SOIL ASSESSMENT REPORT

CHAPEL STREET BATTERY DUMP SITE
KANNAPOLIS, ROWAN COUNTY, NORTH CAROLINA
NONCD0000035

Prepared for:

North Carolina Department of Environment and Natural Resources
Division of Waste Management, Superfund Section
Inactive Hazardous Sites Branch
Raleigh, NC

Prepared by:

Solutions-IES, Inc.
1101 Nowell Road
Raleigh, NC 27607
www.solutions-ies.com

Solutions-IES Project No. 1519.09A3.NCDW

June 1, 2009

M. Tony Lieberman
Sr. Environmental Manager

Walter J. Beckwith, P.G.
Technical Services Director

Solutions-IES
Industrial & Environmental Services

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1.0 INTRODUCTION

The project work contained herein was conducted at the Chapel Street Battery site ("site") in Kannapolis, Rowan County, NC (NONCD0000035) under the North Carolina Department of Environment and Natural Resources (NCDENR), Division of Waste Management, Superfund Section, Inactive Hazardous Sites Branch (IHSB) *Orphan Sites Contract Number N03004S*, dated October 15, 2002. This work assignment was conducted per the NCDENR *Task Authorization Number TA-76 – Chapel Street Battery Dump Site* authorized March 17, 2009.

This Soil Assessment Report documents the assessment work performed at the site. Site information reviewed for the project was obtained from Mr. Keith Snavely of the IHSB. Solutions-IES, Inc. prepared a Site Assessment Plan (SAP) dated March 11, 2009 to guide the assessment.

2.0 FACILITY AND BACKGROUND INFORMATION

According to information provided to Solutions-IES by the IHSB, the site is located along an unpaved U-shaped road named Psalms Street, between E 31st Street and E 29th Street in Kannapolis, NC (**Figure 1**). This road is in the vicinity of the Victor Melton Construction Company (VMC), which was the former location of B&W Grocery (exact location not provided). Broken battery casings and chips were reportedly dumped at the rear of the former store property. The source of the battery casings/chips was suspected to be the Hartsoe Battery Dump site (NCD108702606) which is located at 2513 Linda Ave. in Kannapolis, NC.

The IHSB has made two previous site reconnaissance visits to the site. In December 1998, the owner of the property at 1102 Chapel Street clarified for the IHSB that that the battery chips in question were not located on the VMC property but on the residential property adjacent to the VMC. However, at that time, Ms. Harriet Melton also told the IHSB that no battery chips had been found on the residential property during grading operations done at that time.

In August 2000, the IHSB again visited the site. They did not report finding battery casings/chips on the VMC property, but did observe three areas along Psalms St. with surface indications of battery casings/chips. According to the IHSB, each of the three areas was approximately 6 ft wide x 10 ft long. The areas identified as PSALMS ST. A, B and C on **Figure 2** show the areas referred to in the IHSB observations. The IHSB did not collect any subsurface samples at the time to determine if the chips were

deeper than the surface or to assess possible lead concentrations in the soil. The property within the "U" of Psalms St. is owned by Ms. Margaret Caldwell.

During their site visit in 2000, the IHSB also identified water supply wells approximately 300 to 500 feet east and north of the site. According to Mr. Melton, the depth of these wells is unknown, and they have been tested with no contamination reported.

3.0 SITE ASSESSMENT ACTIVITIES

The objective of the current assessment was to provide additional information regarding the extent of the battery casings/chips along Psalms St. and attempt to delineate areas that might warrant further attention up to and including excavation and disposal. Reconnaissance of the Caldwell property was included in the scope-of-work to evaluate that property for battery casings or chips. If there was visible evidence of battery casings/chips on the Caldwell property or elsewhere along Psalms St., additional investigation of the shallow subsurface would be conducted to estimate the extent of the contamination in these areas, as well.

3.1 SITE RECONNAISANCE

Solutions-IES personnel mobilized to the site on April 17, 2009 to evaluate the original three areas (PSALMS ST. A, B and C) where IHSB previously observed battery chips on the surface. Psalms St. is approximately 15-ft wide and extends approximately 600 feet east of Kirk Ave. where it makes a 180 degree bend returning to the west to the Caldwell residence (see Photograph 1 in **Appendix A**). No battery chips were observed in the wooded area inside the "U" shaped portion of Psalms St. (see Photograph 2 in **Appendix A**). However, there was an area that appeared to have been recently graded. Two additional areas (PSALMS ST. D and E), also along Psalms St., were observed with visible battery chips during the reconnaissance. Mr. Keith Snavely of IHSB was contacted regarding these two areas and gave permission to sample the two additional areas. Approximate sampling locations are shown in **Figure 2.** GPS coordinates of the center of the sampling locations are provided in **Table 1**.

