		2.9		2.9		
*LEAD		01060	٠J	80.7	J	80.8	сĴ,	28.0	J	10.6	Ű	

Sample Number :	ample Number :		******	MC8208		MC8209		MC8210	<i>iddeeddoro</i> o	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 :		9/18/200	B	9/18/2008	3	9/18/2008		9/18/2008	3	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	В	25.3	L	5.9	J	0.56	В	2.5	J
ARSENIC		2.1		7.0		49.9		1.9			3. S. A.
*LEAD	1	9.7	J	2440	J	725	J	22.5	J	42.4	J

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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 F	-lag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ANTIMONY	6	2.6	J								
ARSENIC	1	105									
*LEAD	1	26.3	J.							i dina di u di	

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 Labo Inorganic Traffic Repo	ratory Pro ort & Chain		Reference Ca Client No:	R		
Region: Project Code:	3 CT4356	Date Shipped: Carrier Name:	9/25/2008 FedEx	Chain of Custod	ly Record	Sampler Signature:	
CERCLIS ID:		Airbill:	792113123305	Relinquished By	(Date/Time)	Received By	(Date/Time)
Spill ID:	AE2	Shipped to:	Bonner Analytical Testing Co.	1			
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA		2703 Oak Grove Road Hattiesburg MS 39402	2			
Project Leader:	Lucinda Pype	1	8012042854	3			
Action:				4	- <u></u>		
Sampling Co:	CDM						
		· · · · ·	······································		<b></b>	· · · · · ·	

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	\$: 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 Sample (s) to be used for laboratory QC: Complete?		Additional Sampler Signature (s):	Chain Of Custody Seal Number :		
N					
Analysis Key:	Concentration : L = Low, M = Medium, H = High, L/M = Low/Me	dium <b>Type/Designate :</b> Composite = C, Grab = G, Both = B	Shipment Iced?		
ICP Sb, As = ICP Sb,	As, Pb, TM/Hg = CLP TAL Total Metais/HG		· · · · ·		

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

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Region:     3     Date Shipped:     9/25/2008     Chain of Custody Record     Sampler Signature:       Project Code:     CT4356     Carrier Name:     FedEx     Relinquished By     (Date/Time)     Received By     (Date/Time)       CERCLIS ID:     AE2     Shipped to:     Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 FA     1	·. ·	USEPA Contract Labo Inorganic Traffic Repo		Reference Ca Client No:	R			
	Region: Project Code: Account Code: CERCLIS ID: Spill ID: Site Name / City/State: Project Leader: Action: Sampling Co:	3 CT4356 AE2 37823 - Price Battery OU2 - 092008 PA Lucinda Pype CDM	Date Shipped: Carrier Name: Airbill: Shipped to:	9/25/2008 FedEx 792113123305 Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	Chain of Custor Relinquished By 1 2 3 4	ty Record (Date/Time)	Sampier Signature: Received By	(Date/Time)

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No J 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	1CP 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/M	edium Type/Designate : Composite = C, Grab = G, Both = B	Shipment Iced?		
ICP Sb, As = ICP Sb,	As, Pb, TM/Hg = CLP TAL Total Metals/HG				

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AR302826<sub>Page 2 of 6</sub>

	USEPA Contract Lab Inorganic Traffic Rep	oratory Pro ort & Chain	gram of Custody Record	1	· · ·	Reference Ca Client No:	se: 37823	R
Region: Project Code:	3 CT4356	Date Shipped: Carrier Name:	9/25/2008 FedEx		Chain of Custo	dy Record	Sampler Signature:	
Account Code: CERCLIS ID:		Airbill:	792113123305		Relinquished By	(Date/Time)	Received By	(Date/Time)
Spill ID:	AE2	Shipped to:	Bonner Analytical Testing Co.		1			
Site Name / City/State:	37823 - Price Battery OU2 - 092008		Hattiesburg MS 39402	~	2			
Project Leader.	Lucinda Pype		6012642854	· -	3	- -		
Action:				~	4			
Sampung Co:	CDM		<u> </u>			<u></u>	·	

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 Oniy) (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)	005-326 (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/Me	dium <b>Type/Designate :</b> Composite = C, Grab = G, Both = B	Shipment Iced?		
ICP Sb, As = ICP Sb,	As, Pb, TM/Hg = CLP TAL Total Metals/HG				
	• 1.				

### COC Number : 3-594095470-092508-0001

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	Inorganic Traffic Re	port & Chain	of Custody Record	····	Client No:		<u> </u>
Region: Project Code:	3 CT4356	Date Shipped: Carrier Name:	9/25/2008 FedEx	Chain of Custor	dy Record	Sampler Signature:	÷
Account Code:		Airbill:	792113123305	Relinquished By	(Date/Time)	Received By	(Date/Time)
Spill ID:	AE2	Shipped to:	Bonner Analytical Testing Co.	1 .			
Site Name / City/State:	37823 - Price Battery OU2 - 092008		2703 Oak Grove Road Hattiesburg MS 39402	2			
Project Leader:	PA Lucinda Pvpe		6012642854	3.	·		
Action:				4	<u></u>		······································
Sampling Co:	CDM						
	· ····					· · · ·	
INORGANIC SAMPLE No.	MATRIX/ TYP SAMPLER TYP	E ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING	SAMPL DA	E COLLECT	QC Type

MC81Y2	Soil (>12")/ David Michailof	· 2	ICP Sb. As (14)	006-328 (loe 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	_ *	

Shipment for Case Complete? N	Sample (s) to be used for laboratory QC:	Additional Sampler Signal	ture (s):	Chain Of Custody Seal Num	ber :
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	<u> </u>			
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PR provides preliminary results. Requests for preliminary results will increase analytical costs.

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tana si ta	USEPA Contract Inorganic Traffic	Labo Rep	oratory Prog ort & Chain		Reference Case: 37823 Client No:				
tegion: Project Code: Account Code:	3 CT4356		Date Shipped: Carrier Name: Airbill:	9/25/2008 FedEx 792113123305	Chain of Custo Relinquished By	(Date/Time)	Sampler Signature: Received By	(Date/Time	
pill ID: ite Name /	AE2 37823 - Price Battery OU2 - 092008		Shipped to:	Bonner Analytical Testing Co. 2703 Oak Grove Road	1 2			•	
roject Leader. ction: ampling Co:	ate: PA :t Leader: Lucinda Pype :			6012642854	3	······································			
· · · · · · · · · · · · · · · · · · ·						* 			
INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPL DA	E COLLECT TE/TIME	QC Type	
INORGANIC SAMPLE No. 8202	MATRIX/ SAMPLER Soil (>12") David Michailof	<b>TYPE</b>	ANALYSIS/ TURNAROUND ICP Sb, As (14)	TAG No./ PRESERVATIVE/Bottles 005-377 (Ice Only) (1)	SAMPLING LOCATION BW8-21	SAMPL DA S: 09/24	E COLLECT ГЕ/ТІМЕ 1/2008 08:30	QC Type –	
INORGANIC SAMPLE No. 28202 28203	MATRIX/ SAMPLER Soil (>12")/ David Michailof Soil (>12")/ David Michailof	2 2 2	ANALYSIS/ TURNAROUND ICP Sb, As (14) ICP Sb, As (14)	TAG No./ PRESERVATIVE/Bottles 005-377 (Ice Only) (1) 005-378 (Ice Only) (1)	SAMPLING LOCATION BW8-21 BW8-33	SAMPL DA S: 09/24 S: 09/24	E COLLECT TE/TIME 4/2008 08:30	QC Type -	
INORGANIC SAMPLE No. C8202 C8203 C8204	MATRIX/ SAMPLER Soil (>12")/ David Michailof Soil (>12")/ David Michailof Soil (>12")/ David Michailof	<b>TYPE</b> 2 2 2	ANALYSIS/ TURNAROUND ICP Sb, As (14) ICP Sb, As (14) TM/Hg (14)	TAG No./ PRESERVATIVE/Bottles           005-377 (Ice Only) (1)           005-378 (Ice Only) (1)           005-379 (Ice Only) (1)	SAMPLING LOCATION BW8-21 BW8-33 PL3-9	SAMPL DA S: 09/24 S: 09/24 S: 09/24	E COLLECT FE/TIME 4/2008 08:30 4/2008 08:40	QC Type -	
INORGANIC SAMPLE No. 8202 8203 8204 8205	MATRIX/ SAMPLER Soil (>12")/ David Michailof Soil (>12")/ David Michailof Soil (>12")/ David Michailof Soil (>12")/ David Michailof	2 2 2 2 2	ANALYSIS/ TURNAROUND ICP Sb, As (14) ICP Sb, As (14) TM/Hg (14) ICP Sb, As (14)	TAG No./ PRESERVATIVE/Bottles           005-377 (Ice Only) (1)           005-378 (Ice Only) (1)           005-379 (Ice Only) (1)           006-385 (Ice Only) (1)	SAMPLING LOCATION BW8-21 BW8-33 PL3-9 MP41-33	SAMPL DA S: 09/24 S: 09/24 S: 09/24 S: 09/18	E COLLECT FE/TIME 4/2008 08:30 4/2008 08:40 4/2008 09:30 3/2008 11:41	QC Type - -	
INORGANIC SAMPLE No. 28202 28203 28204 8205 8206	MATRIX/ SAMPLER Soil (>12")/ David Michailof Soil (>12")/ David Michailof Soil (>12")/ David Michailof Soil (>12")/ David Michailof Soil (>12")/ David Michailof	<b>TYPE</b> 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	ANALYSIS/ TURNAROUND ICP Sb, As (14) ICP Sb, As (14) TM/Hg (14) ICP Sb, As (14) ICP Sb, As (14)	TAG No./ PRESERVATIVE/Bottles           005-377 (Ice Only) (1)           005-378 (Ice Only) (1)           005-379 (Ice Only) (1)           006-385 (Ice Only) (1)           006-386 (Ice Only) (1)	SAMPLING LOCATION BW8-21 BW8-33 PL3-9 MP41-33 MP41-57	SAMPL DA S: 09/24 S: 09/24 S: 09/24 S: 09/24 S: 09/24 S: 09/18	E COLLECT TE/TIME 4/2008 08:30 4/2008 08:40 4/2008 09:30 3/2008 11:41 3/2008 11:49	QC Type - - -	

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
Analysis Key:	Concentration : L = Low, M = Medium, H = High, L/M = Low/Me	dium <b>Type/Designate :</b> Composite = C, Grab = G, Both = B	Shipment Iced?
ICP Sb, As = ICP Sb,	As, Pb, TM/Hg = CLP TAL Total Metais/HG		

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

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· .	USEPA Contract Labo Inorganic Traffic Repo	μ	<b>Reference C</b> a Client No:	R			
Region: Project Code:	3 CT4356	Date Shipped: Carrier Name:	9/25/2008 FedEx	Chain of Custor	ly Record	Sampler Signature:	
CERCLISID:		Airbill:	792113123305	Relinquished By	(Date/Time)	Received By	(Date/Time)
Spill ID:	AE2	Shipped to:	Bonner Analytical Testing Co.	1 .			
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA		2703 Oak Grove Road Hattiesburg MS 39402	2			
Project Leader.	Lucinda Pype	· · ·	6012642854	3	· · ·	· ·	· · ·
Action:				4			
Sampling Co:	CDM						
		- <b>1</b>		·			

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:	Additi	onal Sampler Signati	ire (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	· · · · · ·			· · · · · · · · · · · · · · · · · · ·			
	· · · · · · · · · · · · · · · · · · ·							

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

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# U.S. EPA Region III Analytical Request Form Revision 10.06



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Date: 25 August 200	18	Site Activ	ity: R	RI/FS	Oversight					<u> </u>				
Site Name: Price Batte	ery					Str	eet Address: 251 Gran	nd Str	reet			<u> </u>		
City: Hamburg			State	e: I	A Latitude:		Long	Longitude:						
Program: Superfund			Acct	t. #: 2	008 T03 🕅 302DD2	C A	3E2BD02	CE	RCLIS #:	PAN00030	5679			
Site ID: N/A Spill ID: N/A			N/A			Op	erable Uni	t: 2						
Site Specific QA Plan Submitted: 🗌 No 🖾 Yes Title: Price Batter			Price Battery Operal	ole U	nit 2 RI/FS Oversight	t Dra	ft SMP			Date Approved: 5/	12/08			
EPA Project Leader: John Banks Phone			e#: 215-814-3214		Cell Phone #:			E-mail	: banl	ks.john-d@epa.gov				
Request Preparer: An	drea Soo			Phon	e#: 610 293 0450		Cell Phone #: 610-30	04-08	303	E-mail	: 5008	ac@cdm.com		
Site Leader: Lucinda	Руре			Phon	e#: 717-560-7500		Cell Phone #:			E-mail	: рур	elj@cdm.com		
Contractor: CDM EPA					EPA CO/PO: Mel	isa H	loffman	_						
#Samples 34	Samples 34 Matrix: soil Parameter: Lead, A					Anti	mony, and Arsenic		Bonne	e_ Metho	d: IL	M05.4 ICP-AES	2.1	8183
#Samples 1	Matrix: soil Parameter: ICP m				etals	+ Hg		V	Metho	d: IL	M05.4 ICP-AES	25	3184	
#Samples 10	Matrix: soil Parameter: TCL V				OC			Sheale	Metho	d: SC	M01.2, low soil	_28	184_	
#Samples 10	Matrix: soil				Parameter: TCL S	voc	C			Metho	d: SC	M01.2, low soil	.25	8187
#Samples 2	Matrix: soil	-			Parameter: TCL P	СВ				Metho	d: SC	)M01.2	.2 §	8158
#Samples 2	Matrix: water	non-potable	e		Parameter: ICP M	etals	+ Hg (Total)		Bonne	e Metho	d: IL	M05.4 ICP-AES	$\rightarrow 2i$	8185
#Samples 2	Matrix: water	non-potabl	e		Parameter: ICP M	etals	+ Hg (Dissolved)		V	Metho	d: IL	M05.4 ICP-AES	$\sum$	
#Samples 2	Matrix: water	non-potabl	e		Parameter: TCL V	OC			Shealu	Metho	d: SC	M01.2, trace water	<u></u> 2	-8189
#Samples 2	Matrix: water	non-potable	e		Parameter: TCL S	voc	<u></u>		VI	Metho	d: SC	M01.2, low water	,2	8190
Ship Date From: 9/08	12008 (9/12)	Ship Da	te To:	: 10/3	31/2008	Org	g. Validation Level M	<b>/</b> 13		Inor	g. Va	lidation Level IM2	<u></u>	
Unvalidated Data Req	uested: 🗌 No	🛛 Yes	If Y	es, T	AT Needed: 🗌 14 d	tays	🛛 7days 🔲 72hrs		48hrs 🗌	24hrs 🗌 (	Other	(Specify) + 3 days for	or CADRI	E Est
Validated Data Packag	ge Due: 🗌 42	days 🔲 3	0 day	rs 🗌	] 21days 🗌 14 da	ys	Other (Specify) 28	8 day	'S	7121		4/8/4		
Electronic Data Delive	rables Required	: 🗌 No	X Ye	es	(EDDs will be provi	ded	in Region 3 EDD Form	mat)				·/		
Special Instructions: we will be adopting th attached PDF file in Tr sooacta edm.com or (6 and Nancy Forman (Fo this lab request.	Electronic Data Deliverables Required: $\square$ No $\boxtimes$ 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 <u>sooac(a edm.com</u> or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo ( <u>sooac(a edm.com</u> )) and Nancy Forman ( <u>FormanNA(a edm.com</u> ), and Jonah Jackson (JacksonJM@cdm.com) when available. Quantitation limits are provided in the PDF file that was attached to- this lab request													

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# Appendix D

# Laboratory Case Narrative

COVER PAGE

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Lab Name: Bo	nner Analytical Testi	.ng Con	tract: EPW06	055	
Lab Code: BC	ONNER Case No.: 37823	NRAS No.:	SD	G No.: 1	MC0068
SOW No.: 11	M05.4				
	EPA SAMPLE NO.		Lab Samp	le ID:	
	MC0068		080933	1-01	
	MC0068D		0809331	-01DUP	
	MC0068S		0809331	-01MS	
	MC0070		080933	1-02	
	MC0071		080933	1-03	r
	MC81W8		080933	31-04	
÷ ,	MC81W9		080933	1-05	•
	MC81X0		080933	1-06	
	MC81X1		080933	1-07	*
	MC81X2		080933	1-08	
	MC81X3		080933	1-09	
	MC81X4		080933	1-10	
	MC81X5		080933	1-11	
	MC81X6		080933	1-12	
	MC81X7		080933	1-13	
	MC81X8		080933	1-14	
1	MC81X9		080933	1-15	
• 	MC81Y0	•	080933	1-16	
	MC81Y2		080933	1-17	
	MC81Y3		080933	1-18	
	MC8128		080933	1-19	
	MC8129		080933	1-20	
		et al anno 1997. Tair	• •		
Were ICP-AES corrections	and ICP interelement applied?	:	(Yes/No)	ICP-AES Yes	S ICP-MS Yes
Were ICP-AES applied?	and ICP background o	corrections	(Yes/No) <u>Yes</u>		Yes
If yes, w applicat:	were raw data generat ion of background cor	ed before rections?	(Yes/No)	No	No
Comments:					1

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.

Date: 10/09/08 Title: President	Signature:	Neth	Name: <u>Brandon G. Beck For Chris Bonn</u>	er_
	Date:	10/09/08	Title: President	

COVER PAGE

### **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:

<u>QC</u>
MC0050
MC0068
MC8200

Resolution: In accordance with previous direction from Region 3, the laboratory will select a sample for laboratory OC 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 CROL 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:

-006 EPA Sample # Lab ID 2008@1714 Date & Time Metals: (0.100 L) 100 % 1000 g 1 mg (Analyte Sh (1.00 g) 1 kg 1000 µg Authorized by

**Daniel** Antrim **Document Control Officer** 

### Bonner Analytical Testing Company Total Solids

SDG No:	MC	0068	-	Case No.:	378	823		Batch No.:		8100206	
Date Began: Date Finished:	10/0 10/0	)1/08 )2/08	- - Ti	Time Began: ime Finished	16 10	:00 :25	Temperati Temperati	ature Began: ure Finished:	<u>10</u> 10	3.0 4.0	
EPA Sample ID	MC	0068	MC0070	MC0071	MC81W8	MC81W9	MC81X0	MC81X1	MC81X2	MC81X3	MC81X4
Laboratory ID	08093	331-01	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	1.7	2%	$\geq$	$\geq \leq$	$\geq$	$\geq \leq$	$\geq$	$\geq \leq$	$\geq$	$\geq \leq$	$\geq$
Sample ID	MC81X5	MCRIXE	MC81X7	MCRIVE	MC91V9	MC81V0	MC91V2	MC81V3	MC9178	MC8179	ĺ
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	

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AR302835

### **Bethany Whitehead**

From	Waleh	Colin	[oweleh20/	Madree com
riom.	walen,	CONT	ICWAISIIZU	wieuusu.comi

- 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, Chantiliy, VA 20151 Civil Division | (p) 703-818-4544 | (f) 703-818-4602 | <u>cwalsh20@fedcsc.com</u> | <u>www.csc.com</u>

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

į**š**. Bonner Analytical Testing Company 134 04266 Corrective Action Date: 10/18 Topic: MCOUB Lature of Problem: 1. Matrix Aprilie Youlul for te, Ph. 5 Sp. 2.) Samplin McOO71, McBinls, McBIKO, MCBIKG, MCBIKG, MULT: above the Nature of Problem: linar range for lind. Action Requested: NO. 1 New Sample Requested: YES 2 Retest or Reanalysis Necessary: YES NO 3 Other Action: Submitter Date: 10 9 Signature: Corrective Action Taken: 1. Post spili was analyped a dx CRQL for Sh & dx Ilw sulling for As & Pb (18 3 1002 unpectively) YES NO Was the problem resolved: Responder 7 AR302837 RO aha Date: Signature:

#### USEPA - CLP

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Name:	Bonner Analytical Testing	Contr	act: EPW06055	
Code:	BONNER Case No.: 37823	NRAS No.:	SDG No.:	MC8200
No.:	ILM05.4			
	EPA SAMPLE NO.		Lab Sample ID:	
	MC8200		0809332-01	
	MC8200D		0809332-01DUP	•
	MC8200S	·	0809332-01MS	-
	MC8202	·	0809332-02	
	MC8203		0809332-03	-
<u>ب</u>	MC8205		0809332-04	-
<i>,</i>	MC8206		0809332-05	
	MC8207		0809332-06	
	MC8208		0809332-07	
	MC8209		0809332-08	_
	MC8210		0809332-09	
	MC8211		0809332-10	
	MC8212		0809332-11	•
	· · · · · · · · · · · · · · · · · · ·			. ···
				1.1
	· .			12
	Name: Code: No.:	Name: Bonner Analytical Testing Code: BONNER Case No.: 37823 No.: ILM05.4 EPA SAMPLE NO. MC82000 MC82000 MC82003 MC8203 MC8203 MC8205 MC8206 MC8207 MC8206 MC8207 MC8208 MC8209 MC8210 MC8211 MC8212	Name: Bonner Analytical Testing Contr Code: BONNER Case No.: 37823 NRAS No.: No.: ILM05.4 EPA SAMPLE NO. <u>MC82000</u> MC82005 MC8202 MC8203 MC8205 MC8206 MC8207 MC8208 MC8210 MC8211 MC8212	Name:         Bonner Analytical Testing         Contract:         EFW06055           Code:         BONNER Case No.:         37823         NRAS No.:         SDG No.:           No.:         ILM05.4         EPA SAMPLE NO.         Lab Sample ID:         0809332-01           MC8200         0809332-01DUP         0809332-01BUP         0809332-02           MC82003         0809332-02         0809332-02           MC8203         0809332-04         0809332-05           MC8206         0809332-05         0809332-05           MC8207         0809332-06         0809332-07           MC8208         0809332-08         0809332-08           MC8210         0809332-10         0809332-10           MC8211         0809332-10         0809332-11

Were ICP-AES and ICP interelement corrections applied?	(Yes/No)	ICP-AES Yes	ICP-MS 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:

<u>Pb is flagged as "E" estimated due to interferences occuring during the</u> 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: 10/09/58	Title: President	

COVER PAGE

ILM05.4

### Bonner Analytical Testing Company



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

#### **SDG NARRATIVE:**

<u>SDG Number: MC8200</u> <u>Case Number: 37823</u> <u>Contract Number: EPW06055</u>

### 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:

<u>SDG</u>	<u>QC</u>	
MC0050	MC	0050
MC0068	MC	0068
MC8200	MC	8200

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.

i kg

### CSF:

No Discrepancies

Sample Equation:

Lab ID 0809332-0	( EPA S	ample #	1082
Date & Time 9/ 30/2008	21529		
Metals: 47,276ug/L	(0.100 L)	100 %	1000 g

Metals: Int lug/L (Analyte)

(0.100 L) 100 % (1.00 g)

1 me 1000 µ

Authorized by Daniel Antrim **Document Control Officer** 

# Bonner Analytical Testing Company Total Solids

SDG No:	MC8	3200	_	Case No.:	37	823	: •	Batch No .:	<u>er - 1977</u>	····	
Date Began: Date Finished:	09/2 09/3	9/08 0/08	T	Time Began: ime Finished	12 08	::30 ::20	Temperate	ature Began: ure Finished:	10 10	2.0 4.5	• •
EPA Sample ID	МС	3200	MC8202	MC8203	MC8205	MC8206	MC8207	MC8208	MC8209	MC8210	MC8211
Laboratory ID	08093	332-01	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	2.1	0%	$\triangleright$	$\geq$	$\geq$	$\geq$	$\geq$	$\geq$	$\geq$	$\geq$	$\geq$
r		· · · · · ·	<u>.</u>					·	-		 
Sample ID	MC8212										
Laboratory ID	0809332-11					<u> </u>				and the second second	
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	. •	AS	SE		- -	Date:	9/29/	2008		

BAK

CMB

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Analyst:

Supervisor:

Date:	9/29/2008
Date:	9/30/2008

10/1/2008 Date:

	Donner Ana	iyaca resariy	Company	92
	Co	prrective Action	1	04264
Topic: <u>MC820</u> 2	, ,		Date:	32/08
Nature of Problem:	(D Matrix Spil	ce failed for S	<u>الم</u>	
······································				
Action Requested:	Poquestad:		ΝΟ	·····
2 Retest or Rea 3 Other Action:	analysis Necessary:	<b>T</b> ES	NO	
Submitter	NOT	1		0 /01/08
Signature:	<u> </u>	γ	Date/	1
Signature:	aken: <u>() Bsts</u>	ake Sbe 2X In	Jug (1.82 ppb)	· · · · · · · · · · · · · · · · · · ·
Signature:	aken: <u>() BssFs</u>	ske Sbe 2X In	Jug (182 ppb)	
Signature:	aken: <u>() Bssts</u> solved:	ake sbe at In YES	Date. /	

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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  $#: 37823 \text{ SDG} \# \acute{\textbf{C}} 0040$ ) 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

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

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 2 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

r,

- 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 "UI" 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	<u>Sample</u>
1,2-dichloroethane-d <sub>4</sub>	C81W3, C8201
benzene-d <sub>6</sub>	C81W3
toluene-d <sub>8</sub>	C81W3, C8201
trans-1,3-dichloropropene-d <sub>4</sub>	C8201
1,2-dichlorobenzene-d <sub>4</sub>	C81W3, C0070, C8201

- In the volatile fraction, DMC 1,2-dichloropropane-d<sub>6</sub> 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.

### <u>NOTES</u>

• 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.

<b>Fraction</b>	<u>Blanks</u>	Compound	Concentration	Affected Samples
Volatile	Method (VBLKB1)	Methylene chloride*	( <u>ug/Kg)</u> 2.1 J	C81W2, C81W3
	49 <sup>- 14</sup> - 1 1	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	1,1-dichloroethene	0.91 J	C0071
	(VDLKEI)	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
	en e	1,2-dichlorobenzene	0.71 J	C0070
	an a	1,2,4-trichlorobenzene	1.4 J	C0070
	Method (VBLKJ1)	Methylene chloride*	0.88 J	C8201
, se en angeler and an	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

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- 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 reanalyzed 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<sub>5</sub> 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.

<b>Fraction</b>	<u>Sample</u>	<b>Dilution</b>
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.

AR302846 .

- 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

المانية المانية المانية المانية في من المانية المانية المانية المانية (1997). - مانية من المانية المانية المانية المانية المانية المانية المانية المانية (1997). - مانية مانية المانية المانية المانية المانية المانية المانية المانية (1997).

## 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

J

### **DATA SUMMARY FORM: Volatiles**

Page 1 of 9

Case #: 37823		SDG : C0040
Site :	•	PRICE BATTERY
Lab. :		SHEALY

Number of Soil Samples: 7

Number of Water Samples : 0

Number of Sediment Samples : 0

					******		*******				
Sample Number :		C0050		C0070		C0071		C81W2		C81W3	
Sampling Location :		MP45-33		WH7-09		WH2-33		MP48-3	3	MP48-5	7
Matrix :		Soil		Soll	·	Soil		Soil		Soil	
Units :		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :		9/18/2008		9/22/200	8	9/22/200	3	9/17/200	8	9/17/200	8
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	ور الم	0.89		1.01		0.88	
Volatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Dichlorodifluoromethane	5.0		UL.								9. svetska († 19. sv Statisticka († 19. svetska († 19. sve
Chloromethane	5.0	34000	J								
Vinyi chloride	5.0		UL					2. S. C. S.			888
Bromomethane	5.0		UL								
Chlorøethane	5.Q		UL			and so a					
Trichlorofluoromethane	5.0		UL								UL
1.1-Dichloroethene	5.0	1	UL	. ? 		0.73	B				UL
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		UL								UL
Acetane	10		UL	8.4	ß	10	B	-12	B	Â.4 .	B
Carbon Disulfide	5.0 ·		UL								
Methyl acetate	5.0		UL								UL
Methylene chloride	5.0	22000	J	0.79	В			1.4	в	1.1	В
trans-1,2 Dichloroathene	5.0	Constant Sec.	UL						<u>Ж</u> .	1. S. S. A. 1. S. S.	2.48.9 S
Methyl tert-butyl ether	5.0	, ,	UL								UL
1,1-Dichlorgethane	5.0		UL.				ЩФ?				
cis-1,2-Dichloroethene	5.0		UL								
2-Butanone	10		ΫL.			4,5	B	7.4	B∛	S. S. S.	stride Stride
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.							6 A. 24 S.	
Carbon tetrachloride	5.0		UL								UL
Benzene	5.0		UI.								UL.
1,2-Dichloroethane	5.0		UL			1					ŲL
1,4 Dioxane	100		UL.		R		R		R		R×
Trichloroethene	5.0	24000	J								UL
Methyloyolohexane	5.0	1100000	L							19.9639 P	
1,2-Dichloropropane	5.0		UL								
Bromodichloromethane	5.0		UL								
cls-1,3-Dichloropropene	5.0		UL								
4-Methyl-2-pentanone	10.		UL							ŠE SU S	
Toluene	5.0	23000	J			0.55	В				UL.
trans-1 3-Diphloropropene	5.0		UL					li o se a	\$K)	State State	·

Case #: 37823	SDG : C0040
Site :	PRICE BATTERY
Lab. :	SHEALY

Sample Number :		C0050		C0070		C0071	1	C81W2	ľ	C81W3	
Sampling Location :		MP45-33 \		WH7-09		WH2-33		MP48-33		MP48-57	
Matrix :		Soil -		Soil		Soil	1.5	Soil		Soll	
Units :		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Date Sampled :		9/18/2008	1	9/22/2008	8	9/22/200	9 · 8	9/17/200	3	9/17/200	в
Time Sampled :		14:55		10:30		11:25	•	08:00		08:15	
%Moisture :		22		3.7	]	12		16		7.4	1
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			0.6.6.5					UL.
2-Hexanone	10		UL	: 11	в	5.9	В	8.5	В	5.3	В
Dibromochloromethane	5.0		UI.,			0.025					
1,2-Dibromoethane	5.0		UL								UL
Chlorobenzene	5.0		UL.		UL	0.019.9					UL
Ethylbenzene	5.0	2400000	L	0.91	в	0.63	в				UL
o-Xylene	5.0		UL,	1.2	В	0.76	B				UI.
m,p-Xylene	5.0	600000	L	. 1.2	В	0.72	В				<b>UL</b>
Styrene	5.0		UL								UL
Bromoform	5.0 ·		UL		IJ						
Isopropylbenzene	5.0	530000	L								UL.
1,1,2,2-Tetrachloroethane	5.0		UL				·				
1,3-Dichlorobenzene	6.0		UL,		UJ			1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1			UL,
1,4-Dichlorobenzene	5.0		UL	1.1	в						UL
1,2-Dichlorobenzene	5.0		UL:	0,85	8						UL.
1,2-Dibromo-3-chloropropane	5.0		UL		UJ						
1,2,4-Trichlorobenzene	5.0		UL	1,6	8			1.00		0.48	B
1,2,3-Trichlorobenzene	5.0		UL		UJ					0.63	В

•

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

AR302852

Case #: 37823	SDG : C0040
Site :	PRICE BATTERY
Lab. :	SHEALY

Sample Number :	·	C8201		C8204							
Sampling Location :		BW8-9		PL3-9							
Matrix :		Soil	Soll								
Units :	1 - A	ug/Kg 👘	ug/Kg			:					
Date Sampled :		9/24/2008	·. ·	9/24/2008	8						
Time Sampled :		08:20	$\{ \cdot, \cdot \}$	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	N	UL					·	
Chloroethane	5.0		UL		UL						
Trichlorofluoromethane	5.0		UL		UL			:			
1,1-Dichloroethene	5.0		UL		UL				100		
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		υL		UL						
Acetone	10	21	В	21	B						
Carbon Disulfide	5.0		UL		UL						
Methyl acetate	50		UL.		UL						
Methylene chloride	5.0	0.81	В		ŲL	:					
trans-1,2-Dichloroethene	5.0		UL	1.00	UL.						
Methyl tert-butyl ether	5.0		UL.		UL						
1,1-Dichloroethane	5.0		UL		۰UL			×			
cis-1,2-Dichloroethene	5.0\	на на селото на селот	UL		UL					•	
2-Butanone	-10		UL		UL						
Bromochloromethane	5.0		UL		UL			• •			
Chloroform	5.0		UL.		UL.	S. S				si - Section de	
1,1,1-Trichloroethane	5.0		ŲJ		UL				Amathenium)		
Cyclohexane	5.0	1.5	J		UL						
Carbon tetrachloride	5.0		UJ		UĻ	a. 20					
Benzene	5.0		UJ		UL						
1,2-Dichloroethane	5.0		UL		UL			****			
1,4-Dioxane	100		UL		UL	5					
Trichloroethene	5.0		IJ		UL						1
Methylcyclohexane	5.0		υJ		UL-						
1,2-Dichloropropane	5.0		UJ		UL					****	
Bromodichloromethane	5.0		UU		UL						
cis-1,3-Dichloropropene	5.0		UJ		UL					9979), 2012, Addres - 1997	
4-Methyl-2-pentanone	10		UU		UL						
Toluene	5.0	0.55	J		UL						
trans-1.3-Dichloropropene	5.0		ιUU		UL					10000	1937-10

Case #: 37823	SDG : C0040
Site	PRICE BATTERY
Lab. :	SHEALY

Sample Number :		C8201		C8204				******			
Sampling Location :		BW8-9		PL3-9							
Matrix :		Soil Soil		Soil	,						
Units :		ug/Kg		ug/Kg							
Date Sampled :		9/24/2008		9/24/2008	8	×.			:		
Time Sampled :		08:20		09:30					1		
%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					9	
2-Hexanone	10		UJ		ŲL						
Dibromochloromethane	5.0		UJ		υL						
1,2-Dibromoethane	5.0		UJ		UL						
Chlorobenzene	5.0		UJ		UL						
Ethylbenzene	5.0		UJ		UL						- ,
o-Xviene	5.0		UJ		UL						
m,p-Xylene	5.0		UJ		UL						
Siyrene	-5.0		Uυ		UL			2			
Bromoform	5.0		UJ		UL						
Isopropylbenzene	5.0		UJ.		UL						
1,1,2,2,Tetrachloroethane	5.0	ataan ahaa ahaa ahaa ahaa ahaa ahaa ahaa	IJ		UL					····	
1,3-Dichlorobenzene	5.0		Uυ		UL						
1,4-Dichlorobenzene	5.0		IJ		UL						
1,2-Dichlorobenzene	6,0		Uυ		UL.						
1,2-Dibromo-3-chloropropane	5.0		IJ	• .	UL						
1,2,4-Trichlorobénzene	5.0		UJ		UL.		<b>1</b> 000				
1,2,3-Trichlorobenzene	5.0		υJ		·UL.						

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

#### DATA SUMMARY FORM: BNA

Case	#:	37823
Site :		

SDG : C0040 PRICE BATTERY SHEALY

Number	of	Soil	Samples	:	8
--------	----	------	---------	---	---

Number of Water Samples : 0

Number of Sediment Samples : 0

			manicoro						*****			
Sample Number :		C0050		C0068		C0070		C0071		C81W2		
Sampling Location :		MP45-33	MP45-33		WH13-18		WH7-09		WH2-33		MP48-33	
Matrix :		Soil		Soll		Soil		Soil		Soil		
Units :		ug/Kg		ug/Kg	ug/Kg			ug/Kg		ug/Kg		
Date Sampled :		9/18/200	8	9/19/200	9/19/2008		B'	9/22/200	В	9/17/200	8	
Time Sampled :		14:55		11:20		10:30		11:25		08:00		
%Molsture :		22	•	18		3.7		12		16		
Dilution Factor :		0.99/4.9	3	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	100 N.Y										
2-Chlorophenol	170											
2 <sub>s</sub> Methylphenol	170							S2 0.				
2,2'-Oxybis(1-chloropropane)	170											
Acetophenone	170 🖇							di si san		<u> deserve</u>		
4-Methylphenol	170	•										
N-Nitreso-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	<sup>''</sup> 170											
4-Chloro-8-methylpheriol	170											
2-Methylnaphthalene	170	4300 +										
Hexachlorooyclopentadiene	170											
2,4,6-Trichlorophenol	170											
2,4,5 Trichlorophenol	170											
1,1'-Biphenyl	170	73	J				otationa					
2-Chloronaphthalone	170											
2-Nitroaniline	330											
Dimethylphthalate	170											
2,6-Dinitrotoluene	170											
Acenaphthylene	170		<b>1</b>									
3-Nitroaniline	330											
E AGENANNINERE	6 1/U	a≈. /U	1 J.S	B-11.75/10/11/11/10/	10/ SAM	1 (2003) · · · · · · · · · · · · · · · · · · ·	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		ecc/%		<b>2</b> 3 0 0 0 0	

"+" = Result reported from the diluted analysis

### DATA SUMMARY FORM: BNA

Case #: 37823	SDG : C0040
Site :	PRICE BATTERY
Lab, :	SHEALY

Sample Number		C0050	~~~~~~	C0068		C0070	CONCOUNT &	C0071	aasaroonide	C81W2	
Sampling Location :	1	MP45-33	2	WH13-1	R I	WH7-09		WH2-33		MP48-33	1
Matrix :		Soll	, 	Soit		Soli		Soil		Soil	<b>'</b>
Linite :		ualKa		ualka '				volka		ua/Ka	
Date Sampled :			a/1a/2001	R	09/109		ug/r/g		uy/ny 0/17/2009		
Time Sampled :		14.55	,	11:00		10:20		9/22/2008		9/17/2008	
Moistura	:	14.00 00		-11.20 -io		0.30		10		10.00	
Dilution Eactor		22 n 00 / 4 0	a	10		3.7 1 0		12		10	
Semivolatile Compound	CROL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
2.4-Dinitrophenol	330										
4-Nitrophenol	930										6-24
Dibenzofuran	170										\$\$**\$\$
2.4-Dinitrotoluene	170					i.					<u> Res</u>
Diethviphthalate	170	·					********				(1998-19) (1998-1997)
Eliorene	3 470	95						ningrad vin			<b>9</b> 70
4-Chlorophenyl-phenylether	170						PARCINC,				8872 F 1994
4-Nitroealline	330										SØ (
4 6-Dinitro-2-methylphenol	330						<b></b>			333 <b>9</b> 4377 ( ) X	8191 . P
N-Nitrosodinbenvlamine	170										
1 2 4 5-Tetrachlorobenzene	170		100 <b>0</b>					·		2840399	1.7 · . &
4-Bromophenyl-ohenylether	170										19 Q.
Hexachlorobenzene	170								3439 (Y/2) -		ે∷ જેવ
Atrazine	170										87. ù
Pentachlorophenol	330		-23,639		*****		********			2003 % T	
Phananthrene	170	a dan s		210		40	NG).	140		i. Attrationen e a	
Anthracene	170			41		1990 - 1997 -			S. 25882795		• •
Carbazola	120			24			i XiXi		20.33		
Di-n-butylohthalate	170				8.77 (S 88.) V			2000-0-2-0-000-0-9-5	an georgeologies Al the geologies of the second	SANN L'THE C	· ·
Elupranthene	170	49		550		120		250			ð - 1
Pyrene	170	72	.)	430		120	J	330	.1	33	തകാറ പ
Buylbenzylohibalate	170										Z.M
3.3'-Dichlorobenzidine	170				(0000000). (				4.00030000		9475.200
Benzo(a)anthracene	170			270		53		320			
Chrysene	170		******	280		53	J	530	J	:	
Bis(2-ethvihexvi)phthalate	170			23	8	.31	в	190	в		
Di-n-octylphthalate	170						****			99999999999999999999999999999999999999	909, X9694
Eenzo(b)fluoranthene	170			360		60	3	800	<b>T</b> NS	52	sy sn
Benzo(k)fluoranthene	170			120	J	29	J	250	J	29	J
Benzo(a)pyrene	170			230		51	0	950	0	<b>8</b> 45	Э.
Indeno(1,2,3-cd)pyrene	170		2000-2000	140	J		,	720	J	30	J ·
Dipenzo(a,h)anthracene	170								79 KS	24	J
Benzo(g,h,i)perviene	170	2000 - 2000 - 2000 <b>- 2000</b>	9995 (303 <u>9</u> 83)	70	J		2099 D. C.C.	980		24	J
2,3,4,6 Tetrachlorophenol	170						132		T		
									10.00.000.000	axi (A.) Arij	hard and the second

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

Revised 09/99

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Case #: 37823	SDG : C0040
Site :	PRICE BATTERY
Lab. :	SHEALY

Sample Number :		C81W3		C8201		C8204					
Sampling Location :		MP48-57	·	-BW8-9		PL3-9					of the set
Matrix :		Soil	1	Soil		Soil			1		
Units		ug/Kg		ug/Kg		ug/Kg		×			
Date Sampled :		9/17/2008	3	9/24/2008	3	9/24/200	3				
Time Sampled :		08:15		08:20		09:30					
%Moisture :		7.4	1	11		11 '					1
Dilution Factor :		1.0		2.38	ļ	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									. *	
Hexachtoroethane	170					1.1.1.1.10					
Nitrobenzene	× 170										
Isophorone	170										
2-Nitrophenol	170				·						
2,4-Dimethylphenol	170							9			
Bis(2-Chloroethoxy)methane	170										
2,4-Dichlorophenol	170			<u>a</u> i							
Naphthalene	170			: 90	J				:		
4-Chloroaniilhe	170			, <b>1</b> 83, 16						100	
Hexachlorobutadiene	170									and a state of the	
Caprolactem	. 170	kali ki									
4-Chloro-3-methylphenol	170										
2-Methylnaphthalene	170			110	J						
Hexachlorocyclopentadiene	170			4000						10000000000000000000000000000000000000	
2,4,6-Trichlorophenol	170										
2,4,5-Trichlorophenol	170					194941000000000000000000000000000000000					
1,1-Biphenyl	170					á estere este					
2-Chloronaphthalene	170	Kanan atam aran aran ara				, 					
2-Nitroaniline	330										
Dimethylphthalate	170										
2.6 Dinitrolojuene	170						sa.c.s				
Acenaphthylene	170	a al this & and south that a		100	J					8.100.000.000 bean and	
3-Nitroaniline	330	Q22995.0		a a		i i i i	Ű.Q.	95. S. B			
Acenaphthene	170										

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Case #: 37823	SDG : C0040
Site :	PRICE BATTERY
Lab. :	SHEALY

Sample Number :	C81W3		C8201		C8204						
Sampling Location :		MP48-57	7.	BW8-9		PL3-9					
Matrix :		Soil		Soil		Soll					
Units :		ug/Kg		ug/Kg 🗠		ug/Kg					- Aller
Date Sampled :		9/17/2008		9/24/200	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	<sup>.</sup> Result	Flag	Result	Flag	Result	Flag
2,4-Dinitrophenol	930				á.						
4-Nitrophenol	330								·		
Dibenzofuran	170			53	J						
2,4-Dinitrotoluene	170					10 b-1,					
Diethyiphthalate	170	0									
Fluorene	170	:		51	J			:			
4-Chlorophenyl phenylether	170										
4-Nitroaniline	330			55.80.0000 million							·
4,6-Dinitro-2-methylphenol	930										
N-Nitrosodiphenylamine	170										
1,2,4,5-Tetrachlorobenzene	170					No.					
4-Bromophenyl-phenylether	170			000.1435.0000 cmarcuna						and the second state of the second	
Hexachlorobenzene	170			110	J						
Atrazine	170		t.n.mint								
Pentachlorophenol	930		8.29								
Phenanthrene	170			940		120	J				
Anthracene	170			180	J	21	J				
Carbazole	170			130	J						
Di-n-butylphthalate	170			1.0.00							
Fluoranthene	170			1700		190			Contractions		
Pyrene	170	21	J	1600		170	J				
Butylbenzylphthalate	170										
3,3-Dichlorobenzidine	170										
Benzo(a)anthracene	170			910		94	J				
Chrysene	170			1000		100	4				
Bis(2-ethylhexyl)phthalate	170	82	J								
Di-n-octylphthalate	170		¥								
Benzo(b)fluoranthene	170			1300		150	J				
Benzo(k)tiuoranttiene	170			470		48	ļ.				
Benzo(a)pyrene	170			920		1.00	J		******		
indeno(1,2,3-cd)pyrene	170		8. U.	620		66	Ч.	A.A			
Dibenzo(a,h)anthracene	170								:::::::a		
Benzo(gihi)perviene	170			530		47	Ų.			an de larvag	
2,3,4,6-1 etrachlorophenol	170			L-10-Terror			ليبيا				
CRQL = Contract Required Quantita	ition Limi	t.				SEE NA	<b>HRA</b> 1	TIVE FOR	CODE	: DEFINITI	IONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

Revised 09/99

### DATA SUMMARY FORM: Aroclor

Case #: 37823	
Site :	
Lab. :	

SDG : C0040 PRICE BATTERY SHEALY

- Number of Soil Samples: 4
- Number of Water Samples: 0
- Number of Sediment Samples: 0

Sample Number :		C0040		C0041	·	C81W1		C81W3			
Sampling Location :	Sampling Location :		MP48C-09		MP48D-09		MP48-9		7.		
Matrix :		Soil		Soil		Soil		Soll			
Units :		ug/Kg		ug/Kg		ug/Kg	-	ug/Kg			
Date Sampled :		9/17/2008	3	9/17/2008	3	9/17/200	8	9/17/200	8		
Time Sampled :	l.	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
Arocior-1016	33										
Aroclor-1221	33 :									·	
Arcolor-1232	33										
Aroclor-1242	33		1								
Aroolor-1248	33										
Aroclor-1254	33					330	J				
Aroclor-1260	33			210		l der en				1	
Aroclor-1262	33										
Aroclor-1208	33										
CRQL = Contract Required Qua	antitatio	n Llmit				SEE N/	ARRA'	<b>FIVE FOR</b>	CODE	E DEFINIT	IONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / [(100 - %Moisture) / 100]

Revised 09/99

## Appendix C

## Chain of Custody Records

	USEPA Contract Organic Traffic R	Labo epor	oratory Prog t & Chain o	gram f Custody Record		Reference Ca Client No:	se: 37823	R.
Region: Project Code: Account Code: CERCLIS ID: Spill ID: Site Name / City/State: Project Leader: Action: Sampling Co:	3 CT4356 AE2 37823 - Price Battery OU2 - 092008 PA Lucinda Pype CDM		Date Shipped: Canter Name: Airbili: Shipped to:	9/18/2008 FedEx 791953367905 Shealy Environmental 106 Vantage Point Drive Cayce SC 29033 8037919700	Chain of Custoo Relinquished By 1 2 3 4	ty Record (Date/Time)	Sampler Signature: Received By	(Data/Time)
ORGANIC SAMPLE No.	MATRIX/ SAMPLER	ТҮРЕ	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPL DA	E COLLECT TE/TIME	QC Type
C0050	Soil (>12°)/ David Michailof	2	ENA (14), VOA (14)	006200 (Ice Only), 006201 (Ice Only), 006202 (Ice Only), 006203 (Ice Only), 006225 (Ice Only) (5)	MP45-33	S: 09/18	3/2008 14:55	

<ul> <li>Shipment for Case Complete?</li> <li>N</li> </ul>	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal Number :
Analysis Key:	Concentration : L = Low, M = Medium, H = High, L/M = Low/Me	edium <b>Type/Designate :</b> Composite = C, Grab = G, Both = B	Shipment Iced?
BNA = CLP TCL Semi	volatiles, VOA = CLP TCL Volatiles		
		· · · · · · · · · · · · · · · · · · ·	

### COC Number : 3-594095470-091808-0001

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

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USEPA Contract Laboratory Program		
Organic Traffic Report & Chain of Custody Re	ecord	

Reference Case: 37823

Client No:

R

Region: Project Code:	3 CT4356	Date Shipped: Carrier Name:	9/22/2008 FedEx	Chain of Custod	y Record	Sampler Signature:	
CERCLIS ID:		Airbill:	798017460537	Relinguished By	(Date/Time)	Received By	(Date/Time)
Spill ID:	AE2	Shipped to:	Shealy Environmental	1			•
Site Name / City/State:	37823 - Price Battery OU2 - 092008		106 Vantage Point Drive Cayce SC 29033 8037919700	2			
Project Leader:	FA Lucinda Pype			3			
Action:				4			
Sampling Co:	CDM						
		•I•_•_•		····· =, ! ····			

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	-
€0071	Soil (0"-12")/ David Michailof	2	BNA (14), VOA (14)	006-308 (kee Only), 006-309 (kee Only), 006-310 (kee Only), 006-311 (kee Only), 006-312 (kee 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/Med	dium <b>Type/Designate</b> : Composite = C, Grab = G, Both = B	Shipment Iced?
BNA = CLP TCL Semi	volatiles, VOA = CLP TCL Volatiles		
	,		

### COC Number : 3-594095470-092208-0001

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· .	USEPA Contract Organic Traffic F	Labo Repoi	oratory Prog t & Chain o	gram f Custody Record	<u></u>	Reference Ca Client No:	<b>ise:</b> 37823	
Region: Project Code: Account Code:	3 CT4356		Date Shipped: Carrier Name:	9/17/2008 FedEx	Chain of Custod	ly Record	Sampler Signature:	
CERCLIS ID:			Airbill:	790086824723	Relinquished By	(Date/Time)	Received By	(Date/Time)
Spili ID:	AE2		Shipped to:	Shealy Environmental	1			
Site Name / City/State:	37823 - Price Battery OU2 - 092008			Cayce SC 29033	2			
Project Leader:	Lucinda Pype			8037919700	3			
Action: Sampling Co:	CDM				4			
··· ··								
ORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPL DA	E COLLECT TE/TIME	QC Type
81W2	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: 09/1	7/2008 08:00	
31W3	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	Ś: 09/1	7/2008 08:15	-
							a.	