3.2 SOIL SAMPLING

Solutions-IES collected 4-point composite soil samples at each of the five areas along the road. In each of the areas, a grid was laid out with the four corners being approximately 5-ft apart. Each subsample

from the four points was collected from a depth of approximately 3 to 6 inches bgs (in. bgs) and placed in a decontaminated glass mixing bowl. The soil from the four subsamples was thoroughly mixed and one composite sample was collected from the bowl representing that area. The sample depth was accessed by scraping aside the gravel layer on the top of the road with a trowel, and using a hand auger to open a shallow boring to 3 in. bgs. The sample was collected with a second decontaminated hand auger. The samples were designated as PSALMS ST. A, B, C, D and E on the chain-of-custody form. Photograph 3 (**Appendix A)** shows one of the subsample borings for PSALMS ST. B.

Each composite sample was transferred to laboratory-supplied glassware and stored on ice until submittal to Pace Analytical Services in Huntersville, NC (Pace Lab) for analysis. Each of the samples were analyzed for the following 14 Target Analyte List (TAL) total metals: antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, manganese, silver, selenium, thallium and zinc by SW-846 Method 6010 and mercury by SW-846 Method 7471.

4.0 QUALITY ASSURANCE / QUALITY CONTROL (QA/QC) SAMPLES

One duplicate soil sample (Dup-1) was collected from PSALMS ST. B. An equipment rinse blank (RB-1) was collected by pouring deionized water over a decontaminated hand auger into the appropriate sample container. QA samples were logged onto the chain-of-custody form and submitted to Pace Labs for analysis of 13 TAL total metals by SW-846 Method 6010 and mercury by SW-846 Method 7471.

5.0 ANALYTICAL RESULTS

Table 2 summarizes the soil analytical results. Manganese exceeded the IHSB Protection of Groundwater Soil Remediation Goal (SRG) in all five samples. Silver also exceeded the IHSB Protection of Groundwater SRG in PSALMS ST. C and mercury exceeded the IHSB Protection of Groundwater in PSALMS ST. A, C and E. Concentrations of antimony and lead were both detected in samples PSALMS ST. B, C, D, and E exceeding both the IHSB Protection of Groundwater SRGs and IHSB Health-Based SRGs.