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 = Medium, H = High, L/M = Low/Me	edium Type/Designate : Composite = C, Grab = G, Both = B	Shipment Iced?
BNA = CLP TCL Semi	volatiles, VOA = CLP TCL Volatiles		

### COC Number : 3-103246740-091708-0002

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Page 1 of 1

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	USEPA Contract La Organic Traffic Rep	boratory Pro	ogram of Custody Record	· · · · · · · · · · · · · · · · · · ·	Reference Ca Client No:	ase: 37823	R
Region: Project Code: Account Code:	3 CT4356	Date Shipped: Carrier Name:	9/17/2008 FedEx	Chain of Custor	iy Record	Sampler Signature:	
CERCLIS ID:		Airbiil:	790086824723	Relinquished By	(Date/Time)	Received By	(Date/Time)
Spiil ID:	AE2	Shipped to:	Shealy Environmental	1			
Site Name / City/State:	37823 - Price Battery OU2 - 092008		106 Vantage Point Drive Cayce SC 29033	2			
Project Leader.	PA Lucinda Pype		8037919700	3	<u></u>		
Action: Sampling Co:	СОМ			4	· · ·		
				,		—	

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 ABO (14)	006202 (Ice Oniy) (1)	МР4 <del>8-9</del>	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/I	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		
<u>-</u>	2		
· · · · · · · · · · · · · · · · · · ·			

### COC Number : 3-594095470-091708-0001

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	USEPA Contract Organic Traffic R	Labo epor	oratory Prog t & Chain o	gram f Custody Record		Reference Ca Client No:	<b>ise:</b> 37823	R
Region: Project Code: Account Code:	3 CT4356		Date Shipped: Carrier Name:	9/24/2008 FedEx	Chain of Custor	ly Record	Sampler Signature:	
CERCLIS ID:			Airbill:	791145602192	Relinquished By	(Date/Time)	Received By	(Date/Time)
Spill ID:	AE2		Shipped to:	Shealy Environmental	1			
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			106 Vantage Point Drive Cayce SC 29033	2			
Project Leader.	Lucinda Pype			8037919700	3			
Action:					4			
Sampling Co:	CDM	:						
					· _ · · · · · · · · · · · · · · · · · ·			•. •. • · · ·
ORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING LOCATION	SAMPL DA	E COLLECT TE/TIME	QC Туре
C8201	Soil (>12"V David Michailof	2	BNA (14) VOA (14)	005-368 (Ice Only) 005-373 (Ice Only)	BW8-9			

				005-374 (Ice Only), 005-375 (Ice Only), 005-376 (Ice Only) (5)		
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 Signate	ure (s):	Chain Of Custody Seal Number :	
Ň					
Analysis Key:	Concentration: L = Low, M = Medium, H = High, L/M = Low/Me	edium Type/Designate :	Composite = C, Grab = G, Both = B	Shipment Iced?	
BNA = CLP TCL Semi	volatiles, VOA = CLP TCL Volatiles		<u> </u>	-	
			· · ·		
			· .		

### COC Number : 3-594095470-092408-0001

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Page 1 of 1 AR302865

# U.S. EPA Region III Analytical Request Form Revision 10.06

×11> 9-2-02	5 -
ASQAB U	SE ONLY
RAS# CT4356	Analytical TAT
DAS#	7/11
NSE#	1 117

378	823			* 4. <sup>1</sup> .	94 -				
Date: 25 August 2	008 Site Ac	tivity: RI/	/FS Oversight			-	`		
Site Name: Price Battery				Street Address	: 251 Gran	d Street			
City: Hamburg		State:	PA.	Latitude:		Longitude			
Program: Superfund		Acct. #	#: 2008 T03 🕅 302DD2	CA3E2BD02		CERCLIS #: PA	N000305679	)	
Site ID: N/A		Spill I	D: N/A			Operable Unit: 2	2		
Site Specific QA Pla	in Submitted: 🗌 No 🛛	Yes Tit	le: Price Battery Operat	le Unit 2 RI/FS	Oversight	Draft SMP		Date Approved: 5/	12/08
EPA Project Leader	: John Banks	Ph	hone#: 215-814-3214	Cell Phone	e #:		E-mail: bar	nks.john-d@epa.gov	
Request Preparer: A	Andrea Soo	Pł	hone#: 610 293 0450	Cell Phon	c #: 610-30	4-0803	E-mail: soc	oac@cdm.com	
Site Leader: Lucind	a Pype	Pł	hone#: 717-560-7500	Cell Phon	e #:		E-mail: py	oelj@cdm.com	
Contractor: CDM			EPA CO/PO: Meli	isa Hoffman		_			
#Samples 34	Matrix: soil		Parameter: Lead, A	Antimony, and A	Irsenic	Bonnee	Method: II	LM05.4 ICP-AES	28183
#Samples 1	Matrix: soil		Parameter: ICP me	etals + Hg		V	Method: II	LM05.4 ICP-AES	28184
#Samples 10	Matrix: soil	<u>-</u>	Parameter: TCL V	0C -		Shealur	Method: S	OM01.2, low soil	28186
#Samples 10	Matrix: soil		Parameter: TCL S	VOC			Method: S	OM01.2, low soil	28187
#Samples 2	Matrix: soil		Parameter: TCL P	CB			Method: SOM01.2 .28/88		
#Samples 2	Matrix: water non-pot	able	Parameter: ICP M	rameter: ICP Metals + Hg (Total) 730 hnes Method: ILM05.4 ICP-AES		> 28185			
#Samples 2	Matrix: water non-pot	able	Parameter: ICP Me	etals + Hg (Diss	olved)	V	Method: II	LM05.4 ICP-AES	
#Samples 2	Matrix: water non-pola	able	Parameter: TCL V	OC		Shialy	Method: S	OM01.2, trace water	2-8189
#Samples 2	Matrix: water non-pot	able	Parameter: TCLS	VOC		UI.	Method: S	OM01.2, low water	28190
Ship Date From: 9/0	$\frac{1}{2008} \left( \frac{q}{12} \right)$ Ship	Date To: 1	10/31/2008	Org. Validation	n Level M	[3	Inorg. V	alidation Level IM2	<u></u>
Unvalidated Data Re	equested: 🗌 No 🖂 Ye	s If Yes	s, TAT Needed: 🗌 14 c	iays 🛛 7days	72hrs	48hrs 24	hrs 🗌 Other	(Specify) + 3 days for	or CADRE Est
Validated Data Pack	age Due: 🗌 42 days 🗌	30 days	21days 14 day	ys 🛛 Other (S	specify) 28	3 days	127,	14/8/4	
Electronic Data Deli	Electronic Data Deliverables Required: 🗌 No 🛛 Yes (EDDs will be provided in Region 3 EDD Format)								
Special Instructions: we will be adopting attached PDF file in <u>sooac@edm.com</u> or and Nancy Forman ( this lab request.	The unvalidated data is r the CLP methods, SOM01 Table 1a under "RL." If the (610)304-0803. Please ser FormanNA(a cdm.com), and	equested v 2 and ILN here are an id unvalida id Jonah Ja	via SMO/ESAT – 7 days 405.4 in place of the PR by reporting limits that c ated EDDs and validated ackson (JacksonJM@cd	analytical TAT P's SW846 met annot be met by 1 data packages, <u>m.com</u> ) when a	+ 3 days for hods listed the request including vailable. C	or compliance rev in the attached PI ted methods, pleas excel and databas Quantitation limits	iew = 10 day DF file. Repo se contact Ar e-ready form are provided	rs at no additional cost. orting limits required ar adrea Soo immediately ats to Andrea Soo (soo in the PDF file that wa	Please note that re listed in the at ac(wedm.com) as attached to

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## Appendix D

## Laboratory Case Narrative

### Shealy Environmental Services, Inc. Contract Number: EPW05031

Date: 10/13/2008

### **SDG Narrative**

### Case 37823

**SDG C0040** 

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
4 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
1 C81W3	Yes	Yes	Yes	No	Yes	No
* C8201	Yes	Yes	Yes	No	No	No
· C8204	Yes	No	Yes	No	No	No

### EPA Sample Numbers

 Columns
 VOA DB-624, 30m x 0.25mm x 1.4um

 BNA DB-55MS, 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 $(ug/Kg) = \frac{(Ax)(Is)(DF)}{(Ais)(RRF)(Ws)(D)}$
	Where $A_x$ is the area of the characteristic ion (BICP) for the compound to be measured. $A_{is}$ is the area of the characteristic ion (BICP) for the internal standard. $I_s$ is the amount of internal standard added, in ng.
	RRF is the mean relative response factor from the initial calibration. DF is the dilution factor. Vo 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	Soil sample concentration (ug/Kg) = $\frac{(A_x)(I_s)(V_t)(DF)(GPC)}{(A_{is})(\overline{RF})(V_i)(W_s)(D)}$
	Where $A_x$ is the area of the characteristic ion (BICP) for the compound to be measured. $A_{is}$ is the area of the characteristic ion (BICP) for the internal standard. I, 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. $GPC = V_{is}/V_{out}$ : GPC factor. $V_{is}$ is the volume of extract loaded onto GPC column. $V_{out}$ is the volume of extract collected after GPC cleanup. $V_1$ is volume of the concentrated extract in uL. (If no GPC cleanup is performed, then $V_1 = 1000$ uL. If GPC cleanup is performed, then $V_1 = V_{out}$ ). $V_1$ is the volume of the extract injected in uL.
	W <sub>s</sub> is the weight of sample extracted in g $D = \frac{100 - \%Moisture}{100}$

Aroclor Equation	Soil sample concentration $(ug/Kg) = \frac{(Ax)(Vt)(DF)(GPC)}{(\overline{CF})(Vi)(Ws)(D)}$	
	Where $A_x$ is the response (peak area) of the compound to be measured. $\overrightarrow{CF}$ 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. $V_1$ is volume of the concentrated extract in uL. (If no GPC cleanup is performed, then $V_1$ cleanup is performed, then $V_1 = V_{out}$ ). $V_1$ is the volume of the extract injected in uL. $V_2$ Volume of where extracted in mL.	r= 1000uL. If GPC
	W <sub>s</sub> is the weight of sample extracted in g $D = \frac{100 - \% \text{Moisture}}{100}$	:

#### 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. Pania

Saroj A. Parikh Project Manager October 13, 2008

### <u>Saroj Parikh</u>

: 1

<u>Saroj Pa</u>	rikh		E E	· ·	· · · ·	
From: To: Cc: Sent: Attach: Subject:	"Walsh, Colin" <cwalsh20@fedd "Saroj Parikh" <sparikh@shealy "Kerry Hinshaw" <khinshaw@sh <harris.carroll@epamail.epa.go Thursday, September 25, 2008 ATT00017.htm; CASE 37823 SI Region 03   Case 37823   Lab S FINAL</harris.carroll@epamail.epa.go </khinshaw@sh </sparikh@shealy </cwalsh20@fedd 	csc.com> /lab.com> healylab.com>; <mwc ov&gt;; <thaung,khin-cho 2:30 PM DG C0040 TR SCAN SHEALY   SDG C0046</thaung,khin-cho </mwc 	odrum@shealylab o@epa.gov>; <kwe .pdf )   Issue Insufficien</kwe 	.com>; <slizys.dan dar.john@epa.gov t/inappropriate des</slizys.dan 	@epa.gov>; /> lignation of labora	itory QC
Saroj,						
***Summary S	Siart***		. *	x .		<u>.</u>
lssue: Labora analysis. The	tory QC is not designated on the TR/ laboratory would like to select sample	COC; however, the Sch e C0040 (SDG C0040)	eduling Notification F as laboratory QC.	orm lists that laborat	ory QC is required	for the ARO
Resolution: In PE, blank, or laboratory QC	accordance with previous direction find a content of the sample. The laboratory will no content of the sample of the same proceed with the analysis of the same proceed with the same proceed withet p	rom Region 3, the labor ote the issue in the Case e samples.	atory will select a sar b/SDG Narrative, noti	npie for laboratory Q fy the SMO coordina	C as long as the sa tor of the sample se	mple is not a ected for
SMO will note	that the laboratory selected sample	C0040 (SDG C0040) as	laboratory QC.		· · ·	•
***Summary I	End***				•	
Please let me	know if you have any further question	ns or problems.				
Thanks,	a da series de la companya de la com La companya de la comp		e de la constance de la constan La constance de la constance de			
Colin		•				
Colin G. Wals	sh	*****	e da Sale Sale Sale da Sale			
Environmenta	I Coordinator - Region 3					
CSC				· · · · · ·	· · ·	
15000 Confer Civil Division	ence Center Drive, Chantilly, VA 201   (p) 703-818-4544   (f) 703-818-4602	51 I cwalsh20@fedcsc.co	m I www.csc.com			
, <b>-</b> ,						
						• • •
From: Saroj F Sent: Thursda To: Walsh, Co Cc: Saroj Par Subject: Case	Parikh [mailto:sparikh@shealylab.com ay, September 25, 2008 1:31 PM olin ikh; Kerry Hinshaw; Michael A. Woodi 37823 SDG C0040 - C0040 to be us	] rum sed for lab QC for ARO				
Colin,		-				

		SAMPLE LOG-I FORM DC	N SHEET -1		· · ·	
Lab Name Shial	y Environment	stal Servi	lice Inc.	######################################	Page of/	1
Received By (Print Na	the) Elegi	sor Cy	GKSML		Log-in Date 9025 08	1
Received By (Signatur	re)	and			· · · · · · · · · · · · · · · · · · ·	
Case Number 378	123.	Sample Delive	ery Group No.	C0040	Mod. Ref. No. N/A	
Remarks:			. Corre	esponding		
		EPA Sample #	Sample Tag #	Assigned Lab #	Remarks: Condition of Sample Shipment, etc.	
<ol> <li>Custody Seal(s)</li> </ol>	Present Absent* Intact Broken	C8201	005-368, 005-373-1 25-	JI25003-001	OK	] ¿
2. Custody Seal Nos.	<u>NA</u>	Charl	005-380 tv			[ [0
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present Absent *	<u> </u>	005 - 384			
4. Airbill	Airbill/Sticker Present/Absent*		-			1
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*/	· ·			/	
8. Cooler Temperature Indicator Bottle	Present Absent			Bay		
9. Cooler Temperature	<u>(e. 2</u>	-		i8		
<ol> <li>Does information on TR/COCs and sample tags agree?</li> </ol>	tes)No*		Or Or			
11. Date Received at Laboratory	9.25 -08			works -		
12. Time Received	0940			······································		1
Sample T	ransfer .			· · · · · · · · · · · · · · · · · · ·		1
Fraction BNA	Fraction VIA					
Area # Golm 1	Area #Frugn 14	/		· ·		
By G.C.m	By GCm			······································		<b> </b>
on 9.75-18	10n 9.75-00					]
* Contact SMO and atta	ch record of resolut	lon.			<u></u>	1
neviewea by <u>S.A.</u>	I concis	<u> </u>	Logbook No.	NIA	······································	$\frac{1}{2}$
Jace (0/1	1100		Logoook Page N	∪. №∦ <u></u> Д…		I.

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## Appendix E

## Tentatively Identified Compounds (TICs)

		אר - דמטריד - איז - דע- זא - דמטריד - איז - דע-		EPA SA	MPLE NO.
		SEMIVOLATILE ORGANICS ANALYSI TENTATIVELY IDENTIFIED CO	S DATA SHEE MPOUNDS	т с	0050
	Lab Name: Shealy Environm	iental Services, Inc. Cont	ract: <u>EP-W-0</u>	5-031	
	Lab Code: SHEALY Cas	se No.: <u>37823</u> Mod. Ref No	• ; ·	SDG No.: <u>C004</u>	)
	Matrix: (SOIL/SED/WAT	rer) <u>Soll</u> Lab	Sample ID::	JI19010-001	
	Sample wt/vol:3	30.4 (g/mL) g Lab	File ID: <u>10</u>	)114	
	Level: (TRACE or LOW,	MED) LOW Extr	action: (Ty	ype) 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 Anal	yzed: <u>10/01/200</u>	8
	GPC Cleanup: (Y/N)		tion Factor	. 1.0	
	CONCENTRATION UNITS:	(ug/L or ug/Kg)ug/kg			
	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	1	Unknown Aldel Condensate	s		anna faraite
02		Unknown-01	5.170	3000	J
03	620-14-4	Benzene, 1-ethyl-3-methyl-	5,230	2200	ŊJ
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
0.6	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-ethvl-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-ethv1-2,3-	6.340	5800	NJ
13	874-41-9	Benzene, 1-ethyl-2,4-	6.520	560	ŊJ
14	95-93-2	Benzene, 1.2.4.5-tetramethvl-	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	924-90-8		6.850	750	ŇJ
18		Unknown-03	6.890	350	J
19	024-90-8		6.930	2000	ŊJ
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	ŊĴ
24	56147-63-8	2-Ethyl-2.3-dihydro-1H-indens	7.580	430	ŊJ
25	6682-71-9	1H-Indene, 2.3-dihvdro-4.7-	7,710	470	NJ
26	90-12-0	Naphthalene, 1-methyl-	8.250	980	NJ
27	575-43-9	Naphthalene, 1.6-dimethul-	8 910	1100	N.T
28	581-42-0	Naphthalene, 2.6-dimethyl-	9,000	1200	NJ
20		and the state of t	†		
30					
	E966796 <sup>2</sup>	Total Alkanes	N/A	-	
		TATALA PLANALISTIC			

<sup>2</sup>EPA-designated Registry Number.

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SOM01.2 (10/2006)

AR302874 457 of 1304

DV 10/21/08

			1K - FORM I S	V-TTC		EPA SA	MPLE NO.	
			SEMIVOLATILE ORGANICS AND TENTATIVELY IDENTIFI	ALYSIS ED CON	DATA SHEI MPOUNDS	ET CO	050DL	
		Lab Name: Shealy Environm	tental Services, Inc.	Conti	ract: <u>EP-W-</u>	05-031		
		Lab Code: SHEALY Cas	se No.: 37823 Mod. R	ef No.	:	SDG No.: C0040	)	
	-	Matrix: (SOIL/SED/WAT	rer) <u>Soil</u>	Lab S	Sample ID:	JI19010-001		
		Sample wt/vol:3	80.4 (g/mL) <u>g</u>	Lab H	Tile ID: <u>10</u>	0120		
-		Level: (TRACE or LOW,	/MED) LOW	Extra	action: (T	ype) SONC		
		% Moisture: 22	Decanted: (Y/N) N	Date	Received:	09/19/2008		
		Concentrated Extract	Volume: <u>500</u> (uL)	Date	Extracted	09/26/2008	<u></u>	
		Injection Volume: 1.0	(uL) GPC Factor:2.0		Date Ana	yzed: 10/01/200	8	
		GPC Cleanup: (Y/N)	 рн: 6.6	Dilut	ion Facto	r: <u>5.0</u>		
		CONCENTRATION UNITS:	(ug/L or ug/K <u>g)ug/k</u> g					
·		CAS NUMBER	COMPOUND NAME		RT	EST. CONC.	Q	<b>X</b> . J
· · ·	01		'OTKnowamAldolmCondensate		A_050	4900	A. I. D. C	UV,
	02	611-14-3	Benzene, 1-ethyl-2-methy	1-	5.230	3500	NJD	10/53/08
	03	108-67-8	Benzene, 1,3,5-trimethyl	-	5.310	2900	NJD	
	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	NJD	
	06	496-11-7	Indane		5,950	1600	NJD	
	07	141-93-5	Benzene, 1,3-diethyl-		6,010	2400	NJD	
	08	1074-55-1	Benzene, 1-methyl-4-prop	vl-	6.030	3600	NJD	•
	09	2783-26-8	2-Tolvloxirane		6.180	1500	NJD	
	10	934-80-5	Benzene 4-ethyl-1.2-		6 250	1300	ם ד.וו	
	11	527-84-4	Benzene, $1-methyl-2-(1-$		6,290	1200	NITD	
	12	933-98-2	Benzene, 1-ethyl-2, 3-		6 340	7500	ם דא	
	13	1758-88-9	Benzene, 2-ethyl-1.4-		6.520	1100	NTD	
	1 4	488-23-3	Benzene, 1 2 3 Artetrame	thvl-	6 620	2500	N.T.D.	
	15	95-93-2	Benzene, 1,2,4,5-tetrame	thvl-	6,650	1600	NJD	
	16	<u> </u>	Enknown-01	<u> </u>	6.800	850	.T.D.	
	17	1824-9A-8	Man Dimension Landon de man UNK 1021	M	6 850	1500		
DV.	18		Unknown=02	<u> </u>	6 880	700		
10/21/08	10	<u>-921-90-8</u>	1. Dhannin Juprationa 1914 the and	9V1	6 930	4000	N.T.D.	
141	20	13632-94-5	Benzene 1 Ardiethyl-2-		7 010	870	NTD	
	21	112-40-3	Defizience, 1,4-ulternyl 2		7 180	590		
	22	17059-48-2	18-Indepe 2 3-dibudro-1	6-	7 220	930	NLT D	
	22	700-12-9	Reprope pontamothyl-	, •	7 330	. 670		
	23	700-12-3	Mala and AD		7.550	070		
	24	6692 71 0		~~~~~	7,580	000		
	25	00 12 0	Nachthaland, 2,3-dinydro-4	, /-	<u> </u>	990		
	20		Naphthalene, 1-methyl-		8.250	1900		
	27	5/5-3/-1	Naphthalene, 1, /-dimethy	1-	8.910	1000	NUD	
	28	······						
	29	/	<u></u>		<u> </u>			
	30							
	-	E 300 / 30-	Total Alkanes		N/A		]	

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<sup>2</sup>EPA-designated Registry Number.

SOM01.2 (10/2006)

AR30287

	[1,2] = [1,2]	1K - FORM I S	V-TIC		EPA SA	MPLE NO.	
		SEMIVOLATILE ORGANICS AND TENTATIVELY IDENTIFI	ALYSIS ED CON	DATA SHEI IPOUNDS	ET C	0068	
	Lab Name: Shealy Environn	nental Services, Inc.	Contr	act: EP-W-	05-031		
	Lab Code: SHEALY Cas	se No.: <u>37823</u> Mod. Re	ef No.	:	SDG No.: C004	0	
	Matrix: (SOIL/SED/WAS	ier) <mark>Soil</mark>	Lab S	ample ID:	JI23010-001		
	Sample wt/vol:3	80.1 (g/mL) <u>g</u>	Lab F	ile ID: <u>10</u>	0109		
	Level: (TRACE or LOW,	/MED) LOW	Extra	action: (T	ype) SONC		
	% Moisture: 18	Decanted: (Y/N) N	Date	Received:	09/23/2008		
	Concentrated Extract	Volume: <u>500</u> (uL)	Date	Extracted	-09/24/2008		
	Injection Volume: 1.0	) (uL) GPC Factor: 2.0		Date Ana	lyzed: 10/01/200	)8	
	GPC Cleanup: (Y/N)	Y pH: 7.0	Dilut	ion Facto	r: <u>1.0</u>		
	CONCENTRATION UNITS:	(ug/L or ug/Kg <u>)ug/kg</u>					
	CAS NUMBER	COMPOUND NAME		RT	EST. CONC.	2	-
01		Unknown-Addol-Condensate	NAME AND A DESCRIPTION OF THE OWNER OF THE OWN	ranaan Ange (959) e	10000000000000000000000000000000000000	The Designment of the	DV 
02	629-78-7	Heptadecane		15,160	130	NJ	142100
03	3						
04			<u></u>				
0.							
07	7						
08	3						
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)د	E0667062			27/2			
,	E 200/20-	TOTAL ALKANES		A/M		L]	

<sup>2</sup>EPA-designated Registry Number.