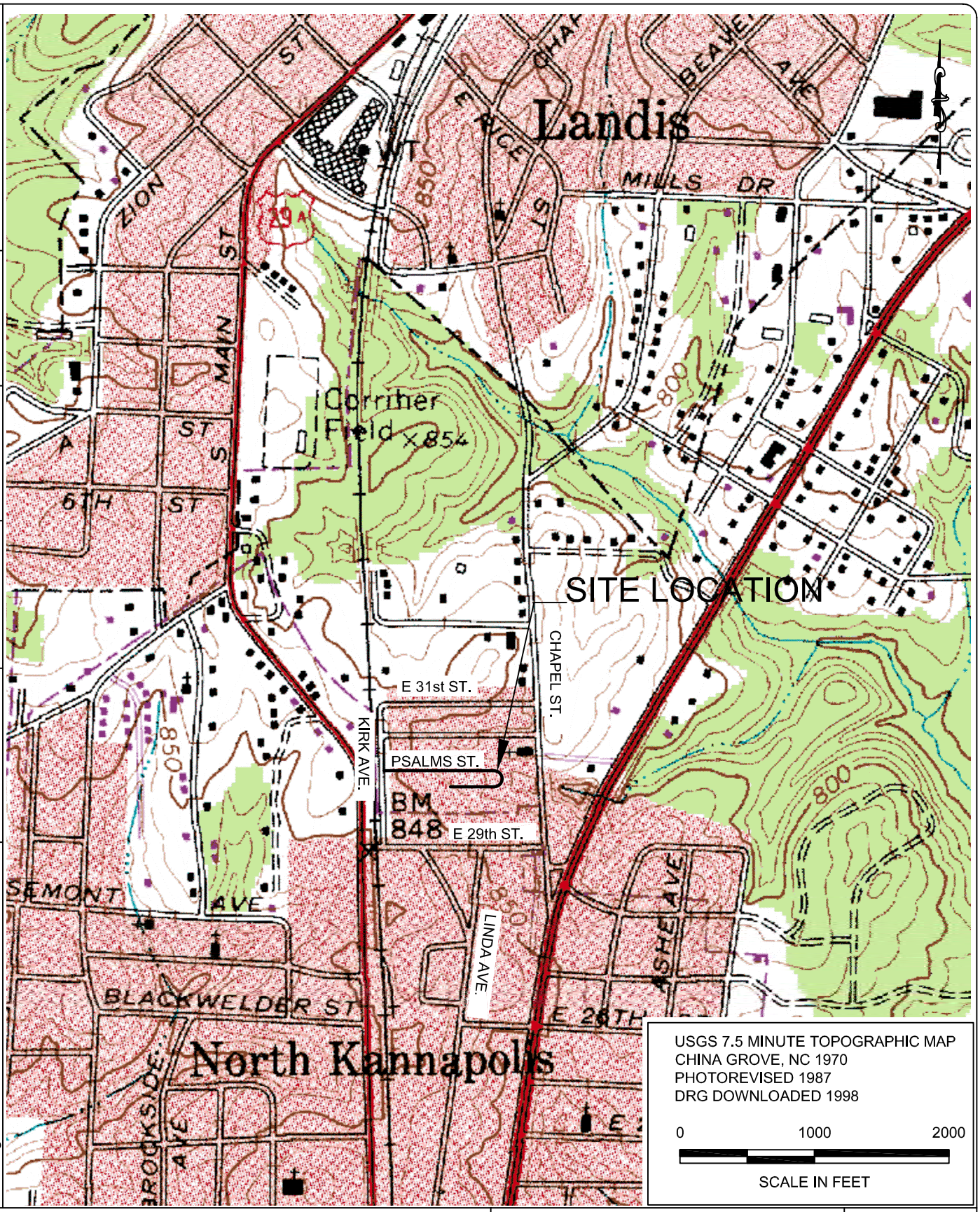
The concentrations of metals in Dup-1 of PSALMS ST. B, were similar both in number of analytes reported and concentrations of each analyte. No metals were detected in the equipment rinse blank RB-1.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The five areas along Psalms St. and near the Caldwell residence were observed to estimate the spread of the battery chips and sampled to measure the extent of heavy metal contamination. Lead was the main constituent of concern and was detected in PSALMS ST. B, C, D, and E above both the IHSB Protection of Groundwater SRG of 270 mg/kg and IHSB Health-Based SRG of 400 mg/kg. Sample PSALMS ST. A also contained elevated lead, but the concentration was only 193 mg/kg.

Should removal be considered, Solutions-IES recommends excavation of visible battery chips and casings found within the top 6 to 9 inches of gravel/dirt from each of the five areas along Psalms St. There is no clear demarcation of any of the areas. However, assuming that the dimensions are approximately 15 ft wide (i.e., the width of the road) x 10 ft long x 6 inches deep, this would calculate to an estimated volume of 75 cu. ft. or 2.8 cu. yd. of contaminated soil per area. Using an approximate bulk density of 1.4 tons per cu. yd. of soil, approximately 3.6 tons are estimated to be impacted at each location. Altogether, up to 18 tons of soil may warrant stabilization treatment or excavation and disposal. If the impact zone extended down to 9 inches bgs at each location, the estimate would increase to 5.8 tons per location or 29 tons total for all five areas.

FIGURES



USGS 7.5 MINUTE TOPOGRAPHIC MAP
CHINA GROVE, NC 1970
PHOTOREVISED 1987
DRG DOWNLOADED 1998

0 1000 2000

SCALE IN FEET

PROJECT NUMBER 1519.09A3.NCDW
DRAFTER JC
CHECKED BY TL
PROJECT MANAGER TL
DATE 3/10/09
FILE Figure1.PDF

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SITE LOCATION MAP
CHAPEL STREET BATTERY DUMP
KANNAPOLIS, ROWAN COUNTY
NORTH CAROLINA

FIGURE:
1

T:\Project Files\DENR\IHSB Contract\Chapel St Battery - 1519\CAD\ChapelSt.DWG

FILE	DATE	PROJECT MANAGER	CHECKED BY	DRAFTER	PROJECT NUMBER
Figure2.pdf	05/04/09	JC		JC	1519.09A3.NCDW

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COMPOSITE SAMPLE LOCATIONS
CHAPEL STREET BATTERY DUMP
KANNAPOLIS, ROWAN COUNTY, NORTH CAROLINA
NONCD0000035

FIGURE:

2

T:\.. .Chapel Street - 1519\CAD\ChapelSt.dwg

TABLES

TABLE 1
GPS Coordinates for Composite Samples Collected Along Psalms Street
Chapel Street Battery Dump Site
Kannapolis, Rowan County, North
Solutions-IES Project No. 1519.09A3.NCDW

Sample Location	GPS Latitude*	GPS Longitude*
PSALMS ST. A	35.53144502	-80.61236434
PSALMS ST. B	35.53153236	-80.61206401
PSALMS ST. C	35.53167980	-80.61211665
PSALMS ST. D	35.53172104	-80.61267195
PSALMS ST. E	35.53173068	-80.61284378

*GPS coordinates obtained on April 17, 2009 using by Garmin Model GPS-72.

TABLE 2
CONCENTRATIONS OF TARGET ANALYTE LIST METALS IN SOIL SAMPLES COLLECTED APRIL 17, 2009
CHAPEL STREET BATTERY DUMP
KANNAPOLIS, ROWAN COUNTY, NORTH CAROLINA
SOLUTIONS-IES PROJECT NO. 1519.09A3.NCDW

Sample ID	Date Sampled	Target Analyte List Metals by													Mercury by EPA Method 7471 (mg/kg)
		Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Manganese	Nickel	Selenium	Silver	Thallium	Zinc	Mercury
PSALMS ST. A	4/17/2009	**1.5**	**2.3**	**0.48**	**0.85**	**10.3**	**6.6**	**193**	**212**	**4.2**	**0.75**	<.36	<.72	**40.4**	**0.017**
PSALMS ST. B	4/17/2009	**19.4**	**2.1**	**0.23**	<.070	**5.2**	**4.4**	**2,750**	**93.0**	**1.4**	<.70	<.35	<.70	**12.7**	**0.0090**
PSALMS ST. C	4/17/2009	**402**	**24.7**	**0.097**	<.083	**4.6**	**10.9**	**43,600**	**102**	**3.2**	<.83	**0.89**	<.83	**29.5**	**0.020**
PSALMS ST. D	4/17/2009	**8.5**	**2.3**	**0.20**	<.068	**5.2**	**10.5**	**1,310**	**82.7**	**2.9**	<.68	<.34	<.68	**21.3**	**0.0062**
PSALMS ST. E	4/17/2009	**215**	**13.7**	**0.12**	<.077	**5.6**	**9.7**	**15,100**	**78.7**	**2.7**	<.77	<.38	<.77	**17.9**	**0.020**
DUP-1	4/17/2009	**18.1**	**1.7**	**0.17**	<.067	**3.6**	**5.2**	**2,280**	**173**	**1.9**	<.67	<.34	<.67	**15.5**	**0.0078**
Protection of Groundwater		5.42	26.2	3.38	0.95	27.2	704	270	65.2	56.4	12.2	0.217	0.512	550	0.015
IHSB Health-Based Soil Remediation Goals		6.20	4.40	32.0	14.0	46.0 (Cr^{+6})	620	400	360	320	78.0	78.0	1.0	4,600	4.6 (inorg salts)

Shading indicates concentrations in excess of IHSB Protection of Groundwater SRG-October 2008
Shading indicates concentrations in excess of IHSB Protection of Groundwater and Health-Based SRGs-October 2008
Dup-1 - Duplicate of PSALMS ST. B

APPENDIX A

PHOTOGRAPHS

Photograph 1. Psalms St. looking to the west toward the single family residence located on the Caldwell property.

Photograph 2. Recently tilled area of Caldwell property. No visual indicators of battery chips.

Photograph 3. Boring for one of the four locations used to prepare composite PSALMS ST. B. Shows approximate depth of gravel/battery chips.