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SEMIVOLATILE	ORGANICS	ANALY	SIS	DATA	SHE
TENTATIV	ELY IDENT	IFIED	COM	POUND	S

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EPA SAMPLE NO

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	IK - FORM I SV- SEMIVOLATILE ORGANICS ANAL TENTATIVELY IDENTIFIED	TIC YSIS DATA SHEE ) COMPOUNDS	r C	0070`	
Lab Name: Shealy Enviro	onmental Services, Inc.	Contract: EP-W-0	5-031		
Lab Code: SHEALY	Case No.: 37823 Mod. Ref	No.:S	DG No.: C004	D	
Matrix: (SOIL/SED/	NATER) Soil	ab Sample TD: J	123010-002		
Sample wt/vol:	30.1 (g/ml) g I	ab File TD. 100	110		
		in File 10.	RONC	<u></u>	
Tevel: (IRACE of P	EOW E	xtraction: (Ty	pe) <u>SONC</u>	<u></u>	4
% Moisture: 3.7	Decanted: (Y/N) N D	ate Received:	09/23/2008		• •
Concentrated Extra	ct Volume:500 (uL) D	ate Extracted	09/24/2008		
Intection Volumos	10 (vil) GPC Enctors 20	Date Analy		8	
injection voidme.		Duce mar.	10		• .
GPC Cleanup: (Y/N)	Y pH: 7.1 D	ilution Factor	. 1.0		
CONCENTRATION UNIT	S:(ug/L or ug/Kg <u>)ug/k</u> g	9 · · ·			
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	]
1	Untrown-Aldol-Gondonsate			anaaanipasaya fa	
2	Unierrown 01		nonnannanna mailte Bear	ewarando 👸	V* 10/21/38
3 143-07-7	Dodecanoic acid	9.640	160	NJ	
4 57-10-3	n-Hexadecanoic acid	11.920	77	NJ	
5 111-06-8	Hexadecanoic acid, butyl	13.020	800	NJ	ł
6	Unknown-02	13.360	340	J	
7	Unknown-03	13.390	650	J	
8 123-95-5	Octadecanoic acid, butyl	13.910	760	NJ	1
9 14473-55-3	Myristin, 2,3-diaceto-1-	14.210	170	NJ	
.0	Unknown~04	14,230	300	J	
.1	Unknown-05	14.990	85	J	]
.2	Unknown-06	15.020	120	J	
.3	Unknown-07	15.540	97	J	
4 55401-62-2	Octadecanoic acid, 2-	15.820	130	NJ	
15	Unknown-08	15.850	200	J	
16					
17				·····	
		( I			

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E966796<sup>2</sup> <u>Total Alkanes</u> <sup>2</sup>EPA-designated Registry Number.

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N/A

		and the second sec	1K - FORM I S	37		_	EPA SA	MPLE NO.
		· · · · · · · ·	SEMIVOLATILE ORGANICS AN TENTATIVELY IDENTIF	IED CO	DATA SHEI MPOUNDS	ET	CI	0071
		Lab Name: Shealy Enviror	mental Services, Inc.	Cont	ract: <u>EP-W-</u>	05-031		
		Lab Code: SHEALY Ca	ase No.: <u>37823</u> Mod. F	Ref No.	:	SDG	No.: <u>C0040</u>	)
		Matrix: (SOIL/SED/W	ATER)Soil	Lab S	Sample ID:	<u>JI2301</u>	0-003	
		Sample wt/vol:	<u>30.3</u> (g/mL) <u>g</u>	Lab H	File ID: 10	0111		
		Level: (TRACE or LO	N/MED) LOW	Extra	action: (T	ype).	SONC	
		% Moisture: <u>12</u>	Decanted: (Y/N) N	Date	Received:	09/23	/2008	
		Concentrated Extrac	t Volume:500 (uL)	Date	Extracted	.09/24	/2008	
		Injection Volume:1	.0 (uL) GPC Factor:2.0		Date Ana	lyzed	1: <u>10/01/200</u>	8
		GPC Cleanup: (Y/N)_	Y pH: 7.5	Dilut	ion Facto	r: <u>5.0</u>	In	
		CONCENTRATION UNITS	: (ug/L or ug/K <u>g)ug/kg</u>	•				
		CAS NUMBER	COMPOUND NAME		RT	ES1	CONC.	Q
	01		Unknown-01		4.040		7600	J
1	02	111-06-8	Hexadecanoic acid, buty	1	13.020		1500	NJ
	0.3	123-95-5	Octadecanoic acid, buty	1	13.910		1300	NJ
	04		Unknown-02		15.370		1000	J
1 A1	05		Unknown-03		16.180		970	J
5. 5. M	06	192-97-2	Benzo[e]pyrene		16.420		1400	NJ
n in statu masa	07	·	Unknown-04		16.780		1600	· J
n na shin an	08	24471-47-4	Pervlene, 3-methy1-	·····	17.070		920	NJ
to the second	09	)	Unknown-05		17.540		2500	J
	10	)	Unknown-06		18.130	· · · · · · · · · · · · · · · · · · ·	2900	J
n - Al - Re-	11		Unknown-07		18.910		860	J
ana Ar	12	2 						
	13	3						
	14	l						
	15	j						
	16	5 <u> </u> _						
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	29				└─── <b>──</b>			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	30	E0667062						
		E200120-	Total Alkanes		N/A		L	

<sup>2</sup>EPA-designated Registry Number.

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	1K - FORM I SV-TI	c.	EPA SAM	PLE NO.	
· •	SEMIVOLATILE ORGANICS ANALYS TENTATIVELY IDENTIFIED C	IS DATA SHEET OMPOUNDS	C8	1W2	
Lab Name: Shealy Environ	mental Services, Inc. Con	tract: <u>EP-W-05</u>	-031		-
Lab Code: SHEALY Ca	ase No.: <u>37823</u> Mod. Ref No	o.:S	DG No.: <u>C0040</u>	·····	•
Matrix: (SOIL/SED/W	ATER)Soll	Sample ID: J	18017-005		
Sample wt/vol:	<u>30.1</u> (g/mL) g Lab	File ID: 0923	304		
Level: (TRACE or LOW	V/MED)LOW Ext	raction: (Typ	pe) SONC		•
% Moisture: 16	Decanted: (Y/N) N Dat	e Received: 0	9/18/2008	•	-
Concentrated Extract	Volume: <u>500</u> (uL) Dat	e Extracted:	9/19/2008		•
Injection Volume: 1	.0 (uL) GPC Factor:2.0	Date Analy	zed: 09/23/2008		-
GPC Cleanup: (Y/N)	Y pH: 2.0 Dil	- ution Factor:	1.0		
CONCENTRATION UNITS	ug/L or ug/Kg <u>)ug/kg</u>	··· ··			
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	]
L	Unknown-Aldel-Condensate			anna Anna A	] DV
2 111-06-8	Hexadecanoic acid, butyl	13.060	830	NJ	1 10/2
3 123-95-5	Octadecanoic acid, butyl	13.940	770	NJ	-
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	1K - FORM I SV-TTCEPA_SAMPLE_NO.					
	SEMIVOLATILE ORGANICS ANALYSI TENTATIVELY IDENTIFIED C	- FORM I SV-TIC DRGANICS ANALYSIS DATA SHEET LY IDENTIFIED COMPOUNDS C81W3				
Lab Name: Shealy Environ	mental Services, Inc. Con	tract: EP-W-(	05-031			
Lab Code: SHEALY Ca	use No.: 37823 Mod. Ref No	·.:	SDG No.: C0040			
Matrix: (SOIL/SED/WA	ATER)Soll	Sample ID:	J118017-004			
Sample wt/vol:	30.0 (g/mL) g Lab	File ID: 09	2303			
Level: (TRACE or LOV	V/MED) LOW	raction: (T	SONC			
·			09/18/2008			
% Moisture: <u>7.4</u>	Decanted: (Y/N) N Date	e Received:	.09/19/2008			
Concentrated Extract	: Volume: <u>500 (uL)</u> Date	e Extracted	09/19/2000			
Injection Volume: 1.	.0 (uL) GPC Factor: 2.0	Date Anal	yzed: 09/23/2008			
GPC Cleanup: (Y/N)	Y pH: 2.0 Dilt	ution Facto	r: <u>1.0</u>			
CONCENTRATION UNITS:	(ug/L or ug/Kg) <u>ug/kg</u>					
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	<u>e</u> i	8	
	Unknown Addel Condensace	4.090	<u></u>	temperat	DY.	
111-06-8	Hexadecanoic acid, butyl	13.060	780	NJ	10[2	
	Unknown-01	13.390	380	<u> </u>		
	Unknown-02	13,420	750	J		
123-95-5	Octadecanoic acid, butyl	13.940	680	NJ		
14473-55-3	Myristin, 2,3-diaceto-1-	14.270	330	NJ		
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E966796 <sup>2</sup>	Total Alkanes	N/A				

gnated Registry Number.

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	DATA SHEET C8201			
ab Name: Shealy Enviro	onmental Services, Inc. Cont	ract: EP-W-	05-031	
ab Code: SHEALY C	ase No.: 37823 Mod. Ref No	.:	SDG No.: C0040	
atrix: (SOIL/SED/W	VATER) Soil Lab	Sample ID:	JI25003-001	
ample wt/vol:	<u>12.6</u> (g/mL) g Lab	File ID: <u>10</u>	0115	
evel: (TRACE or LO	DW/MED)LOW Extr	action: (T	ype) SONC	
Moisture: 11	Decanted: (Y/N) N Date	Received:	09/25/2008	
Concentrated Extrac	t Volume:500 (uL) Date	Extracted	09/26/2008	
niection Volume:	$1.0 \qquad (ui) GPC Factor: 2.0$	Date Ana	Lvzed: 10/01/2008	3
BC Closnups (X/N)		tion Facto		1
CONCENTRATION UNITS	3: (ug/L or ug/K <u>g)ug/kg</u>	LIGH LACED	· · · · · · · · · · · · · · · · · · ·	
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	Unknown Aldor Condensate	4.060		margani B
706-78-5	Cyclopentene, octachloro-	10.440	930	NJ
2531-84-2	Phenanthrene, 2-methyl-	11.930	380	NJ
832-69-9	Phenanthrene, 1-methyl-	11.970	340	NJ
	Unknown-01	12.070	550	Ĵ
	Unknown-02	12.300	310	J
781-43-1	9,10-Dimethylanthracene	12.620	370	NJ
111-06-8	Hexadecanoic acid, butvl	13.020	_890	ŊJ
	Unknown-03	13.360	390	J
	Unknown-04	13.390	970	J
243-17-4	11H-Benzo[b] fluorene	13.530	250	ŊJ
646-13-9	Octadecanoic acid. 2-	13,920	740	N.T
<u></u>	Unknown=05	14.240	280	
······································	Unknown 00	14 390	310	. т
1705-84-6	Triphenylene 2-methyl	15 120	240	NLT
102-07-2	Benzo(a) avrono	16 420	720	N.T
192-91-2	Delizo(e) bytene	10.420	120	NU
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1K - FORM I SV-TIC

EPA SAMPLE NO.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS				ET C8	C8204		
Lab Name: Shealy Envi	ronmental Services, Inc.	Cont	ract: 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:	<u>30.6</u> (g/mL) g	Lab 1	- File ID: <u>10</u>	0116			
Level: (TRACE or )	LOW/MED) LOW	Extr	action: (T	VDE) SONC			
<pre>% Moisture: 11</pre>	Decanted: (Y/N) N	Date	Received:	09/25/2008			
Concentrated Extra	act Volume:500 (uL)	Date	Extracted	09/26/2008			
Injection Volume:	1.0 (uL) GPC Factor:2.0		Date Ana	Lyzed: 10/01/2008	3		
GPC 'Cleanup: (Y/N)	) Y pH: 7.8	Dilu	tion Facto	r: <u>1.0</u>			
CONCENTRATION UNI	IS: (ug/L or ug/Kg)ug/kg						
CAS NUMBER	COMPOUND NAME		RT	EST. CONC.	Q		
01	WITKNOWN Atdot Condensed	y Capito Mire Camero			and a stranger and		
02 143-07-7	Dodecanoic acid		9.640	230	NJ		
03 111-06-8	Hexadecanoic acid, buty	7]	13.020	690	NJ		
0.4	Unknown-01		13,360	200	Ţ		
05	Unknown-02		13,390	420	J		
06123-95-5	Octadecanoic acid but		13 910	580	N.T		
07	Unknown-03	<u></u>	14.240	200			
0.8			15 920	350			
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E966796 <sup>2</sup>	Total Alkanes		N/A		1		

<sup>2</sup>EPA-designated Registry Number.

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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

#### OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

AR302883

LOCKHEED MAR 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 Pacsimile 410-305-3597

**DATE:** October 15, 2008

- SUBJECT: Inorganic Data Validation (IM2 Level) Case: 37823 SDG: MC81T3 Site: Price Battery
- FROM: Donald M. Brown<sup>0</sup><sup>NS</sup> Inorganic Data Reviewer

Mahboobeh Mecanic<sup>MM</sup> 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

Page 1 of 1

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

#### Case 37823, SDG MC81T3

<u>ANALYTE</u>	SAMPLES <u>AFFECTED</u>	POSIT <u>VALU</u>	IVE ES	NON- DETECTED <u>VALUES</u>	BIAS	<u>COMMENTS*</u>
Sb	All Samples Exce MC81T3	pt J			na series de la composition de la compo	>MDL <crql MSE (13%)</crql 
	MC81T3	an an taon 1997. Anns an taon	· · · ·	R	Ext. Low	MSE (13%)
Pb	All Samples		<b>.</b>	· · · · · ·	Low	MSL (69%)
	la statistica de la secono Secono de la secono de la secono Secono de la secono d		e de la construcción Seconda de la construcción Seconda de la construcción de la construcción de la construcción de la construcción d			ta Ali Alita da Cala
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\* See explanation of comments in Table 1B

#### TABLE 1B CODES USED IN COMMENTS COLUMN

- >MDL = 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.

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### **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

ta 1. – Standard Standard († 1990) 1. – Standard († 1990) 1. – Standard († 1990)

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#### DATA SUMMARY FORM: INORGANIC

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Revised 09/99

Case #: 37823	SDG: MC81T3	Number of Soil Samples
Site :	PRICE BATTERY	Number of Water Samples
Lab. :	BONNER	

Sample Number :		MC81T3		MC81T4		MC81T5		MC81T7		MC81T8	
Sampling Location :		MP34-81		MP44-9		MP44-33		MP44-57		MP44-81	
Matrix :		Soil		Soil		Soll		Soll		Soll	
Units :	ч. I	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 :	1	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	teactive and a local state	R	0.45	J	1.2	J	0.38	J La Maillea de	0.72	J
ARSENIC	6841	S. 820.		3.8		AN 112		<u>19 140</u>		584	ый»,
*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)

MC81T9 MC81W0 MC81W2 MC81W4 Sample Number : MC81W6 MP50-9 MP50-33 MP48-33 MP48-81 MP50-57 Sampling Location : Soil Matrix : Soil Soil Soll Soil Units : mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg 9/16/2008 9/16/2008 9/17/2008 9/17/2008 9/16/2008 Date Sampled : Time Sampled : 15:10 15:25 08:00 08:30 15:35 87.7 87.2 84.7 87.8 87.8 %Solids : **Dilution Factor :** 1.0 1.0 1.0 1.0 1.0 ANALYTE CRQL Result Result Result Flag Flag Result Flag Flag Result Flag ANTIMONY 6 0.37 2.6 0.92 0.33 J J J 0.75 J J ARSENIC ) As 3.0 5,9 4.0 2.9 6.1 84.3 "LEAD 17,2 307 462 1 8.1 16.2

CRQL = Contract Required Quantitation Limit

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / (%Solids/ 100)

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

#### DATA SUMMARY FORM: INORGANIC

.

Revised 09/99

Case #: 37823	SDG : MC81T3	
Site :	PRICE BATTERY	
Lab. :	BONNER	

Sample Number :		MC81W7		1 v							·	ŀ
Sampling Location :		MP50-81		4			'					
Matrix :	•	Soil			50 C (		1				-	
Units :		mg/Kg			• •						-	ł
Date Sampled :	· ·	9/16/2008	- V1 - 1				•					
Time Sampled :		15:45	· •		-		•					[
%Solids :	1.4	89.1										
Dilution Factor :	يستريد النب	1.0		والمعالم سنطقي فالتقار الرمير فس							-	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	
ANTIMONY	<b>6</b>	0.51	J Martik						\$ <i>125.3</i> ;	ARTS (1988)	5. P.	
ARSENIC *LEAD	s, s≉si 1	\$ <b>6</b> 5 10.5	L L	nder volgen fan fan fan fan fan fan fan fan fan fa	(ur. 194	esa ya			e a A		ar sa	

#### CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / (%Solids/ 100)

# Appendix C

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# Chain-of-Custody Records

	USEPA Contract Labor Inorganic Traffic Repo		Reference Case: 37823 Client No:				
Region: Project Code:	3 CT4356	Date Shipped: Carrier Name:	9/17/2008	Chain of Custod	y Record	Sampler Signature:	
Account Code: CERCLIS ID:		Airbill:	790578927422	Relinquished By	(Date/Time)	Received By	(Date/Time)
Spiil ID:	AE2	Shipped to:	Bonner Analytical Testing Co.	1		·	
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA		2703 Oak Grove Road Hattiesburg MS 39402	2			
Project Leader:	Lucinda Pype		8012642834	3			
Action:				4		· · · · ·	
Sampling Co:	CDM						
<u></u>	······································		······································				<u>.</u>

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 Oniy) (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 (lce Only) (1)	MP44-57	S: 09/16/2008 14:15		

Shipment for Case Complete? N	Sample (s) to be used for laboratory QC:	Additional Sampler Signat	ure (s):	Chain Of Custody Seal Number :
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	···· <u>t</u>	<u> </u>	

### COC Number : 3-103246740-091708-0003

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

SORMS II Lite Help Desk. CSC. 15000 Conference Center Dr., Chantiliv. VA 20151-3819: Phone 703/818-4200: Fax 703/818-4602; e-Mail f2lite@fedcsc.com



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· ·	USEPA Contract Inorganic Traffic	Labo Repo	ratory Prog rt & Chain	gram of Custody Record		Reference Ca Client No:	<b>se:</b> 37823	R
Region:	3		Date Shipped:	9/17/2008	Chain of Custod	y Record	Sampler Signature:	•
Account Code:	CT4356		Carrier Name:	FedEx		·		
CERCLISID:			Altoilt:	790578927422	Relinquished By	(Date/Time)	Received By	(Dete/Time)
Spiil ID:	AE2		Shipped to:	Bonner Analytical Testing Co.	1			
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA			2703 Oak Grove Road Hattiesburg MS 39402	2			
Project Leader:	Lucinda Pype			6012642854	3			
Action:					4			
Sampling Co:	CDM			·				
	MATRIX/	TYPE	ANALYSIS/	TAG No./	SAMPLING	SAMPL	E COLLECT	QC

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SAMPLE No.	SAMPLER	TYPE	TURNAROUND	PRESERVATIVE/Bottles	LOCATION	DATE/TIME	Туре	
MC81T8	Soil (>12*)/ David Michailof	2	ICP Sb, As (14)	006-107 (loe 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	. <b></b>	
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 : Compos	ite = 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.

	USEPA Contract Labor Inorganic Traffic Repor	Reference Cas Client No:	R				
Region:	3	Date Shipped:	9/17/2008	Chain of Custod	y Record	Sampler Signature:	
	CT4356	Carrier Name:	FedEx				
Account Code:		Airbill:	790578927422	Relinquished By	(Date/Time)	Received By	(Date/Time)
CERCLISID:		Shippeditor	Denney Angl. Street Treeting Co.	· · · · ·	· · · · · · · · · · · ·		
Spill ID:	AE2	ompos w.	Bonner Analytical Testing Co. 2702 Oak Grave Bood	1			
Site Name / City/State:	37823 - Price Battery OU2 - 092008 PA		Hattiesburg MS 39402	2			
Project Leader:	Lucinda Pype		6012642654	3	tion to the second		
Action:				4			
Sampling Co:	CDM					<u> </u>	
	· · · · ·			• . • .			

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	-
		• •					

· <u>·</u> ·

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signature (s):	Chain Of Custody Seal	Chain Of Custody Seal Number :		
N						
Analysis Key:	Concentration : L = Low, M = Medium, H = High, L/M = Lo	v/Medium. Type/Designate : Composite = C.	Grab = G, Both = B Shipment Iced?	······································		
ICP Sb. As = ICP Sb. A	As, Pb, TM/Hg = CLP TAL Total Metals/HG			· · ·		
I						

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280

### COC Number : 3-103246740-091708-0003

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

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

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AR302896

### U.S. EPA Region III Analytical Request Form

**Revision 10.06** 

MTS 9-2-08

	ASQAB U	SE ONLY	
RAS#	CT4356	Analytical	TAT
DAS#			111
NSF#			17

|--|

Date: 25 August 200	008 Site Activity: RI/FS Oversight										
Site Name: Price Battery				Street Address: 251 Grand Street							
City: Hamburg State: PA			PA	La	titude:			Longitud	le:		
Program: Superfund		I	Acct. #: 2	2008 T03 V 302DD2	C A3	3E2BD02	CE	ERCLIS #: PA	N00030567	19	
Site ID: N/A Spill ID: N/A			N/A			OF	perable Unit: 2	2			
Site Specific QA Plan Submitted: 🗌 No 🖾 Yes Title: Price			Price Battery Operat	ole U	Init 2 RI/FS Oversight	t Dre	aft SMP		Date Approved: 5/	12/08	
EPA Project Leader: .	John Banks		Phon	e#: 215-814-3214		Cell Phone #:			E-mail: ba	inks.john-d@epa.gov	
Request Preparer: An	drea Soo		Phon	ie#: 610 293 0450		Cell Phone #: 610-30	04-08	803	E-mail: so	oac@cdm.com	
Site Leader: Lucinda	Рурс	_	Phon	ie#: 717-560-7500		Cell Phone #:			E-mail: pypelj@cdm.com		
Contractor: CDM EPA			EPA CO/PO: Meli	A CO/PO: Melisa Hoffman							
#Samples 34	amples 34 Matrix: soil Parameter: Le			Parameter: Lead, A	Antir	mony, and Arsenic		Bennee	Method: 1	ILM05.4 ICP-AES	28183
#Samples 1	Matrix: soil Parameter: ICP m			Parameter: ICP me	etals	+ Hg		V	Method: I	LM05.4 ICP-AES	25184
#Samples 10	10 Matrix: soil Parameter: TCL V			OC		_	Shealer	Method: S	SOM01.2, low soil	.28184	
#Samples 10	) Matrix: soil Parameter: TCL S			voc	2		1	Method: S	SOM01.2, low soil	28187	
#Samples 2	Matrix: soil Parameter: TCL P			CB				Method: S	SOM01.2	25155	
#Samples 2	2 Matrix: water non-potable Parameter: ICP M			etals	+ Hg (Total)		Bonner	Method: I	LM05.4 ICP-AES	1 25155	
#Samples 2	2 Matrix: water non-potable Parameter: ICP M			etals	+ Hg (Dissolved)		V	Method: I	LM05.4 ICP-AES	$\overline{}$	
#Samples 2	ples 2 Matrix: water non-potable Parameter: TCL V			OC			Shiply	Method: S	SOM01.2, trace water	2.5189	
#Samples 2 Matrix: water non-potable · Parameter: TCL S				voc	2		V	Method: S	SOM01.2, low water	28196	
Ship Date From: 9/08	Ship Date From: 9/08/2008 (9/12) Ship Date To: 10/31/2008				Org	g. Validation Level M	ИЗ		Inorg. V	Validation Level IM2	
Unvalidated Data Requ	uested: 🗌 No	🛛 Yes 🛛	f Yes, T	AT Needed: 🗌 14 c	lays	🛛 7days 🗌 72hrs		48hrs 🗌 241	nrs 🗌 Othe	er (Specify) + 3 days for	or CADRE Est
Validated Data Packag	ge Due: 🗌 42 d	ays 🗌 30	days [	] 21days 🗌 14 da	ys	Other (Specify) 28	8 day	rs 7	425	14/214	
Electronic Data Delive	Electronic Data Deliverables Required: No X 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 sourcia cdm.com or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (sooac(acdm.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					
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·			· ·					
<i>i</i>		1 - C C C C C C C C		÷ +				
i - E Mere								

Were ICP-AES and ICP interelement corrections applied?	(Yes/No)	ICP-AES Yès	ICP-MS 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)	<u>No</u>	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: <u>CUK</u>	Name: <u>Chris Bonner</u>
Date: 10/01/08	Title: President

## **Bonner Analytical Testing Company**



2703 Oak Grove Road, Hattlesburg, 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  $3^{\circ}$ C. Samples were received in good condition except for the following discrepancies: 5.5 (b.1)

1. No QCs are listed on the TR/COC for the following SDGs:

<u>SDG</u>	<u>QC</u>
MC81S9	MC81S9
MC81T3	MC81T3
m1	1641

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 199

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-	Ø( <sub>BPA S</sub>	ample #	nc81	Γ3	
Date & Time 9 / 30/2008	@ 1109	· · ·			: 
<u>Metals:</u> 2,0797 <sub>µg/L</sub> (Analyte <u>\$6</u> ) *	(0.100 L) *	100 %	1000 g	1 mg _	0.27mg/Kg
	(1.00 g)	77.9%	1 kg	1000 µg	

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 Culu C Wan\_ 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

#### ANALYTICAL SERVICE AND QUALITY ASSURANCE BRANCH OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

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LOCKHEED

We never forget who we're working for<sup>be</sup>

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

SUBJECT: Level IM2 Inorganic Data Validation for Case 37823 SDG: MC81S9 Site: Price Battery

- FROM: Shilpa Udani 5u 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 ( $\leq 5X$ ) 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 analytes 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.

#### <u>NOTES</u>

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,  $\pm$  CRQL) for chromium (Cr). The RPD, however, was within Region 3 established control limits (35% RPD,  $\pm$  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 1ASUMMARY OF QUALIFIERS ON DATA SUMMARY FORMS AFTER<br/>DATA VALIDATIONTABLE 1BCODES USED IN COMMENTS COLUMN OF TABLES 1AAPPENDIX AGLOSSARY OF DATA QUALIFIER CODESAPPENDIX BDATA SUMMARY FORM(S)APPENDIX CCHAIN OF CUSTODY RECORD(S)APPENDIX DLABORATORY CASE NARRATIVE(S)

DCN: 37823\_MC81S9. IM2

.

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

Case 37823, SDG MC81S9

1

<u>ANALYTE</u> Sb	<b>Samples</b> <u>Affected</u> MC81T0, MC81W1	POSITIVE <u>VALUES</u> L	NON- DETECTED <u>VALUES</u>	<u>BIAS</u> Low	<u>COMMENTS*</u> MSL (46%)
	MC81S9, MC81W3	J		: 4. 	> 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	В		High	PB (0.204 J mg/Kg) MSL (73%)
	MC81S9	<b>B</b>		High	PB (0.204 J mg/Kg) CBN (- 1.686 J ug/L) MSL (73%)
Na	All Samples	<b>B</b> .		High	PB (99.101 J mg/Kg)
TI	All Samples		ÚĽ	Low	CBN (- 6.516 J ug/L)
Zn	All Samples	ф.		à.	SD (32%)

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\* See explanation of comments in Table 1B

Page 1 of 1

# 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. Reported results are between MDL and CRQL and are considered estimated. >MDL =<CRQL MSH The matrix spike recovery was high (>125%) [the %recovery is in parenthesis]. Ħ Reported results may be biased high. Continuing calibration blanks had reported negative results greater than absolute CBN **X .....** value of MDLs [results are in parenthesis]. The reported result which is less than or equal to two times ( $\leq 2X$ ) 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 92.85 parenthesis]. Reported results which are less than or equal to five times ( $\leq 5X$ ) 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.

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### Appendix A

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### **Glossary of Data Qualifier Codes**

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AR302907

#### **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

X.

Q = No analytical result.

# Appendix B

14

14

## Data Summary Forms (DSFs)

Case #:	37823
Site :	
Lab. :	

SDG : MC81S9 PRICE BATTERY BONNER

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		CF	<b>ROL</b>	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM			20	4230		3930	a ana amin'ny farana	7470	kanka	19500	2 March	ieren ezerte erti	فرواند ا
ANTIMONY			6	2.0	J	,	L.	<b>18.2</b> -	$\Gamma_{\rm scale}$	1.0	J		
ARSENIC			1	4.8		5.7	dis Parte 1	6.7		2.7		Anti-interiority	 2019 - 11
BARIUM	10		20	6 <b>8.1</b>		55.9		69.1		78.6	144 194 194 194 194 194 194 194 194 194		的時
BERYLLIUM		2 20	0.5	0.60	lang dit	0.32	J Preison	0.50	J Seate	1.0 250-00-00-00-00-00-00-00-00-00-00-00-00-0		ost in ave	an da
CADMIUM	:	14	0.5 🗄	0.22	J	1.2	1 <sup>94</sup> B.C	1,51		0.26 (r	<b>V</b> ec		
CALCIUM	1 2.6	120 L	500	9650	2.4Å	156000 +	(b.Jer	97400	e ya califi	770 Mainte Maria	1. An an	Balgar Ry fair 1985g	
CHROMIUM	фя, q	44. 1	18 <b>1</b> 88	9.1		8.2	énair -	នេះក្រុះ <b>ា</b> វព្រួន	<b>\$</b> 105	19.3	94 (A) A (A)		2
COBALT	.02	en e	5 	4.1		3.5	J	<b>5.0</b>		14.3-			Kan d
COPPER	-0. G %		2.5	<u> </u>	ĸ	20.8	K	20.0	<u>8</u>	29.0	<b>N</b>		
IRON		ais r	10	16100	vZostina Alerto a	UCON	312, 42 1912, 53	13000	3400).	30400		stan and a standard and	200
*LEAD			2010) 500	<b>58.7</b> 00		2.4*30102V () 60200	2003. 1	41000		2000 000 000 000 000 000 000 000 000 00	1999 (C) 1999 (C)		Q2-53
MAGNESIUM	5.33	stars)	200	929 Maraili	(instal)	02300		41000		1210			ilionen 10-10-11
MANGANESE	1.100	1961 B	1.5 ⊖g ∩ 4	0.12	alte:	6640° 118° 16 <b>443</b> 81 0 42	991-883 1	0.21	399538	395 (karloot 1947) and	an (c. c.	이 같은 것 같은 것이 있다. 이 같은 것 같은	(86) - J.
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NUTLE	<i>.</i>	l I	90. 500	0 <b></b>	김영, 왕삼	1050	28.or	1710	QQC 10	1700	Bhra≛	Nation - 4 million	x-94
PUTASSIUM	5		36	505	 1975 -				1			하는 것이 같아.	1. 1. 1.
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ZINC	0 Z	ľ	6	15.2	ualitetti J	118	J	× -≪ is -⊴9 / 146	къстя   <b>ј</b>	73.6	J	n Aller State	Ъ.У́

CRQL = Contract Required Quantitation Limit

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / (%Solids/ 100)

"+" = Result is reported from diluted analysis.

#### SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

## Appendix C

# **Chain-of-Custody Records**

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	USEPA Contract Labor Inorganic Traffic Repo	atory Prog rt & Chain	gram of Custody Record		Reference Ca Client No:	<b>se:</b> 37823	B
Region: Project Code:	3 C <b>T4356</b>	Date Shipped: Canter Name:	9/17/2008	Chain of Custor	ly Record	Sampler Signature:	
CERCLIS ID:	<i>.</i>	Abbill:	790578927422	Relinquisted By	(Date/Time)	Received By	(Date/Time)
Spill ID:	AE2	Shipped to:	Bonner Analytical Testing Co.	1		_	
Site Name / City/State:	37823 - Price Battery OU2 - 092008		2703 Oak Grove Road Hattiesburg MS 39402	2			
Project Leader:	Lucinda Pype		6012642854	3			
Action:				4			
Sampling Co:	CDM ·					\$ 7	

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	SAMPLING	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	
MCB1T9	Soil (>127)/ 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)	<b>MP50-33</b>	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 :	3+4
N				
Analysis Key:	Concentration: L = Low, M = Medium, H = High, L/M = Low/Me	dium Type/Designate : Composite = C, Grab = G, Both = B	Shipment Iced?	
ICF SHIAS - ICP SH	As Ph. TM/Ha = CLP TAL Total Metals/HG	**************************************		

AL IOTAI Metals/Hu

### COC Number : 3-103246740-091708-0003

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

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	USEPA Contract Inorganic Traffic	Labo Repo	oratory Prog ort & Chain	Iram of Custody Record	1	Reference Ca Client No:	ise: 37823	
Region: Project Code: Account Code: CERCLIS ID: Spill ID: Site Name / City/State: Project Leader: Action: Sampling Co:	3 CT4356 AE2 37823 - Price Battery OU2 - 092000 PA Lucinda Pype COM		Date Shipped: Carter Name: Airbili: Shipped to:	9/17/2008 FedEx 790578927422 Bonner Analytical Testing Co. 2703 Oak Grove Road Hattiesburg MS 39402 6012642854	Chain of Custo Relinquished By 1 2 3 4	dy Record (Date/Time)	Sampler Signature: Recolved By	(Date/Time)
INORGANIC SAMPLE No. MC81S9	MATRIX/ SAMPLER Soil (> 12")/ David Michailof	TYPE 2	ANALYSIS/ TURNAROUND TM/Hg (14)	TAG No./ PRESERVATIVE/Bottles 006-100 (ice Only) (1)	SAMPLING LOCATION MP34-33	SAMPL DA S: 09/1	E COLLECT TE/TIME 6/2008 11:15 /	QC Type

MC81T0	Soil (>12")/ David Michailof	2	TM/Hg (14)	006-101 (Ice Only) (1)	MP34-57	S: 09/16/2008 11:30 🖌	. 30
MC81T3	Soil (>12")/ David Michallof	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 Michaitol	2	ICP Sb. As (14)	006-104 (fce Only) (1)	MP44-33	S: 09/16/2008 14:00	<u>.</u>
MC81T7	Soil (>12")/ David Michailof	2	ICP Sb. As (14)	006-106 (Ice Only) (1)	MP44-57	S: 09/16/2008 14:15	. **6

Shipment for Case Complete?	Sample (s) to be used for laboratory QC:	Additional Sampler Signatu	ıre (s):	Chain Of Custody	Seal Number :
- N			·		
Analysis Key:	Concentration : L = Low, M = Medium, H = High, L/M = Low/Me	dium 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.

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# U.S. EPA Region III Analytical Request Form Revision 10.06

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ЯTS	9-2-02	8 - 18%
6	ASQAB U	SEONLY
RAS#	CT4356	Analytical TAT
DAS#		7111
NSF#	8. <sup>777</sup>	1/7

378	23							-				
Date: 25 August 200	8	Site Activit	y: RI/FS	Oversight					<u>.</u>			
Site Name: Price Batte	ry			5	Stree	et Address: 251 Grand	d Street					
City: Hamburg			State: H	PA I	Latit	ude:			Longitude	); ;;		
Program: Superfund			Acct. #: 2	008 T03 1 302DD2C	A3E	E2BD02	CERCI	LIS #: PA	N000305679	)		
Site ID: N/A			Spill ID:	N/A			Operab	ele Unit: 2	2			
Site Specific QA Plan	Submitted:	No Ye	s Title:	Price Battery Operable	e Un	it 2 RI/FS Oversight	Draft S	MP		Date Approved: 5/	12/08	
EPA Project Leader: J	ohn Banks		Phon	e#: 215-814-3214	1	Cell Phone #:			E-mail: bar	1ks.john-d@epa.gov		
Request Preparer: An	drea Soo	······································	Phon	e#: 610 293 0450		Cell Phone #: 610-30	4-0803		E-mail: soc	bac@cdm.com		
Site Leader: Lucinda	Рурс		Phon	e#: 717-560-7500		Cell Phone #:			E-mail: py	pelj@cdm.com	<u></u>	
Contractor: CDM			· · ·	EPA CO/PO: Melisa	ia Ho	offman						
#Samples 34	Matrix: soil			Parameter: Lead. Ar	ntim	ony, and Arsenic	Ē	CHIEF	Method: II	LM05.4 ICP-AES	23	2183
#Samples 1	Matrix: soil	,		Parameter: ICP meta	ials +	- Hg		V	Method: II	LM05.4 ICP-AES	,2,9	184
#Samples 10	Matrix: soil	· · · · · · · · · · · · · · · · · · ·		Parameter: TCL VO	Ж		.5	heather	Method: S	OM01.2. low soil	75	186
#Samples 1()	Matrix: soil			Parameter: TCL SV	VOC 1			Method: S	OM01.2, low soil	.25	3187	
#Samples 2	Matrix: soil			Parameter: TCL PC	В		·.	1	Method: S	OM01.2	25	3188
#Samples 2	Matrix: water	non-potable		Parameter: ICP Met	tals +	Hg (Total)	73/	shnee	Method: II	LM05.4 ICP-AES	<u> </u>	5725
#Samples 2	Matrix: water	non-potable		Parameter: ICP Met	tals +	Hg (Dissolved)	•	1/	Method: II	LM05.4 ICP-AES		
#Samples 2	Matrix: water	non-potable		Parameter: TCL VO	C	*	Sh	Alex	Method: S	OM01.2, trace water	3	.5154
#Samples 2	Matrix: water	non-potable		Parameter: TCL SV	/0C			VI	Method: S	OM01.2, low water	.2	8146
Ship Date From: 9/08	/2008 (q/12)	Ship Date	e To: 10/	31/2008	Org.	Validation Level M	13		Inorg. V	alidation Level 1M2		
Unvalidated Data Req	uested: 🗌 No	X Yes	If Yes, T	AT Needed: 🚺 14 da	ays	🛛 7days 🔲 72hrs	48h	rs 🗌 24	hrs 🗌 Oihe	r (Specify) + 3 days f	or CADRE	= E5A
Validated Data Packag	ge Due: 🗌 42	days 🗌 30	days [	] 21days 🗍 14 days	s D	Other (Specify) 28	3 days	Ĩ	421	14/214	<u></u>	
Electronic Data Delive	rables Required	i: 🗌 No 💈	🛛 Yes	(EDDs will be provide	led in	Region 3 EDD Form	nat)		7	./		
Special Instructions: we will be adopting th attached PDF file in T sopara edm.com or (6 and Nancy Forman (Fi	The unvalidated e CLP methods able 1a under "I 10)304-0803. I stmanNAså edn	data is requ SOM01.2 at RL." If there Please send u com), and J	ested via nd ILM05 are any r nvalidate onah Jack	SMO/ESAT – 7 days a 5.4 in place of the PRP eporting limits that car d EDDs and validated tson (Jackson IM@cdn	analy "s SV innot data n.cor	ylical TAT + 3 days f W846 methods listed be met by the reques packages, including m) when available. C	or comp in the at ited meth excel an Quantitat	liance rev tached Pl tods, plea d databas ion limits	riew = 10 day DF file. Repo se contact An e-ready form are provided	ys at no additional cost. orting limits required at ndrea Soo immediately hats to Andrea Soo (soo l in the PDF file that wa	Please no re listed in at ac(a cdm.c as attached	te that the rom)

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FORM ARF- 10/06

AR302914

## **Appendix D**

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## Laboratory Case Narrative

AR302915

a.

#### COVER PAGE

Lab Name:	Bonner Analytical Testing Company	Contract: EPW06055	
Lab Code:	BONNER Case No: 37823	NRAS No.: SDG N	ю: <u>MC8159</u>
SOW No.:	1LM05.4		
	EPA Sample No.	Lab Sample ID	
	MC81S9	0809240-01	
	MC81S9D	8092210-DUP1	
	MC81S95	8092210-MS1	
	MC81TO	0809240-02	
	MC81W1	0809240-03	
	MC81W3	0809240-04	

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		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	g the analysis of the Serial Dilution.
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 		 		 	 	····	 	
 		 		 	 	- <u></u>	 	

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:	alk	Name:	Christopher M. Bonner
Date: .	10/01/08	Title:	Inorganic Laboratory Manager AR302916
	COVI	ER PAGE	ILM05.4

## **Bonner Analytical Testing Company**



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

#### SDG NARRATIVE:

<u>SDG Númber: MC81S9</u> <u>Case Number: 37823</u> 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:

<u>SDG</u>	- <u>QC</u>
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

37823 8092210 SDG No: MC81S9 Case No.: Batch No.: Date Began: / 09/19/08 Time Began: 15:45 Temperature Began: 103.0 09/22/08 13:15 Temperature Finished: 102.0 Date Finished: Time Finished MC81S9 MC81T0 MC81W1 MC81W3 EPA Sample ID Laboratory ID 0809240-01 0809240-02 0809240-03 0809240-04 Pan ID 1 1 2 3 4 6 7 8 9 10 5 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 0.00 0.00 5.79 5.49 5.48 0.00 0.00 0.00 0.00 Pan + Sample (Final) 6.07 5.77 6.33 5.94 5.98 Sample Weight (Final) 0.00 5.05 4.74 5.29 4.92 4.95 0.00 0.00 0.00 0.00 0.00 Total Solids 86.3% 88.6% #DIV/0! #DIV/0! #D!V/0! #DIV/0! 89.6% 90.3% #DIV/0! #DIV/0! 91.4% % RSD 2.60% Sample ID Laboratory ID Pan ID 11 12 13 14 15 18 20 16 17 19 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	
Analyst:	CDM	
Supervisor:	BGB	

Date:	9/19/2008	
Date:	9/22/2008	
Date:	10/1/2008	

AR302918

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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 (XXXXX 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# 60005) completed by the Region 111 Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

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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

OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

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

LOCKNEED 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 Corganic Data Reviewer

Mahboobeh Mecanic<sup>4,4</sup> 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<sub>4</sub>, benzene-d<sub>6</sub>, 1,2-dichloropropane-d<sub>6</sub>, toluene-d<sub>8</sub>, trans-1,3-dichloropropene-d<sub>4</sub>, 1,1,2,2-tetrachloroethane-d<sub>2</sub> and 1,2-dichlorobenzene-d<sub>4</sub> 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 "L" unless not reported.

#### <u>NOTES</u>

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• 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.

<b>Fraction</b>	<u>Blanks</u>	Compound	Concentration (ug/Kg)	Affected Samples
Volatile	Method (VBLK17)	1,1-dichloroethene	0.87 J	C0005, C0008
	(122227)	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.

ø 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. •

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#### **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)

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DCN: 37823 C0005

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### 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

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DATA SUMMARY FORM: Volatiles

Case #: 37823	SDG : C0005
Site :	PRICE BATTERY
Lab. :	SHEALY

Number of Water Samples : 0

Number of Sediment Samples: 0

Sample Number -		C0005		C0008							1100,110,000
Sampling Location :		MP08-09	,	MP08-81	1						
Matrix :		Soil		Soil							
Units :		ua/Ka		ua/Ka							
Date Sampled :		9/11/2008	3	9/11/200	в						
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 chlorids	5,0										
Bromomethane	5.0										
Chloraethane	5.0		ĝ., 4								
Trichlorofluoromethane	5.0		UL								
1.1-Dichloroethene	5.0	1.3	8	0,81	8						
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0		UL				L				
Acetone	10	57	В	13.	B						
Carbon Disulfide	5.0	0.97	J								
Methyl acetate	5,0		UL								
Methylene chloride	5.0	1.1	В	0.58	В						
trans-1,2-Dichloroethene	5.0										
Methyl tert-butyl ether	5.0		UL				a stanactica				
1,1-Dichloroethane	.5.0						Í.	a san			
cis-1,2-Dichloroethene	5.0		: 								
2-Butanone	10	23	₿	6.2	B						
Bromochloromethane	5.0										
Chloroform	5.0										
1,1,1-Trichloroethane	5.0		ŲL						Xamora		
Cyclohexane	5.0		UU								
Carbon tetrachloride	5.0	14	L								
Benzene	5.0		UL								
1,2-Dichloroethane	<b>5.0</b> .		UL								
1,4-Dioxarie	100		B		В.,	1 - 20					
Trichloroethene	5.0		UL								
Methylcyclohexane	5.0		UI.								
1,2-Dichloropropane	5.0		UL			1					
Bromodichloromethane	5.0		UL.								
cis-1,3-Dichloropropene	5.0		UL								
4-Methyl-2-pentanone	NUTU.	1.7	94 <i>0</i> 00	0,67	la 🛛		80.0		100 A		
	5.U		UL Maria								
narans-1.3-Dichloropropene	s siu		e de la compañía de l		<b>1</b> //////						S

#### DATA SUMMARY FORM: Volatiles

Case #: 37823	۰.		SDG : C0005
Site :			PRICE BATTERY
Lab. :		5 A.	SHEALY

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Sample Number :		C0005	enced addee	C0008	n hinning h				occorderer		
Sampling Location :		MP08-09		MP08-81							
Matrix :		Soil		Soil							and the second se
Units :		ug/Kg		ug/Kg							
Date Sampled :		9/11/2008	3	9/11/200	З.		]				
Time Sampled :		12:15		12:55			Í				
%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	В	6,4	B						
Dibromechloromethane	5.0										
1,2-Dibromoethane	5.0		UL			- :					
Chlorobenzene	5.0		ŲL,								
Ethylbenzene	5.0		UĽ.								
o-Xylene	5.0		UL.								
m,p-Xylene	5,0		UL							essacces to article cutor	
Styrene	5.0	۰.	UL.								
Bromoform	5.0								****		-
lsopropylbenzene	5.0		UL						232		
1,1,2,2-Tetrachloroethane	5,0		UL						marine	47.97.100 A.111.11.11	
-1,3-Dichlorobenzene	5.0		UL								
1,4-Dichlorobenzene	5.0		UL			aanaa ahaa ahaa ah	ana) na	raanse ee aried	2556.7529×		
1,2-Dichlorobenzene	5.0		UL			and the second	<b>2</b> 90				
1,2-Dibromo-3-chloropropane	5.0		UL						0.7636273720		a a stritte
1,2,4-Trichlorobenzene	5.0	1.3	B	0,52	B						
1,2,3-Trichlorobenzene	5.0	1.4	В	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

DATA SUMMARY FORM: BNA

2

Case #: 37823 Site : Lab. : SDG : C0005 PRICE BATTERY SHEALY

- N	lumhor	of	Soil	Sam	nles	•
	AMULTINOL	<b>U</b> 1	000	oun	pico.	٠

Number of Water Samples: 0

Number of Sediment Samples: 0

Sample Number :		C0005		C0008							
Sampling Location :		MP08-09	3	MP08-81	1 -			••	·		
Matrix :		Soil		Soil		· ·					
Units :		ug/Kg		ug/Kg							
Date Sampled :		9/11/2008	в	9/11/200	8				1		
Time Sampled :		12:15		12:55						ļ	
%Moisture :		31		17							
Dilution Factor :		0.99		0.98							
Semivolatile Compound	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Benzaldehyde	170		1.00								
Phenol	170	·									
Bis(2-Chloroethyl)ether	170										
2-Chlorophenol	170										
2-Methylphenol	170										
2,2'-Oxybis(1-chloropropane)	170										
Acetophenone	170										
4-Methylphenol	170		ŀ								
N-Nitroso-di-n-propylamine	170										
Hexachloroethane	170										
Nitrobenzene .	170										
Isophorone	170								i		
2-Nitrophenol	170										
2,4-Dimethylphenol	170										
Bis(2-Chloroethoxy)methane	170										
2,4-Dichlorophenol	170		Ann agus an a								
Naphthalene	170										
4-Chloroaniline	170										
Hexachlorobutadiene	170										
Caprolactam	170										
4-Chlore 3 methylphenol	170										
2-Methylnaphthalene	170										
Hexachiorecyclopentadione	170										
2,4,6-Trichlorophenol	170										
2,4,5-Trichlorophenol	170										
1,1'-Biphenyl	170										
2-Chloronaphthalene	170										
2-Nitroanillne	330										
Dimethylphthalate	170							<u>`</u>			
2,6-Dinitrotoluene	170		onerrornes								
Acenaphthylene	170										
3-NitroanIline	330										
Acenaphthene	170										

#### DATA SUMMARY FORM: BNA

SDG : C0005
PRICE BATTERY
SHEALY

Sample Number :		C0005		C0008							
Sampling Location :		MP08-09		MP08-81							
Matrix :		Soll		Soil							
Units :		ug/Kg		ug/Kg		· .					
Date Sampled :		9/11/2008	3	9/11/2008	8						
Time Sampled :		12:15		12:55							
%Molsture :		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		1								
Diethylphthalate	170										
Fluorene	170										
4-Chlorophenyl-phenylether	170										
4-Nitroaniilne	330										
4,6-Dinitro-2-methylphenol	330										
NsNitrosodiphenylamine	170										
1,2,4,5-Tetrachlorobenzene	170										
4-Bromophenyl-phenylether	170										
Hexachlorobenzene	170					r Marin eine bertriken einen					
Alrazine	170										
Pentachlorophenol	330			-	*********	an a			-		
Phenanthtene	170	190	J.								
Anthracène	170	27	J								
Carbazole	170	9/01									
Di-n-butylphthalate	170			22	J						
Fluorenthene	170	460									
Pyrene	170	350				in e marze					
Butylbenzylphthalate	170										
3,3'-Dichlorobenzidine	·170										
Observer	170	21U	. <b>N</b>		1.68.10					N. 1892 - LL	
Chrysene	170	300							<i>.</i>		
Discontributedate	170										
Di-n-octyphinalate Deems (bithose altored	170	670							5. I.I.		
Benzo(k)fluoranthana	170	150									
Reprocedure	170	040	, i								
Indepo/1 2 3-cd)pyrepe	170	170	9 . I								
Dibenzo(a,b)anthrocono	170										
Benzo(a h i)perviene	170	180									
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 - %Molsture) / 100]

Revised 09/99

## Appendix C

### Chain of Custody Records

AR302930

\$€P/	USEPA C Organic	ontra Traffi	ct Laboratory c Report & Ch	Program ain of Cus	tody Reco	rd		•	Case DAS N	No:	37823	R
Region: Project Code:	3 CT4356			Date Shipped: Carrier Name:	9/11/2008 FedEx		Chai	in of Custody	Record		Sampler Signature:	
Account Code:	014000			Airbilk	79608698148	8	Relin	quished By	(Date / '	l'ine)	Received By	(Date / Time)
CERCLIS ID:	PAN000305	679		Shipped to:	Shealy Enviro	nmental	1					
Site Name/Stat	AEZ 8: Price Satter	v 0112 09	1908/PA		106 Vantage I Cayce SC 290	Point Drive	2					
Project Leader Action:	Lucinda Pyr	e RI/FS			(803) 791-970	0	3					
Sampling Co:	CDM						4				÷	
ORGANIC SAMPLE No.	MATRIX SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG PRESERVAT	No <i>i</i> TVE Bottles	STATION	-	SAMPLE	COLLECT	INO SAM	RGANIC PLE No.	QC Type
C0005	Soil (>12")/ David Michailof	ĽG	BNA (21), VOA (21)	100 (ice Only), Only), 102 (ice (ice Only) (5)	101 (ice Only), 103	MP08-09		S; 9/11/2008	12:15			
C0008	Soil (>12')/ David Michailof	ĽG	BNA (21), VOA (21)	106 (Ice Only), Only), 108 (Ice (Ice Only) (5)	107 (Ice Only), 109	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 Semivo	latiles, VOA = CLP TCL Volatiles		

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TR Number: 3-594095470-091108-0004 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

#### **REGION COPY** F2V5.1.047 Page 1 of 1

AR302931

.

### U.S. EPA Region III Analytical Request Form

Revision 10.06

<b>9</b>	ASQAB U	SE ONLY
RAS#	CT4356	Analytical TAT
DAS#	-	
NSF#		1 AM

0+X	<u> </u>		· ·		· *		<u> </u>	<u> </u>		
Date: 25 August 200	Site Activ	ity: RI/FS	Oversight		· · · · · · · · · · · · · · · · · · ·	· · · ·		<b>v</b> .		
Site Name: Price Battery			·	Street Address: 251 Grand Street						
City: Hamburg		State:	PA	Lati	itude:			Longitude:		
Program: Superfund		Acct. #: 2	2008 T03 🕅 302DD2	C A3	E2BD02	CERCLIS #	t: PAN	N000305679		
Site ID: N/A		Spill ID:	N/A			Operable U	nit: 2			
Site Specific QA Plan	Submitted: 🗌 No 🖾 Y	es Title:	Price Battery Operal	ble U	nit 2 RI/FS Oversight	Draft SMP			Date Approved: 5/	12/08
EPA Project Leader: .	John Banks	Phor	ie#: 215-814-3214		Cell Phone #:			E-mail: banl	ks.john-d@epa.gov	
Request Preparer: An	drea Soo	Phor	ne#: 610 293 0450		Cell Phone #: 610-30	4-0803		E-mail: sooa	ac@cdm.com	
Site Leader: Lucinda	Руре	Phor	ne#: 717-560-7500		Cell Phone #:			E-mail: pypelj@cdm.com		······
Contractor: CDM			EPA CO/PO: Mel	isa H	offman					
#Samples 34	Matrix: soil Parameter: L		Parameter: Lead,	Antimony, and Arsenic Benner		ee	Method: ILM05.4 ICP-AES 2-8183			
#Samples 1	Matrix: soil Paran		Parameter: ICP metals + Hg			Method: ILM05.4 ICP-AES 28184				
#Samples 10	10 Matrix: soil		Parameter: TCL VOC		Shial	ler	Method: SC	0M01.2, low soil	.28184	
#Samples 10	Matrix: soil Parameter: TCL		Parameter: TCL S	voc			Method: SC	0M01.2, low soil	.28187	
#Samples 2	Matrix: soil Parameter: TCL F		СВ	B Method: SOM01.2		DM01.2	28188			
#Samples 2	Matrix: water non-potabl	e	Parameter: ICP M	etals	+ Hg (Total)	Bohn	ee	Method: IL	M05.4 ICP-AES	1 28185
#Samples 2	Matrix: water non-potab	e	Parameter: ICP M	etals	+ Hg (Dissolved)	V		Method: IL	M05.4 ICP-AES	
#Samples 2	Matrix: water non-potabl	e	Parameter: TCL V	OC.		Shal	ы	Method: SC	M01.2, trace water	2-8189
#Samples 2 Matrix: water non-potable Pa			Parameter: TCL S	VOC		V	1	Method: SC	DM01.2, low water	28196
Ship Date From: 9/08/2008 (9/12) Ship Date To: 10/31/2008			31/2008	Org	. Validation Level M	(3		Inorg. Va	lidation Level IM2	
Unvalidated Data Requested: 🗌 No 🛛 Yes If Yes, TAT Needed: 🗌 14 days 🖾 7 days 🗌 72hrs 🗌 48hrs 🗋 24hrs 🗋 Other (Specify) + 3 days for CADRE Est										
Validated Data Package Due: 42 days 30 days 21 days 14 days Other (Specify) 28 days 7/27 14/214										
Electronic Data Delive	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 sooacca edm.com or (610)304-0803. Please send unvalidated EDDs and validated data packages, including excel and database-ready formats to Andrea Soo (sooacacedm.com) and Nancy Forman (FormanNA(a edm.com), and Jonah Jackson (JacksonJM@edm.com) when available. Quantitation limits are provided in the PDF file that was attached to this lab request.

1

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 VOA Fraction Number		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
3	BNA DB-5MS, 30m x 0.25mm x 0.5um
Trap	OI Trap #10

VOA Equation	Soil sample concentration (ug/Kg) = $\frac{(Ax)(Is)(DF)}{(Ais)(\overline{RF})(Ws)(D)}$
	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. $D = \frac{100 - \% \text{moisture}}{100}$

BNA Equation	Soil sample concentration (ug/Kg) = $\frac{(Ax)(I_s)(Vt)(DF)(GPC)}{(I_s)(Vt)(DF)(GPC)}$
	(Ais)(RRF)(Vi)(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. $GPC = V_{is}/V_{out}$ : GPC factor. $V_{is}$ is the volume of extract loaded onto GPC column. $V_{out}$ is the volume of extract collected after GPC cleanup. $V_{is}$ is underward the constraint of when $V_{is} = 1000 \text{ M}$ . If GPC
	$V_t$ is volume of the concentrated extract in u.t. (if no GPC cleanup is performed, then $V_t = 10000L$ , 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, is the weight of sample extracted in g $D^{\Rightarrow} \frac{100 - \% \text{Moisture}}{100}$

#### 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. Penilis

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.



Price Batt	ery OU2		·····			
Case 3782	Case 37823					
SDG C000	)5					
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,

ر المراجع المحروط ا

Ъ́а;

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

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,	
Saroj,	
***Summary Start***	
-Discrepancies with tags, jars, and/or TR/COC-	
Issue 1: The TR/COC Jists the TAT as 21 days; however, the Scheduling	
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	
AR302938 280 of 2	96 /17/08

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 a and a state of the Angle of the state of State of the state of

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Appendix E

## Tentatively Identified Compounds (TICs)

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AR302940

	1К - ፑ	FORM I SV-TIC		EPA SA	APLE NO.
	SEMIVOLATILE ORGA TENTATIVELY	NICS ANALYSIS	DATA SHEN 1POUNDS	ST CI	)005
Lab Name: Shealy Environm	ental Services, Inc.	Contr	act: EP-W-	05-031	
Lab Code: SHEALY Cas	se No.: <u>37823</u>	Mod. Ref No.	:	SDG No.: C0005	
Matrix: (SOIL/SED/WAT	rer)Soil	Lab S	ample ID:	J112005-001	
Sample wt/vol:3	0.2 (g/mL) g	Lab F	ile ID: <u>09</u>	1805	
Level: (TRACE or LOW,	MED) LOW	Extra	action: (T	ype) SONC	
% Moisture: <u>31</u>	Decanted: (Y/N)	N Date	Received:	09/12/2008	
Concentrated Extract	Volume: <u>500</u>	(uL) Date	Extracted	09/15/2008	
Injection Volume: 1.0	(uL) GPC Fact	tor: 2.0	Date Anal	lyzed: <u>09/18/200</u>	8
GPC Cleanup: (Y/N)	pH: 6.8	Dilut	ion Facto	r: <u>1.0</u>	
CONCENTRATION UNITS:	(ug/L or ug/Kg <u>)ug/</u>	'kg		<b>1</b> ·	
CAS NUMBER	COMPOUND NAME		RŤ	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					
0.9	· · · · · · · · · · · · · · · · · · ·				
10	I				
11			<u>.</u>		
1.2			· · · · · · · · · · · · · · · · · · ·		
1 2					
14			<u>.</u>		
16					· · · · · · · · · · · · · · · · · · ·
17					
18					
19				· · · · · · · · · · · · · · · · · · ·	
20					
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26				·····	
27			· · · · · ·		
28	l				
29		· · · · · · · · · · · · · · · · · · ·			
30					
E966796 <sup>2</sup>	Total Alkanes		N/A		

<sup>2</sup>EPA-designated Registry Number.

SOM01.2 (10/2006)

1

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. Re	f No.: SDG No.: C0005
Matrix: (SOIL/SED/WATER) <u>Soil</u>	Lab Sample ID: <u>J12005-002</u>
Sample wt/vol:30.7 (g/mL) g	Lab File ID: 091806
Level: (TRACE or LOW/MED) LOW	Extraction: (Type) SONC
<pre>% Moisture: 17Decanted: (Y/N)</pre>	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 CONCENTRATION UNITS: (ug/L or ug/Kg)ug/kg	Dilution Factor: 1.0

C	AS NUMBER	COMPOUND NAME	RT	EST. CONC.	<u>Q</u>
01 31158-	-91-5	Hexadecanoic acid, 1,1-	13.060	450	NJ
02					
03			[		
04					
05	······································				
06				·	
07					
08					
09	·		<u> </u>		
10					·
11			- -		
12					
13					
14				-	1
15					
16					
17					
18					
19					
20					
21					
22					
23					
24			1 - A - A		
25		· · · · · · · · · · · · · · · · · · ·			
26			1		
27	·····	· · · · · · · · · · · · · · · · · · ·			
28				· · · · · · · · · · · · · · · · · · ·	
29					
30					
E96679	6 <sup>2</sup>	Total Alkanes	N/A		

<sup>2</sup>EPA-designated Registry Number.

A state of the sta

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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 K W (W) 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

#### OFFICE OF ANALYTICAL SERVICES AND QUALITY ASSURANCE

AR302943

LOCKHEED MAR

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<sup>6</sup> Inorganic Data Reviewer

> Mahboobeh Mecanic<sup>AH</sup> 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 ( $\leq$ 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  $9.0^{\circ}$ C when received by the laboratory. This temperature is outside the required control limit of  $4^{\circ}$ 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

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#### DCN: 37823.MC0005IM2.doc

Page 1 of 1

# TABLE 1ASUMMARY OF QUALIFIERS ON DATA SUMMARYFORM AFTER DATA VALIDATION

#### Case 37823, SDG MC0005

ANALYTE	SAMPLES <u>AFFECTED</u>	POSITIVE <u>VALUES</u>	NON- DETECTED VALUES	<u>BIAS</u>	COMMENTS*
Sb	MC0006, MC0010, MC0011	B		High	ССВ (2.410 J µg/L) MSL (32%)
	MC0005, MC0009	· <b>J</b> ·			>MDL <crql MSL (32%)</crql 
	MC0008		UL .	Low	MSL (32%)
As	MC0008	В		High	ССВ (1.650 J µg/L) MSL (70%)
·	All Samples Except MC0008	L		Low	>MDL <crql MSL (70%)</crql 
Pb	All Samples	J			ISD (23%)

\* See explanation of comments in Table 1B

### TABLE 1BCODES USED IN COMMENTS COLUMN

- CCB = Continuing calibration blanks had results > MDLs [results are in parenthesis].Positive results which are  $\leq 5X$  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 = 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.

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### 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.

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### Appendix B

### Data Summary Forms

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#### DATA SUMMARY FORM: INORGANIC

Case #: 37823	SDG : MC0005
Site :	PRICE BATTERY
Lab. :	BONNER

Number of Soll Samples : 6

Number of Water Samples : 0

Sample Number :	MC0005		MC0006		MC0008		MC0009		MC0010		
Sampling Location :	MP08-09		MP08-33		MP08-81		MP09-09		MP09-33		
Matrix :	Soil		Soll		Soil		Soil		Soil		
Units :	ma/Ka		ma/Ka		ma/Ka		ma/Ka		ma/Ka		
Date Sampled :	9/11/2008		9/11/2008 9/		9/11/2008		9/11/2008		9/11/2008		
Time Sampled :		12:15		12:31 12:		12:55		15:55		16:00	
%Solids :		74.8		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	В		UL	2.9	J	0.94	в
ARSENIC		9 <b>12</b>		26	<b>1</b> , 22	0.53		<u> (</u> <b>)</b>		<b>.</b>	4
*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	<u>ال الجارة (مطلومين من</u>				, ,					
Sampling Location :	ampling Location :										
Matrix :		Soil									
Units :	mg/Kg	mg/Kg									
Date Sampled :		9/11/2008									1
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	В		· ·						
ARSENIC	1	3,0	L				N				
*LEAD	1	224	J	۰.							

CRQL = Contract Required Quantitation Limit

To calculate sample quantitation limits: (CRQL \* Dilution Factor) / (%Solids/ 100)

SEE NARRATIVE FOR CODE DEFINITIONS

Revised 09/99

### Appendix C

### Chain-of-Custody Records

<i></i> €₽∕	USEPA Co Inorganic	USEPA Contract Laboratory Program Inorganic Traffic Report & Chain of Custody Record											R
Region: 3			, <u>, , , , , , , , , , , , , , , , , , </u>	Date Shipped: 9/11/2008 C				n of Custody R	ecord		Sampler Signature:		
Account Code:	CT4356			Carrier Name:	FedEX 796086941863	1	Reline	uished By	(Date .	/ Time}	Received By	(Date / Ti	me)
CERCLIS ID:	PAN000305	679		Shipped to:	Bonner Analyti	cal	1						
Spill ID:	AE2				2703 Oak Grov	703 Oak Grove Road							
Brolect Leader	Price Batter	y OU2 09(	0908/PA		(601) 264-2854	5 33402 {					<u> </u>		
Action:	Combined F	RI/FS											]
Sampling Co:	CDM						4.				.		
INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG N PRESERVATI	io./ VE/ Bottles	STATION LOCATION		SAMPLE	E COLLECT E/TIME	OR( SAM)	GANIC PLE No.	QC Type	
MC0005	Soll (>12")/ David Michallof	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 Oniy) (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	⊔G	SB-AS-PB (21)	110 (Ice Only) (1	)	MP09-09		S: 9/11/2008	15:55				
MC0010	Soil (>12")/ David Michailof	Ľ∕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:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment lced?		
58-A5-PB = 50, AS, PD		· · · · · · · · · · · · · · · · · · ·			

#### TR Number: 3-465653622-092908-0001

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

F2V5.1.047 Page 1 of 1

REGION CO

# U.S. EPA Region III Analytical Request Form Revision 10.06

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STS 9-2-08	5
ASQAB US	SEONLY
RAS# CT4356	Analytical TAT
DAS#	7116
NSF#	117
RAS# CT4356 DAS# NSF#	Analytical TA

5+8	23										
Date: 25 August 200	)8	Site Activity	y: RI/FS	Oversight							
Site Name: Price Batt	ery				Street Address: 251 Grand Street						
City: Hamburg State: H			PA	Latitude:		Longitude:					
Program: Superfund		1	Acct, #: 2	2008 T03 1 302DD2C	CA3E2BD02	CERCLIS #: PA	N000305679				
Site ID: N/A		5	Spill ID:	N/A	· · · · · · · · · · · · · · · · · · ·	Operable Unit:	2				
Site Specific QA Plan	Submitted:	] No 🛛 Yes	s Title:	Price Battery Operabl	le Unit 2 RI/FS Oversight	Draft SMP		Date Approved: 5/	12/08		
EPA Project Leader:	John Banks	<u>, , , , , , , , , , , , , , , , , , , </u>	Phon	e#: 215-814-3214	Cell Phone #:	,	E-mail: banl	cs.john-d@epa.gov			
Request Preparer: An	drea Soo	· · ·	Phon	ie#: 610 293 0450	Cell Phone #: 610-3	04-0803	E-mail: sooa	c@cdm.com			
Site Leader: Lucinda	Руре		Phon	ie#: 717-560-7500	Cell Phone #:		E-mail: pype	elj@cdm.com			
Contractor: CDM				EPA CO/PO: Melis	sa Hoffman						
#Samples 34	Matrix: soil			Parameter: Lead, A	Intimony, and Arsenic	Benner	Method: IL	M05.4 ICP-AES	28183		
#Samples 1	Matrix: soil			Parameter: ICP met	tals + Hg	V	Method: IL	M05.4 ICP-AES	28184		
#Samples 10	Matrix: soil	<u> </u>		Parameter: TCL V(	OC .	Method: SO	M01.2, low soil	28186			
#Samples 10	Matrix: soil			Parameter: TCL SV	/0C	Method: SO	M01.2, low soil	28187			
#Samples 2	Matrix: soil			Parameter: TCL PC	Parameter: TCL PCB			M01.2	25188		
#Samples 2	Matrix: water	non-potable		Parameter: ICP Me	tals + Hg (Total)	Banner	Method: ILI	M05.4 ICP-AES	1 38155		
#Samples 2	Matrix: water	non-potable		Parameter: ICP Me	tals + Hg (Dissolved)	1/	Method: ILI	M05.4 ICP-AES	7		
#Samples 2	Matrix: water	non-potable		Parameter: TCL VO	DC	Shieles	Method: SO	M01.2, trace water	2 \$ 189		
#Samples 2	Matrix: water	non-potable		Parameter: TCL SV	/0C	- Ling	Method: SO	M01.2, low water	28196		
Ship Date From: 9/08	/2008 (9/12)	Ship Date	: To: 10/	31/2008	Org. Validation Level N	13	Inorg. Va	lidation Level IM2			
Unvalidated Data Req	ucsted: 🗌 No	Yes 1	If Yes, T.	AT Needed: 🗌 14 da	ays 🖾 7days 🗌 72hrs	48hrs 24	hrs 🗌 Other	(Specify) + 3 days for	T CADRE ESA		
Validated Data Packag	ge Due: 🗌 42 d	iays 🗌 30	days [	] 21days 🗌 14 day	rs 🛛 Other (Specify) 23	8 days	425 1	4/214	<u></u>		
Electronic Data Delive	erables Required	: 🗌 No 🛛	Yes	(EDDs will be provid	led in Region 3 EDD For	nat)	1				
Special Instructions: we will be adopting th attached PDF file in T <u>sooacta edm.com</u> or (6 and Nancy Forman (F	The unvalidated e CLP methods, able 1a under "R 510)304-0803. P ormanNA(àcdm	data is reque SOM01.2 an L." If there a lease send un .com), and Jo	ested via S ad ILM05 are any re avalidated onah Jack	SMO/ESAT – 7 days 5.4 in place of the PRF eporting limits that ca d EDDs and validated son (lacksonIM@cdr	analytical TAT + 3 days i P's SW846 methods listed innot be met by the reques data packages, including m.com) when available.	for compliance rev in the attached Pl sted methods, plea excel and databas Quantitation limits	view = 10 days DF file. Repor se contact And e-ready formate are provided i	at no additional cost. ting limits required ar lrea Soo immediately ts to Andrea Soo (soos n the PDF file that wa	Please note that c listed in the at ac(acdm.com) is attached to		
this lab request.					/				AR302955		

## Appendix D

### Laboratory Case Narrative
USEPA - CLP

COVER PAGE

Lab Nar	me:	Bonner Ana	lytical	Testing		Contract: EPW06055						
Lab Co	de:	BONNER Cas	se No.:	37823	NRAS	No.:	SDG No.:	MC0005				
SOW No	•••	ILM05.4										
		EPA SA	MPLE N	0.		La	b Sample ID:					
		M	C0005				0809155-01					
		MC	0005D			_0	809155-01DUP	-				
		MC	00055				0809155-01MS					
		M	20006				0809155-02					
		M	C0008				0809155-03					
,		M	C0009				0809155-04	<b>-</b>				
,		M	C0010				0809155-05	-				
		M	C0011			•	0809155-06	_				

Were ICP-AES and ICP interelement corrections applied?	(Yes/No)	ICP-AES Yes	ICP-MS 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	<u>No</u>

#### Comments:

(R): As and Pb are flaqged as "E" estimated due to interferences occuring during the analysis of the serial dilution.

(018108

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.

Une	
Signature: <u>CON</u>	Name: Name:
2/-1	
Date: 4/25/8	Title: President

COVER PAGE

ILM05.4

## **Bonner Analytical Testing Company**



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

## SDG NARRATIVE:

## <u>SDG Number: MC0005</u> <u>Case Number: 37823</u> Cóntract 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.

#### <u>Metals</u>

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: 55-01 EPA Sample # MCOO Lab ID 2008@1258 Date & Tim Metals: μg/L (0.100 L) 100 % 1000 g 1 mg(Analyte (1.00 g)1 kg 1000 μg Authorized by Daniel Antrim Document Control Officer



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

and the second secon

OASQA Representative

0809015 FINAL DAS R33067 10 18 08 1517 Page 1 of 8



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.

1.42.43

0809015 FINAL DAS R33067

10 18 08 1517 Page 2 of 8



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

ι,

	Laboratory ID	Matrix		Date Sampled	Date Received
MP8-57	0809015-01	Soil		09/11/08 12:45	09/18/08 11:40
		• • •			
	:	· · ·			
	•				and the second se
	· · · · · ·	· ·		20	
-					
		an a	•		
	. :		•	-	
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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

이이지 않니?						KGNA:	
Detersisped: 94	17/2008	Chain of Custor	ly Record	Singlet D. 12		fo <b>r Lab</b> Use Only	
NANG TANANG IN	6035952618	RVINANNOD	(Ostri line)	Received of A.J.	/amitting L	ab Contract Has	
Stripped for		10.00		hindlich	<u></u>	napace:	
		2		1 11	1143 -	nes kr To:	
	and an and a state of the state	8				abCerizad No:	
		4				et Pare:	
	WATRES CC	ANALYSS	TADBU	STATION	SUPPEORITO		RELIBUSCOLLY

Silvasifa Che Sanjetri	Sarşıkişi lebe izer fat biçini ayı Q2:	Atilicial Sampler Signalizaci) (Code Temperatum Upon Director Upon Director	Citate of Cantody Scalaboration
Analysis Kay.	Concentration: 1 = Low, U = Low-Regime, H = High	Tyellerbula: ConserverC.Cosb=C	Custody Seal Intent? Sirjennet knot?
TPH = Total Petracum	fplicentsers		

LABORATORY COPY

Patting Page 1 of 1

TR Number: 3-103246740-091708-0004 PR prefits edimetry meth. Recedular internation mediatecal. Send Cary Is: Sance Nangement Office, Ann Healter Bann, CSC, 15X0 Continues Center Dr., Charita, VA 20151-3418, Phone 7509516 4200, Fac 1938-4480



Surrogate: n-Triacontane

4.66

## 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 I	R33067			
	Station ID: MP8-57			à			5-01				
	Sample Matrix: Soil					Date Collected: 09/11/2008					
			Classical	Chemistry 1	Parameters						
				Targets							
	· · · · · · · · · · · · · · · · · · ·	Result	Flags	Quantitation	<u> </u>		<u> </u>				
Analyte		% by Weight	Qualifiers	Limit	Dilution	Prepared	Analyzed	Method/SOP#			
% Solids		77.0			1	09/30/08	10/01/08 14:36	USGS I-5753-85			
	а		Dies	el Range Or	ganics			· .			
				Targets							
		Result	Flags	Quantitation							
Analyte		ug/g dry	Qualifiers	Limit	Dilution	Prepared	Analyzed	Method/SOP#			
2 Diesel	Fuel	·U		5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222			
erosene		U		5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222			
et Fuel A	L .	U		5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222			
P-5 Milit	tary Fuel	U		5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222			
uel Oil #	4	U		5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222			
uel Oil #	ł5	U	С	5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222			
uel Oil #	/6 (Bunker C)	U		5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222			
Diesel Ra	nge Organics	U		5.20	1	09/25/08	10/04/08 01:58	EPA 8015D/R3QA222			
·				Surrogate	S						
		Result	Flags		%Recovery						
Analyte		ug/g dry	Qualifiers	%Recovery	Limits	Prepared	Analyzed	Method/SOP#			

119 %

50-150

09/25/08

10/04/08 01:58

EPA 8015D/R3QA222



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

Analuta	P eeult	Quantitation	1 t Unite	Spike	Source	%REC Limit	רוקק	RPD Limit	Notas
Anatyle				Level	Kesuit	70KEC Linna	KFD	Linu	
Batch BI83001 - PD60/PD105									
Duplicate (BI83001-DUP1)	S	Source: 080901	5-01	Prepared:	09/30/08 08:3	6 Analyzed: 10.	/01/08 14:36		
% Solids	76.8		% by Weigh	t	77.0		0.2	20	
4. · · · · · · · · · · · · · · · · · · ·									
		- 44 							
		•							:
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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

		Quantitation		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch BI82501 - EPA 3540C DROs										
Blank (BI82501-BLK1)				Prepared:	09/25/08 09:30	) Anal	yzed: 10/04/	/08 01:09		
#2 Diesel Fuel	U	4.00	ug/g wet							
#2 Diesel Fuel - 75% Weathered	U	4.00	11							
Kerosene	U	4.00					•			
Jet Fuel A	Ú	4.00	•#						,	
JP-5 Military Fuel	U	4.00	м.		an an thair			1997 - A.		÷.,
Fuel Oil #4	U U	4.00	, . <b>u</b>							- 3
Fuel Oil #5	U	4.00			÷., •			$(1, \dots, n)$		a sta
Fuel Oil #6 (Bunker C)	' U	4.00								
Diesel Range Organics	υ	4.00					. 1			1.
Surrogate: n-Triacontane	3.25		"	3.0000		108	50-150			
LCS (BI82501-BS1)				Prepared:	09/25/08 09:30	) Anal	yzed: 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		11	3.0000		83	50-150			
Matrix Spike (BI82501-MS1)	Sou	arce: 0809015-	-01	Prepared:	09/25/08 09:30	) Anal	yzed: 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		ŧ	3.8971		90	50-150			
Matrix Spike Dup (BI82501-MSD1)	Sou	ırce: 0809015-	·01	Prepared:	09/25/08 09:30	) Anal	yzed: 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		n	3.8971		69	50-150			



## 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

#### 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 」」、「」、 「」、 「」、 「」、 「」、 「」、 「」、 「」、 「」、	Star & Frank	Private post of the	ر اور مادر اور ا	Screening I	evels'	同使之 体 二年		1-267 3.3	Protection of	Groundwater
تاريخ على من أورك من المراجع والمراجع المراجع المراجع عن مطلحه المراجع المراجع عن من المراجع عن مراجع المراجع الدولين علي من المراجع المراجع والمراجع المراجع المراجع عن مطلحه المراجع المراجع المراجع عن مراجع المراجع الموط		<b>这个时代</b>		大学学习中于				DC DC	Risk-based	MCL-based
		Residential Soil	key	Industrial Soil	key	Tapwater	kêy 🖹	1 154281	常: ASSLAM	S SSL 🛬
Analyte	CAS No.	, kg, ⊜., ÷	ers'y	7%-1 # <b>mg/kg</b>		.≎, <b>a,ug/Ľ</b> ( <sub>?</sub> ??	e dan P	'∝ <b>ug/L</b> ∑_₹	T mg/kg	🛬 _mg/kg 灵
Acephate	30560-19-1	56 00 - 1	C**	200 00	C*	7.70	C*		0.00	
Acetaldehyde	75-07-0	11.00	C**	53 00	C**	2 20	C**	-	0 00	-
Acetochior	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	
Acrylonitnle	107-13-1	0 24	C*	1 20	C*	0 05	C*		0.00	
Adiponitrile	111-69-3	8500000 00	nm	3600000 00	nm				1	
Alachior	15972-60-8	8.70	C*	31 00	С	1.20	c	2 00	0 00	0.00
ALAR	1596-84-5	9200 00	n	92000 00	n	5500 00	n		1 20	
Aldıcarb	116-06-3	61 00	n	620.00	n	37.00	n		0.01	
Aldıcarb 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	
Aliyi Alcohol	107-18-6	310 00	n	3100 00	n	180 00	n		0 04	
Allyi Chlonde	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	<b>18 00</b>	n	180 00	п	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	60000000 00	nm	7				,
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			
Andine	62-53-3	85 00	C**	300.00	C*	12 00	C*		~ 0.00	
Antimony (metailic)	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 <sup>°</sup>	л.	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 < 10X 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

The way of most of a set of The materia material states to set of a	11 P.21 1 400	AT & H & To & Minste	Joka rate n	Verter Companies I	ouolo	1454 1 121	a	THAT'S YE	Distantion of	Croundwator
	ون داد <u>د د</u> ه د د و د د محمد مدیک	and the Charge back			-eveia	وم بر میشد کاره دسام از بر جمعه دفی اهر	14 - 14 - 14 - 14 - 14 - 14 - 14 - 14 -		Pick based	MCL-based
		<b>Decidential Call</b>		Inductrial Call	1.915	Tominital .	A. 247	MCL		CC-Dasou
and the start of the start of the start of the start of the	- 177 - <sup>2</sup> 31	Kealgennal ooll	Key		Key		Key	-115 CA. 5-1	S. OOL	A. 200L
Analyte	CAS NO.	A REAL MONES	10.2 ×1.	Ling/kg 🖓 🖉		<u>`ug/</u>	1.2	u,K), <b>n8∧⊢</b> "		, angag
Apoilo	74115-24-5	790 00	n	8000 00	n	470 00	n		610 00	
Aramite	140-57-8	19 00	С	69 00	C	2 70	С		0.11	
Arsenic, Inorganic	7440-38-2	0 39	C*	1 60	c	0 05	С	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	С	3 00	0 00	0.00
Avermectin B1	65195-55-3	24 00	n	250 00	n	15.00	n		0 04	<b>,</b> '
Azobenzene	103-33-3	4 90	С	22 00	С	0 12	С		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	
Benzaldehvde	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	л	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	
Benzvi Alcohol	100-51-6	31000.00	ň	310000 00	nm	18000.00	'n		4 20	
Benzyl Chloride	100-44-7	3.80	C**	17.00	C**	0.40	- c**		0.00	
Bervilium and compounds	7440-41-7	160.00		2000.00	<u> </u>	73.00	<u></u>	4 00	58.00	3 20
Bidrin	141-66-2	<sup>°</sup> 6 10	'n	62.00	n	3 70			0.00	
Bifenox	42576-02-3	550.00	 n	5500.00	'n	330.00	'n		2 60	
Binhenthrin	82657-04-3	920.00	n	9200.00	<u>~n</u>	550.00			3500.00	
Binhenvi 1 1'-	92-52-4	3900.00	ne	51000.00	08	1800.00	 n		23.00	
Bis/2-chioroethow)methane	111_01_1	180.00	n	1800.00	n	110.00	 n		0.02	
Bis/2-chloroethy/)ether	111_44_4	0.19		0.90	<u> </u>	0.01	<u> </u>		0.00	
Bis(2-chloro-1-methylothyl) ether	108_60_1	3.50	č	17.00	č	0 32	č		0.00	
Bis(2-ethylboxyl)nhthalata	117_81_7	35.00	~	120.00	~*	4 80	č	8 00	1 60	2 00
Bis(chloromethyl)ather	542_88-1	0.00	<u> </u>	0.00		0.00	<u> </u>	0.00	0.00	200
	90-05-7	3100.00	Š	31000.00	Š	1800.00	č		270.00	
Boron And Borotes Only	7440-42-8	16000.00		200000 00	000	7300.00			23.00	
Boron Trifluoride	7637.07.2	990000.00		4200000 00	000	7300.00			23 00	
Bromete	165A1 AE A	0.01		4200000000	141	0.10	•	10.00	<sup>-</sup> 0.00	0.00
Bromohanzene	108.82 1	04.00	5	410.00	U M	20.00	5	10.00	0.00	000
Bromodichlommethane	75.27 4	10.00		41000	0	1 10			0.02	
Bromoform	75 25 2	61.00	G 0*	-40.00	ų 0*	9.50	U 0*		0.00	
Bromomothono	74 92 0	7.00		220 00	0.	8 70	C		000	
Bromonbos	2104 00 2	7 80	<u></u>	3100 00	n	190.00	<u>_n</u>		0.00	
Dromophos Deserves mil	2104-80-3	310 00	n	3100 00	n	720.00	n		070	
Bromoxynii	1009-04-5	1200 00	n	12000 00	n	730.00	n		0/8	
Bromoxynil Octanoate	1689-99-2	1200 00	n	- 12000 00	n	730 00	n		7.20	

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Contaminant - Tell and a contaminant		笔字 "城上小	3h f	Screening L	evels	الم الم الم	n Taka	2	Protection of	Groundwater
the state of the s	بجني يتجمره طرين	もふうやけない	1.5	I'm ger han star	а. (		4	10 - F- F	Risk-based	MCL-based
من مرکز می وارد میشود از میشود از میکند می مستر و است و این می از می می می وارد می از می می وارد می می و در می وارد در در می وارد میسرد از می می می آند و است و این می از مان می از مان از می می می وارد می می وارد می می و در	15 A	Residential Soil -	key	industrial Soil	key	Tapwater	key	MCL.	દ્ધ <b>કડા</b> જે	₩ <b>`\$\$L</b> *£
Analyte	CAS No.	<b> </b>	1.20	<b>mg/kg</b> ,	1. T	<i>≋: </i>			<u>ኖናኛ mg/kg 👾</u>	j≝ <b>*mg/kg</b> / ₹
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		075	-
Butyl Benzyl Phthlate	85-68-7	260 00	C*	910 00	с	35 00	С		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	С	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 0Ŏ	п	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	С	4 30	С	0 17	С		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	С	0 00	С		0 00	
Chlonmuron, Ethyl-	90982-32-4	1200 00	n	12000 00	n	730.00	n		0 26	
Chionne	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 HCI, 4-	3165-93-3	1 10	с	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	
Chioroacetophenone, 2-	532-27-4	43000 00	n	180000 00	nm					1
Chloroaniline, p-	106-47-8	9 00	C*	32 00	C*	1 20	С		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	с	16 00	c	0 61	С		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	
Chlorodifiuoromethane	75-45-6	53000 00	ns	220000 00	nms	100000 00	n		44 00	
Chloroform	67-66-3	0 30	С	1 50	С	0 19	С		0 00	
Chloromethane	74-87-3	1 70	C*	8 40	C*	1 80	С		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	- 1	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 is the first	a dat dhat the	S SHILL AND AND	700 100	Care Como ontañ I	ă cele	1. 7.4. 2.	12.5	An ent say if a	Destantion of C	anu nehuôtor
		Alise and a second second				1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	(, , , , , , , , , , , , , , , , , , ,	1 47 1-11 1 1. J. S. Saurey	Protection of C	VCI-based
	A CALL MAN AND A	Decidential Soll	757	Inductrial Soil		Tomusior		MCL	S Cellin	
		Silveside I dai jooli a	Көу		Key		Key.	6-1 2 t-1	JOL	
Analyte	CAS NO.	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	1.1	いい、10010日年が、か	$\sim$ 7	<i>∖</i> ≩≈ <b>ug/L</b> ≈⊮			<b>1.5 108/v8</b>	( ÷•m0\ikg : →
Chlorotoluene, p-	108-43-4	5500 00	ns	72000.00	ns	2600 00	n	3	2 80	
Chiorpropham	101-21-3	12000 00	n	120000 00	nm	7300.00	л		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	С	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	0	31000.00	 	1800.00			2.00	
Cresol p-	108-44-5	310.00	 n	3100.00	 n	180.00	'n		0.19	
Crotonaldehyde trans-	123-73-9	0.34		1 50		0.04			0.00	
Cumene	98-82-8	2200.00		11000.00	ne	680 00			1 30	
Cvanazine	21725-48-2	0.58		2 10		0.08			0.00	
Cyclohexane	110-82-7	7200.00	ne	30000 00	ne	13000 00	'n		13.00	
Cyclohexane 12345-pentabromo-6-chloro-	87-84-3	21.00		75.00		2 90	<u> </u>		0.02	
Cyclohexanone	108-94-1	310000.00		3100000 00		180000 00	ň		42.00	
Cycloheyylamine	108-91-8	12000.00		120000 00	nm	7300.00			2 00	
Cyhalothrin/karate	68085-85-8	310.00	<u> </u>	3100.00		180.00	· n		170.00	
Cypermethrin	52315-07-8	610.00		6200.00	" "	370.00	- 11		79.00	
Cyromazine	66215-27-8	460.00		4600 00		270.00	'n		0.07	
Cvanides	00210-21-0					210.00			0.07	
Calcum Cvanide	592.01.8	3100.00	-	41000.00	~	1500.00				
Conner Ovenide	544 02 2	300.00		5100.00		190,00				
	57 12 5	1600.00		20000.00		720.00		200.00	7.40	2.00
	01-12-0 400 40 E	1000 00	n	20000 00	n ~	150.00	-	200.00	740	200
Cyanogen Guanagan Brasuda	400-19-5	3100.00	n	41000 00	n	1500 00	n			
Cyanogen Bromide	505-58-3	7000.00	<u> </u>	92000 00	<u> </u>	3300 00	<u>n</u>			
Cyanogen Chionde	506-77-4	3900.00	n	51000 00	п	1800 00	n	0		
Hydrogen Cyanide	/4-90-8	1600 00	n	20000 00	n	6 20	n			
Potassium Cyanide	151-50-8	3900 00	<u>n</u>	51000 00	<u>n</u>	1800 00	<u>n</u>			
Potassium Silver Cyanide	506-61-6	16000 00	n	200000 00	nm	7300 00	n			
Silver Cyanide	508-64-9	7800 00	n	100000 00	nm	3700 00	n			
Sodium Cyanide	143-33-9	3100 00	<u>n</u>	41000 00	<u>n</u>		n			
Iniocyanate	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	<u>n</u>	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
	72-54-8	2 00	C	7 20 _	C	0 28	С		0.09	
DDE, p,p'-	72-55-9	1.40	C	<u> </u>	C	0 20	¢		0.06	
DDT	50-29-3	1 70	C*	7 00	C*	0.20	C*	ć	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 - Cont	1. 1. 1. 19	- Ser - ( 4) - ( 1)	2. IP.;	Screening	Levels	Fran Station	در ۲۰۰۱ م	نه تد يور شمير	Protection of	Groundwater-
	16		. (az-1	ALA STATE THE	3 3 1	1	R	12 17 1 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Risk-based	MCL-based
ا است الروب المقدر بي الإسانية معادية المالية المالية المالية العام المالية العام المالية المالية الم	6 4 3 5 1 5	Residential Soll.	key	Industrial Soil	key	Tapwater	key	*/』 MCL ハ ***** (ごうず)	SSL	SSL 🥂
Analyte	CAS No.	👘 🖓 💏 🖓 🖓		sti i ing/kg 🖏 🍕	1. 1. 1.	21, <b>ug/L</b> * 22	. Yo 1	igs <b>,ug/L</b> a _s	mg/kg 🔤	🗠 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	с	56 00	С	400 00	5 50	39 00
Diallate	2303-16-4	8.00	с	28 00	с	1 10	С		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	ň		0.09	
Dibutvi Phthalate	84-74-2	6100 00	n	62000 00	n	3700 00	n		11 00	
Dibutvitin 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	ċ	0.02	c	0.00	Ċ		0.00	
Dichlomacetic Acid	79-43-6	9 70	<u> </u>	34.00		1.30	<u> </u>	~	0.00	
Dichlorobenzena 12-	95-50-1	2000.00	ne	10000 00	ne	370.00	n	600.00	0.40	0.66
Dichlorobenzene, 1,2	108-48-7	2 60		13.00	C 113	0.43	6	75.00	0.00	0.08
Dichlorobenzidine 3.3'-	91-94-1	1 10	- Č	3.80	<u> </u>	0 15	~	10 00	0.00	
Dichlorodifluoromethane	75.71.8	190.00	ň	780.00	n	390.00	ň		0.60	
Dichloroethane 1 1-	75-34-3	3.40		17.00		2 40			0.00	
Dichloroethane 12-	107-06-2	0.45		2 20	<del></del>	0 15	<u> </u>	5.00	0.00	0.00
Dichloroethylene 11-	75-35-4	250.00	- U	1100.00		340.00	2	7 00	0.12	0.00
Dichloroethylene, 1,7-	540-59-0	700 00	 n	9200.00		330.00	5	/ 00	0.10	000 .
Dichloroethylene 12-cis-	156-59-2	780.00	<u></u>	10000.00	ne	370.00	<u> </u>	70.00	0.11	0.02
Dichloroethylene, 1,2 de	156-60-5	110.00	<b>"</b>	500.00		110 00		100.00	0.03	0.02
Dichlorophenol 24-	120-83-2	180.00		1800.00	 n	110 00	. n	100 00	0.18	000
Dichlorophenoxy Acetic Acid 2.4-	94-75-7	690.00	<u>n</u>	7700.00	 n	370.00	<u> </u>	70.00	0.09	0.02
Dichlorophenoxy)butvric Acid 4-(2 4-	94-82-6	490.00		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		20000.00	ns	730.00	n	0.00	0.00	
Dichloronronanol 2.3-	616-23-9	180.00		1800.00	n	~110.00	 n		0.02	
Dichloropropene 1.3-	542-75-6	1 70	c*	8.40	C*	0.43	<b>*</b>		0.00	
Dichloryos	62-73-7	1 70		5 90		0.23	~*		0.00	,
Dicyclopentadiene	77-73-6	29.00	ñ	130.00	ň	14.00	ñ		0.06	
Dieldrin	60-57-1	0.03		0.11		0.00		÷	0.00	
Diesel Engine Exhaust	NA	005	<u> </u>	<u> </u>	<u> </u>	0.00	<u> </u>		0.00	
Diethvi Phtholate	84.68.2	40000.00	~	400000.00		20000.00	~		13.00	
Diethylene Givool Monobutyl Ether	112-34-5	49000 00 610 00		490000 00 8200 00	(III) 2	25000 00			0.08	
Diethylene Glycol Monoethyl Ether	111-00-0	3700.00		37000.00		2200.00			0.08	
Diethylene Glycol Monoeutyl Luter	617.94 5	S700 00		620.00		2200 00			0.01	
Disthyletilhestrol	58-53-1	0.00	~	0.00		0.00			0.00	-
Difenzoquat	43222 48.9	4900.00	<u> </u>	40000 00	<u> </u>	2000.00	<u> </u>		0.00	
Diflubenzuron	35367 29 6	1200.00		12000 00		730 00	11 P		1 70	
Diffuoroethane 11-	75.37.4	53000 00	11	22000 00	nme	83000.00			20.00	
	10-01-0	000000	110	220000 00	10118	03000 00	n		28 00	
	108-20-2	1200 00	~	5100 00	<b>^</b>	830 M	~		0.40	
Dusonropyl Methylphosphonate	108-20-3 1445-75-8	1200 00	n	5100 00	ns ne	830 00 2900 00	n	`	0 19	

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	24 A 4 4 4 4 4 1 1 1	The second s	a tal	Screening	Levels	17.00 - 10.00 - 10.00 - 10.00 - 10.00 - 10.00 - 10.00 - 10.00 - 10.00 - 10.00 - 10.00 - 10.00 - 10.00 - 10.00 - 	<u>24. 22</u> 1. C.		Risk-based	IMCI based
		Residential Soil	line	- Industrial Soil	1	Terwater	Lenter	MOL	SSI SSI	SSI
		malka	- Key		T KBY	a und the	- Ney	100/15 ST	malka	molka
ANALY AND AND A PARTY AND A PARTY AND		Prophy mana 22	- A	in the set	(* 197 -		r -1,0	AND ALC: A		I
Dimethoate	60-51-5	12 00	n	120 00	n	/ 30	n	,	0.00	
Dimethoxybenzidine, 3,3-	119-90-4	35 00	C	120 00	c	4 80	c		0 02	
Dimethyl methylphosphonate	<u>, 756-79-6</u>	290.00	C.	1000.00	C"	40.00	C*		0 01	
Dimethylaniline HCl, 2,4-	21436-96-4	084	С	3 00 _	C	0 12	c		0 00	
Dimethylaniline, 2,4-	95-68-1	0 65	C	2 30	С	0 09	С		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 Mature, 2,4/2,6-	25321-14-6	071	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			0.03	
Dinitrotoluene, 2-Amino-4.6-	35572-78-2	150.00		2000.00	n	73.00	n		0.03	
Dinitrotoluene, 4-Amino-2 6-	19406-51-0	150.00	n	1900.00		73.00			0.03	
Dinoseb	88-85-7	61.00	" "	620.00		37.00		7.00	0.00	0.05
Diovane 14	123-01-1	44.00	<u> </u>	160.00	<u> </u>	6 10		1.00	0.00	<u> </u>
Diphenamid	957-51-7	1800.00	ň	18000.00	š	1100.00		-	34.00	
Diphenyl Sulfone	127_63_0	180.00		1800.00		110.00			0.66	
Diphenylogione	127-00-0	1500.00	· II	15000.00		010.00			3.60	
	122-30-4	1300 00		13000 00		910.00	-11		3 00	
Diprietivitydrazine, 1,2-	122-00-7	120.00	С — ́	2 20	С -	0.00	-	20.00	0.00	0.09
Diquat	4007.07.7	130 00	<u>n</u>	1400 00	<u>n</u>	80.00	<u></u>	20.00	0.33	0.08
Direct Diack 30	1837-37-7	0.07	C	0 23	C	0.01	C		140	
Direct Dide 6	2002-40-2	007	C	0 23	C	0.01	C		4 00	
Diset Diset	100/1-00-0/	00/	<u> </u>	0 20	<u> </u>	0.01	C		<u> </u>	
Disunction	298-04-4	240	n	25 00	n	1.50	n		0.00	
Ditniane, 1,4-	505-29-3	610 00	n	6200 00	n	370 00	n		0 19	
	330-54-1	120 00	n	1200 00	n	73 00	<u>n</u>		0 03	
	2439-10-3	240.00	n	2500 00	n	150 00	n		4 50	-
Dioxins						<u> </u>				
Hexachlorodibenzo-p-dioxin	34465-46-8	0 00	, C	0 00	C	0 00	c	<u> </u>	0 00	
Hexachlorodibenzo-p-dioxin, Mixture	NA	0 00	С	0 00	С	0 00	С		0 00	-
HpCDD, 2,3,7,8-	37871-00-4	0 00	С	0 00	С	0.00	C		0 00	-
OCDD	3268-87-9	0 02	C	0.06	¢	0 00	c		0.00	
PeCDD, 2,3,7,8-	36088-22-9	0.00	С	0.00	C	0.00	C		0.00	
TCDD, 2,3,7,8-	1746-01-6	0 00	C*	0 00	C*	0.00	<b>C</b> *	0 00	0 00	0 00
Endosulfan	115-29-7	370 00	n	3700.00	<u>n</u>	220 00	n		9 70	
Endothali	145-73-3	1200 00	n	12000 00	n	730.00	n	100.00	0.16	0 02

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Contaminant in the second	1 . y = - mig	1 - that the for the state of the	A . 612 4. 74 4	Screening:	Levels	计子子 计分析	5. J. 7	5 F. 19 19 19 19 19 19 19 19 19 19 19 19 19	Protection of	Groundwater
I my and the more way wanted in the state of the	The state of the state	YPAC 1 1 24 1 1	1.55	W Brand Control	ie par	17.05 7-19 34	1 4 3	the with the sta	Risk-based	MCL-based
	E TA AND	<b>Residential Soil</b>	key	Industrial Soil	key	Tapwater	key	MCL	SSL	SSL
Analyte	CAS No.	* # <b>mg/kg</b> :	12 II	※:: (mg/kg - 5);-*	125	ug/L	30 × 5	,⇔ <b>ug/L</b> ₀ r	mg/kg	🗄 🖉 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	п	640.00	n	42 00	n		0.01	
EPTC	759-94-4	2000.00	ns	26000.00	ns	910 00	n	1	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	С	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	
Ethvi-p-nitrophenvi Phosphonate	2104-64-5	0.61	n	6 20	n	0 37	n		0 01	
Ethvibenzene	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	с	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	п		54 00	
Fluometuron	2164-17-2	790 00	n	8000 00	n	470 00	n		0 44	
Fluonne (Soluble Fluonde)	7782-41-4	4700 00	n	61000 00	n	2200 00	n	4000 00	330.00	600 00
Flundone	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	С		0 01	
Fomesafen	72178-02-0	2 60	c	9 10	С	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	С	0 02	C		0 00	,
Furfural	98-01-1	180 00	n	1800 00	n	110.00	n		0.03	
Funum	531-82-8	0 32	С	1 10	С	0.05	С		0 00	
Furmecyclox	60568-05-0	16 00	c	57 00	С	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	С	0 00	с	0 00	c		0 00	
HxCDF, 2,3,7,8-	55684-94-1	0 00	С	0 00	С	0.00	C		0 00	
OCDF	39001-02-0	0 01	С	0 04	C	0 00	C		0 00	

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AL STATE ALL THE Contaminant State Level	S. as Lennis - Stag	6 B 1 B 1 Mar -	1.5	Screening L	evels;	2	į	The stand of the second	Protection of	Groundwater
	1- 3. 348 14.	TEANAN MY	1	State of the state of the state of the	-04- 54	2. 35	Sec. 51		Risk-based	MCL-based
		Residential Soil	key	Tindustrial Solia,	key	. Tapwater	key	MUL Star	, SSL -	SSL ??
Analyte Analyte	CAS No 🐇	ାନ୍ନିକ <b>.mg/kg</b> ନିକ୍ରି କୁଞ୍ଚ	5 J 2 J.	7* - {** <b>mg/kg *</b> **}3**	4 <sup>1</sup> 5	ug/L <sub>261</sub>	1	'-¦ <b>∶ug/L</b> -∹	ing/kg_a	*** ' <b>mg/kg</b> ,†
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	С		0 00	
TCDF, 2,3,7,8-	51207-31-9	0 00	Č	0 00	С	0.00	С		0 00	
Glufosinate, Ammonium	77182-82-2	24 00	<u>n</u>	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	<u>n</u>	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	п	73 00	n		0 51	
Hexachlorobenzene	118-74-1	0 30	C	1.10	С	0 04	С	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	С	0 27	C	0 01	С		0 00	
Hexachlorocyclohexane, Beta-	319-85-7	0 27	c	0 96	С	0.04	С	-	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	С	0 96	C	0.04	С		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	С	0 61	С		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	С	0 95	C	0 02	C			
Hydrazine Sulfate	10034-93-2	0 21	<u> </u>	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 _	С		0 00	
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2	16.00	n	200 00	n	7 30	n			
Imazalıl	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	<b>C</b> *	71 00	C		0 02	
Isopropalin	33820-53-0	920 00	n	9200.00	n j	550.00	n		7 40	
Isopropyl Methyl Phosphonic Acid	1832-54-8	6100 00	<u>n</u>	62000'00	n	3700 00	<u>n</u>		<sup>3</sup> 077	-
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	<u>n</u>	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	п	26 00	n			

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C Contaminants & Alexandre	- 4 27 - 32 - 32 - 32 - 32 - 32 - 32 - 32 -	5 Mar 1 7 .	التر ويتامياً ،	Screening	Levels	1	ANG	States tok	Protection of	Groundwater
The second s	tal. La botw	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	S	心地心 书子著号上	伝統元公司	x 61 7 8 2 10 1	3117.4	Ern the tage of	Risk-based	MCL-based
		<b>Residential Soil</b>	kev	Industrial Soil	kev	Tapwater	kev	MCL	SSL SSL	SSL
Analyte	CAS No	mg/kg		mg/kg	- <sup>6</sup>	ug/L	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	/ ug/L	mg/kg	⇒ mg/kg < 1
londay	83055-99-6	12000.00	n	120000.00	nm	7300.00	<u></u>		1 90	
Lead Compounds		12000 00		120000 00		1000 00			1.00	
Lead and Compounds	7439-92-1	400.00	n	800.00	n			15.00	1	14.00
Tetraethyl I ead	78-00-2	0.01	<u> </u>	0.06		0.00	n	10 00	0.00 -	.+ 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	<u> </u>	310000 00	nm	18000.00	<u>n</u>		4 00	· ·
Malononitnie	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	1
Manab	12427-38-2	310.00	n	3100.00		180.00		•••••	0.04	L
Manganese (Diet)	7430-06-5	,01000				100 00	••			
Manganese (Water)	7430-06-5	1800.00	n	23000 00	•	880.00			57.00	
MCPA	94-74-6	31.00	<u></u>	310.00	<u> </u>	18.00	· n		0.00	
MCPR	94-81-5	610.00		6200.00		370.00			0.15	
MCPP	93-65-2	61.00		620.00		37.00	'n		0.01	
Mephosfolan	950-10-7	5 50	<u>n</u>	55 00	<u> </u>	3 30			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	<u>n</u>		0.00	
Metalaxvi	57837-19-1	3700 00	n	37000 00	n	2200 00	n		0 54	
Methacrylonitnle	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	л		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	с	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	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	с	52 00	C	2 00	с		0 00	
Methylaniline Hydrochloride, 2-	636-21-5	3 70	С	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	С	4 80	С	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	С	37 00	C	1.50	C		0 04	
Methylenebisbenzenamine, 4,4'-	101-77-9	0 30	c	1.10	С	0.04	С		0.00	
Methylenediphenyl Diisocyanate	101-68-8	850000 00	nm	3600000 00	nm					
Methylstyrene, Alpha-	98-83-9	5500 00	<b>N</b> 8	72000 00	ns	2600 00	n	-	4 70	

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ر المرودة الجريعة شراع ب	Contaminant of the host of	مستقرق والمرابع مرارك		الأربي أن	Screening L	evels.	Ter Latan A Stat		* 17 14 × 15 14.	Protection of	Groundwater
a start a start a start	· Le Brief all and the best	1 5 7 5 5		ليبرز	مرونة على المراجع الم الموقع الم	1		7 12	C STANDING	Risk-based	MCL-based
م الم و من من من من الم الم من الم من الم من الم		19	Residential Soil	key	industrial Soll	key	Tapwater	key		S SSL S	SSL S
Analyte - Carl		CAS No.	₩Č -Er <b>mg/kg</b> ,;;:::::	2 7 B	<b>mg/kg</b>	1. P. K.	,` **; <b>ùg/Ľ</b> ,∖j; ;;		ration in the second s	raing/kg ∕⊹	₹ <b>mg/kg</b>
Metolachior		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	С	0 10	С	0.00	С		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	i										
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 Sa	lts	NA	23 00	n	310 00	n	11 00	n		0 57	
Methyl Mercury	-	22967-92-6	7 80	п	100 00	n	3 70	n			
Phenylmercunc Aceta	te	62-38-4	4 90	п	-49 00	n	2 90	n		0 00	
N,N'-Diphenyl-1,4-ben	zenediamine	74-31-7	, 18 00	n	180 00	~ 11	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	С			-		
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- <del>9</del>	4300 00	n	43000 00	n	2600.00	n		1 90	
Nitrofurazone		59-87-0	0 37	С	1 30	С	0 05	С		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		<b>79-46-9</b> ,	0 01	С	0 06	, c	0 00	C		0 00	
Nitroso-di-N-butylamin	e, N-	924-16-3	0.09	ç	0 43	C	0 00	С		0 00	
Nitroso-di-N-propylami	ine, N-	621-64-7	- 0.07	C	0.25	C	0 01	C		0 00	
Nitroso-N-ethylurea, N	-	759-73-9	0 00	С	0 06	С	0 00	С		0 00	
Nitrosodiethanolamine	, N-	1116-54-7	0 17	<u> </u>	0 62	С	0 02	C		0 00	
Nitrosodiethylamine, N	F	55-18-5	0 00	C	0 01	С	0 00	C		0 00	
Nitrosodimethylamine,	N-	62-75-9	0 00	С	0 03	С	0 00	С		0 00	
Nitrosodiphenylamine,	<u>N</u>	86-30-6	99 00	C	350 00	С	14 00	C		0.17	
Nitrosomethylethylami	ne, N-	10595-95-6	0 02	С	0 08	C	0 00	С		0 00	
Nitrosopyrrolidine, N-	-	930-55-2	0 23	С	0 82	C	0 03	С		0 00	
Nitrotoluene, m-	Å ~	99-08-1	1200.00	n	12000.00	<u>n</u>	730.00	<u>n</u>		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	<u>n</u>	1500 00	n		17.00	
Nustar		85509-19-9	43 00	n	430 00	n	26.00	n	~	90 00	-
Octabromodiphenyl Et	her	32536-52-0	180 00	n	1800 00	n	110.00	'n	-	31 00	

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1 A Contaminant Part of a contaminant	An ARTEN ME	にいたたけにに	<u></u> *	2 & Screening L	evels	Silve Style Sta	1.40,000 F	and the second	Protection of	Groundwater
and the second			1 × 81					MC	Risk-based	MCL-based
		Residential Soil	key :		key	Tapwater	key	1. 1. 1997 1 d	SSC 23	"(R. 6 SSL
Analyte, Mar and Class and Approximate in	CAS No	ing/kg ack	1. V	1947 Jung/kg		د بر <b>ug/L</b>	41-		l≲e <b>*mg/kg</b> ~j∿	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
Paciobutrazol	76738-62-0	790.00	n	8000 00	п	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	п	150000.00	nm	9100 00	n		6 80	
Phenol	108-95-2	18000 00	n	180000 00	nm	11000 00	n		8 10	
Phenvienediamine, m-	108-45-2	370 00	'n	3700 00	n	220 00	n		0 08	
Phenvienediamine, o-	95-54-5	10 00	c	37 00	c	1 40	c		0 00	
Phenvlenediamine, p-	106-50-3	12000.00	n	120000 00	nm	6900 00	n		2 40	
Phenviphenol. 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	п	12000 00	n	730 00	n		0 2 1	
Phosphine	7803-51-2	23 00	n	310.00	n	11 00	n			
Phosphoric Acid	7664-38-2	14000000.00	nm	6000000 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		37000.00	'n		13.00	
Phthalic Anhydride	85-44-9	120000.00	nm	1200000.00	nm	73000 00	<u></u>		16.00	
Picloram	1918-02-1	4300.00		43000.00	n	2600.00	'n	500.00	0.60	0.12
Picramic Acid (2-Amino-4 8-dinitrophenol)	96-91-3	120 00		1200.00	'n	73 00	'n		0.03	0.12
Pinminhos Methyl	29232-93-7	610.00	<u>n</u>	6200.00		370.00			0.17	··
Polybrominated Binhenvis	59536-65-1	0.02	C*	0.06	c*	0.00	ċ			
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	850000 00	nm.	3600000 00	nm		•			
Potassium Perchlorate	7778-74-7	55.00	<u>n</u>	720.00		26.00	n			
Prochioraz	67747-09-5	3 20	c	11 00	ċ	0.45	ċ		0.00	
Profluratio	26399-36-0	370.00	ň	3700.00	ň	220.00	ñ		8.00	
Prometon	1610-18-0	920 00	<u></u>	9200.00	<u></u> n	550 00	n		0.28	
Prometryn	7287-19-6	240.00	 n	2500.00	n.	150.00			0.23	
Pronachlor	1918-16-7	790.00	" "	8000 00	n .	Å70 00	'n		0.37	
Propani	709_09_0	310.00		3100.00	<u>n</u>	180.00			0 11	
Pronamite	2212.25.9	1200.00		12000 00	~	730 00			200.00	
Proposed Aleshol	107.40 7	1200 00	n -	12000 00	0	73.00			0.00	
International Alcohol	107-18-7	120 00	n	1200 00	n	/300	n		002	

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A TARA A AN AN AN AN ANALANA ANALANA		the second with high		Si' & Corponing I	o violo:	5.W		P.1. 1 137 /. P	Drotoction of (	Groupdwater
The second s	* F ~**********	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1			.eveis	2 10 8 10 10 10 10 10 10 10 10 10 10 10 10 10	4	1919 - 19 - 19 - 19 - 19 - 19 - 19 - 19	Richaged	MCI Jacod
		Residential Soil	1.00	Cinductrial Soil	207	Tenwater	1. AN	MCL	SSI CAS	SSI
		malka	Key		Key		Key	2 3 2 0 2	maka	maka
ANBIYTO SA AMA A A A A A A A A A A A A A A A A	CAS NO.	je ing/kgjese s	1 24	K SATE , MISING 2.5	17 * <sup>1</sup> 2	*** <b>chr</b> ****	15		st statiging mass	The march
Propazine	139-40-2	1200 00	n	12000 00	n	~ 730.00	- <b>n</b>	- * -	0.67	
Propham	122-42- <del>9</del>	1200 00	n	12000 00	n	, 730.00	n	-	0 33	
Propiconazole	60207-90-1	790 00	n	8000 00	<u>n</u>	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	057 -	n		0 00	
Propylene Glycol Monoethyl Ether	1569-02-4	" <b>43000 00</b> -	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	, 190	С	> 8 70	С	0 23	С		0 00	
Pursuit	81335-77-5	15000 00	n	150000 00	nm	9100 00	n		27 00	
Pvdrin	51630-58-1	1500 00	n	15000.00	n	910 00	n		810 00	
Pvndine	110-86-1	78 00	n	1000 00	n	37 00	n		0 01	
Polychlorinated Biphenvis (PCBs)										
Aroclor 1016	12674-11-2	3.90	n	21 00	C**	0 96	C**		0.05	
Arocior 1221	11104-28-2	0 17	c	0.62	c	0.01	c		0 00	
Araclar 1232	11141-16-5	0 17	c	0.62	c	0.01	c		- 0.00	
Araclar 1242	53469-21-9	0.22	c	0.74	<u> </u>	0.03	c		0.00	
Arocior 1248	12672-29-6	0.22	c	0.74	c	0.03	c		0.00	
Araciar 1254	11097-69-1	0.22	C**	0 74	c*	0.03	<b>c</b> *		0.01	
Araclar 1260	11096-82-5	0.22		0.74	6	0.03	<u>с</u>		0.01	
Hentachlorohinbenyl 2 2' 3 3' 4 4' 5- (PCB 170)	35065-30-6	0.03	c	0 11	c í	0.01	č		0.00	
Hentachlorobinhenvi 2 2' 3 4 4' 5 5'- (PCB 180)	35085-20-3	034	č	1 10	č	0.05	č		0.02	
Hentachiorobiphenyl, 2,2,3,4,4,0,5 (PCB 180)	30635-31-0	0.11	<u> </u>	0.38	<u> </u>	0.02	<u> </u>		0.01	
Heyschlorsbinhend, $23^{\circ}$ $A^{\circ}$ 55', (PCB 167)	52662-72-6	0.11		0.38	č	0.02	~		0.00	
Hexachiotophenyl, 2,3,4,4,5,5 (FCB 107)	2003-12-0	0.11		0.39		0.02			0.00	
Hexachiotophenyl, 2,3,3,4,4,5- (FCB 157)	20200 00 4	011	<u> </u>	0.38	<u> </u>	0.02	<u> </u>		0.00	
Hexachiorobiphenyl, 2,3,3,4,4,5- (PCD 150)	30300-00-4	0.11	6	0.00		0.02	C o	-	0.00	
nexachiorobiphenyl, 3,3,4,4,5,5 - (PCB 109)	32/14-10-0	0.00	G	0.00	6	0.00	C .		0.00	
Pentachiorobiphenyl, 2,3,4,4,5- (PCB 123)	00010-44-3	011	<u> </u>	0.30	<u> </u>	0.02	<u> </u>		0.00	
Pentachiorodiphenyl, 2,3,4,4,5- (PCB 116)	31508-00-0	011	Ç	0.36	C	0.02	C	,	0.00	
Pentachiorobiphenyl, 2,3,3,4,4- (PCB 105)	32596-14-4	0 11	C	0.38	C	0.02	C		0.00	
Pentachiorobiphenyl, 2,3,4,4,5- (PCB 114)	/44/2-3/-0	011	<u> </u>	0.38	C	0.02	C		0.00	
Pentachiorobiphenyl, 3,3',4,4',5- (PCB 126)	5/465-28-8	0.00	С	0.00	С	0.00	С		0.00	
Polychionnated Biphenyis (nigh risk)	1336-36-3	0 24	С	0 86	С	0.47	_	0.50		0.05
Polychiorinated Biphenyis (low risk)	1336-36-3					017	C	0.50	0.02	0.05
	1336-36-3	`		• • •	~		-	· - ,		
Tetrachiorobiphenyi, 3,3',4,4- (PCB //)	32598-13-3	0 03	C	011	С	0.01	Ç		0.00	
Tetrachiorobiphenyl, 3,4,4,5- (PCB 81)	70362-50-4	001	C	0.04	С	0.00,	C		0.00	
Polynuclear Aromatic Hydrocarbons (PAHs)	<b>.</b>									
Acenaphthene	83-32-9	3400 00	n	33000 00	n	2200 00	п	-	27 00	
Anthracene	120-12-7	17000 00	<u>n</u>	170000 00	nm	11000 00	n	-	450 00	
Benzlajanthracene	56-55-3	S 0 15- S	С	2 10	с	0 03	С		0 01	
Benzolajpyrene	50-32-8	0 02	С	, 021	C	. 000	С	0 20	0.00	0 31
Benzo[b]fluoranthene	205-99-2	0 15	C	2.10	¢	0 03	Ç		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	С	2 90	С		1 40	
Dibenz[a,h]anthracene	53-70-3	0 02	C	<u>°0 21</u>	<u> </u>	0 00	С		0.02	
Fluoranthene	206-44-0	2300 00	~ n _	22000 00	_ <b>∩</b>	1500 00	n	•	210 00	

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	Land and reading	A 52 H 12 6 1 9		Jan and Take of	109191	2 20 120 812. 1919 - 1910		Harris and the second	Risk-based	MCI -based
م اور او می از اور استان و اور بی مرکز این اور اور این اور		Residential Soll	Sec.	Industrial Soil	1 ANN	Tanyater	Ver	MCL	SSL2 ST	SSL
			Key	Sindegalar Cons.	NOY:	VOUSING & MARINE	NOY	1101	malka	a sources
	CAS NO.2		2	SAUT AND A CEL N	4.0.2		G***.)	(ingian , <b>Mgr</b> Hogs F 1	Lot for the Band of Lat.	253 <b>mand</b> 27
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	<u> </u>	2 10	C	0 03	<u> </u>		0 16	
Methylnaphthalene, 1-	90-12-0	22 00	C	99 00	С	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	<u> </u>	<u>c*</u>	20 00	<u>¢*</u>	0 14	*		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					
Resmethnn	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	п	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	<b>C</b> *	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	`		<u> </u>
Sodium Diethvidithiocarbamate	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 (Tetrachlorovinnhos)	961-11-5	20.00	c*	72 00	c	2 80	c		0 00	
Strontium Stable	7440-24-6	47000.00		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		38000.00	ns	1600.00		100.00	2 00	0 12
Sulfanylbis/A-chlombenzene) 1 1'-	80-07-9	310.00	<u>no</u>	3100.00	<u></u>	180.00	<u> </u>	100 00	2.80	
Systeme	88671_80_0	1500.00		15000.00		910.00			210.00	
TCMTR	21584-17-0	1800.00		18000 00		1100.00	n		830	
Tehuthuran	34014-19-1	4300.00		43000.00		2600.00			0.63	
Temenhos	3393 06 9	1200.00		12000 00		730.00			2300.00	*
Terhepilo	5002-51-2	700.00		8000 00		470.00			0.17	
Terhufae	13071-70-0	1 50		15.00	~	0.01			0.00	
Terbuton	886.50.0	61.00		820.00		37.00			0.05	
Tetrachiarahanzana 1245.	05-04-3	18.00		180.00		11 00			0.03	
Tetrachiorophane 1112	630-20-6	2 00		0.80		0.52	<u> </u>		0.00	
Tetrachiomethane, 1,1,1,2	70-34-5	0.50	č	2 00	~	0.02			0.00	
Tetrachioroathulene	127-18-4	0.57	~	2.00	č	0.07	· U	5.00	0.00	0.00
Tatrachlaranhanal 234 6-	59.00.2	1800.00	<u> </u>	18000.00	<u> </u>	1100.00	<u> </u>	5.00	4 60	0.00
Tetrachioratelyana a ciaba ciaba ciaba	5348 25 4	1000 00		0.00		0.00			000	
reuaciliorototuelle, p-alpha, alpha, alpha-	0210-20-1 2000 24 F	21.00	С -	240.00	6	19.00			0.00	
	3008-24-3	3100	<u>n</u>	310 00	<u>n</u>	10 00	<u>n</u>			
	011-9/-2	110000 00	កភាទ	4/0000.00	nms	170000.00	n		3000	
i tetryi ( i nnitrophenyimetnyinitramine)	~ 4/8-45-8	240.00	n	2500 00	n	150.00	n	· -	600	

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S S TO ST C Contominant	TT 45 IV A THE TRISLEY S.	A service and a service	·	Semaning.	فاهدها	THE ALL AND	5 24.82	ు ఎంగ్ నిరు	Protection of	Prounchuster'
	The second second second second second	and the state of t	1.797			1 41 1 1 1 1 1 1 1 1	2.55	1997 2 11 19 19 19 19 19 19 19 19 19 19 19 19	Risk-based	MCL-hased
		<b>Recidential Soli</b>	1	and intrint Soil	E 216	Tonwater	1	MCL	SSI SSI A	SSI
		a limaka:		malla	, <b>NOY</b> (	······································	KBY	1 Same and Maria	· malka here	> malka - 5
		To A LUNG AN AL						SA ORIC VS	<b>800808</b> 13 ≤	1. mania a
Thallium (I) Nitrate	10102-45-1	7.00	<u>n</u>	92.00	<u>n</u>	3 30	<u>n</u>			
Thallium (Soluble Salts)	7440-28-0	5.10	n	66 00	n	2 40	n	200.	0 17	0 14
Thallium Acetate	563-68-8	7 00	n	92.00	. n	3 30	n			
Thallium Carbonate	<u>6533-73-9</u>	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		1 A A	
Thiobencarb	28249-77-6	610 00	<u>n</u>	6200 00	<u>n</u>	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	С	-	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	- 270	c	9 60	С	0.37	~ C		0 00	
Toluidine, p-	106-49-0	2 60	c	9 10	С	0.35	C		0 00	
Toxaphene	8001-35-2	0 44	C	1 60 ^	С	0 06	С	3 00	× 0 01	0 60
Traiomethrin	66841-25-6	460 00	n	4600 00	n	270 00	n		140 00	
Tnallate	2303-17-5	790 00	n	8000 00	n	470 00	n		<b>1.70</b>	
Tnasulfuron	82097-50-5	610 00	n -	6200 00	n	370 00	n		0 33	
Tnbromobenzene, 1,2,4-	615-54-3	310 00	n	3100 00	n	180.00	n		0.30	
Tributyl Phosphate	126-73-8	53 00	С	190 00	с	7.30	с		0.03	
Tributyitin Compounds	NA	18 00	n	180.00	n	11 00	'n	8		-
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 HCI, 2,4,6-	33663-50-2	17 00	с	59 00	с	2 30	С		0 00	
Trichloroaniline, 2,4,6-	634-93-5	14 00	c	51 00	с	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	с	5.50	с	0 24	С	5 00	0.00	0 00
Trichloroethylene	79-01-6	2 80	с	14 00	с	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		· · · ·	0.00	
Tridiphane	58138-08-2	180 00	n	1800.00	n	110 00	n	]	0 4 1	
Triethviamine	121-44-8	170 00	n	710 00	 n	15 00	n		0.01	
Triflurain	1582-09-8	63.00	C**	220.00	c*	8.70			0 17	
Trimethyl Phosphate	512-58-1	13 00	č	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 (Streetwart	or fall i have a war		دنې <sup>-</sup> ماني	Screening	evels	The Contraction of F	19.6.15	المراجع والمستحر الم	Protection of	Groundwater.
Constant of the state of the state of the state of the	The Providence	- J Marthan R	V. at he	- 中国建筑和专家	2.50	7. J.C. > 1. 19 9 6.	_3,≩′		Risk-based	MCL-based
		Residential Soil	key	Industrial Soil	key	Tapwater	key	B MCL	SSL SSL	SSL
Analyte	CAS No.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	J-++		47, 875 11 - 77 11 - 77	er, ug/L 🚉	1	st ug/L/ };		
Trimethylbenzene, 1,3,5-	108-67-8	- 47.00	n	200.00	n	12.00	n		0.02	
Tanitrobenzene, 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	С	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-butyItin	688-73-3	18 00	n	180.00	п	11 00	n	~ .	0 28	-
Uranium (Soluble Salts)	NA	230.00	n	3100.00	n	110 00	n	7	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	л	37.00	n		0 04	
Vinclozolın	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	~ <b>n</b>		0.09	-
Vinyl Bromide	593-60-2	0 11	c*	0 58	с*	0 15	C*		0 00	
Vinyi Chloride	75-01-4	0 06	C	1 70	c	0 02	ç	2 00	0.00	0 00
Warfarin	81-81-2	18 00	n	180 00	n	11.00	n		0.01	1
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	រាន	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	п		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	r 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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