APPENDIX B

LABORATORY ANALYTICAL REPORT

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

April 30, 2009

Mr. Joshua Clay
Solutions-IES
1101 Nowell Rd
Raleigh, NC 27607

RE: Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

Dear Mr. Clay:
Enclosed are the analytical results for sample(s) received by the laboratory on April 21, 2009. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Huntersville laboratory unless otherwise footnoted. All Microbiological analyses were performed at the laboratory where the samples were received.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Bonnie McKee

bonnie.mckee@pacelabs.com
Project Manager

Enclosures

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CERTIFICATIONS

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

Charlotte Certification IDs

West Virginia Certification #: 357
Virginia Certification #: 00213
Tennessee Certification #: 04010
South Carolina Drinking Water Cert. #: 990060003
South Carolina Certification #: 990060001
Pennsylvania Certification #: 68-00784
Connecticut Certification #: PH-0104
North Carolina Field Services Certification #: 5342
North Carolina Drinking Water Certification #: 37706
New Jersey Certification #: NC012
Louisiana/LELAP Certification #: 04034
Kentucky UST Certification #: 84
Florida/NELAP Certification #: E87627
North Carolina Wastewater Certification #: 12

Asheville Certification IDs

West Virginia Certification #: 356
Virginia Certification #: 00072
Connecticut Certification #: PH-0106
Florida/NELAP Certification #: E87648
Tennessee Certification #: 2980
South Carolina Certification #: 99030001
South Carolina Bioassay Certification #: 99030002
Pennsylvania Certification #: 68-03578
North Carolina Wastewater Certification #: 40
North Carolina Drinking Water Certification #: 37712
North Carolina Bioassay Certification #: 9
New Jersey Certification #: NC011
Massachusetts Certification #: M-NC030
Louisiana/LELAP Certification #: 03095

Eden Certification IDs

North Carolina Wastewater Certification #: 633
Virginia Drinking Water Certification #: 00424
North Carolina Drinking Water Certification #: 37738

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SAMPLE ANALYTE COUNT

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
9242541001	**PSALMS ST. A**	ASTM D2974-87	TNM	1	PASI-C
		EPA 6010	EWS	13	PASI-A
		EPA 7471	SHB	1	PASI-A
9242541002	**PSALMS ST. B**	ASTM D2974-87	TNM	1	PASI-C
		EPA 6010	EWS	13	PASI-A
		EPA 7471	SHB	1	PASI-A
9242541003	**PSALMS ST. C**	ASTM D2974-87	TNM	1	PASI-C
		EPA 6010	EWS	13	PASI-A
		EPA 7471	SHB	1	PASI-A
9242541004	**PSALMS ST. D**	ASTM D2974-87	TNM	1	PASI-C
		EPA 6010	EWS	13	PASI-A
		EPA 7471	SHB	1	PASI-A
9242541005	**PSALMS ST. E**	ASTM D2974-87	TNM	1	PASI-C
		EPA 6010	EWS	13	PASI-A
		EPA 7471	SHB	1	PASI-A
9242541006	**DUP-1**	ASTM D2974-87	TNM	1	PASI-C
		EPA 6010	EWS	13	PASI-A
		EPA 7471	SHB	1	PASI-A
9242541007	**RB-1**	EPA 6010	EWS	13	PASI-A
		EPA 7470	SHB	1	PASI-A

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ANALYTICAL RESULTS

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

Sample: PSALMS ST. A **Lab ID: 9242541001** Collected: 04/17/09 13:09 Received: 04/21/09 15:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Antimony	**1.5**	mg/kg	0.36	1	04/24/09 11:50	04/29/09 18:22	7440-36-0	
Arsenic	**2.3**	mg/kg	0.36	1	04/24/09 11:50	04/29/09 18:22	7440-38-2	
Beryllium	**0.48**	mg/kg	0.072	1	04/24/09 11:50	04/29/09 18:22	7440-41-7	
Cadmium	**0.85**	mg/kg	0.072	1	04/24/09 11:50	04/29/09 18:22	7440-43-9	
Chromium	**10.3**	mg/kg	0.36	1	04/24/09 11:50	04/29/09 18:22	7440-47-3	
Copper	**6.6**	mg/kg	0.36	1	04/24/09 11:50	04/29/09 18:22	7440-50-8	
Lead	**193**	mg/kg	0.36	1	04/24/09 11:50	04/29/09 18:22	7439-92-1	
Manganese	**212**	mg/kg	0.36	1	04/24/09 11:50	04/29/09 18:22	7439-96-5	
Nickel	**4.2**	mg/kg	0.36	1	04/24/09 11:50	04/29/09 18:22	7440-02-0	
Selenium	**0.75**	mg/kg	0.72	1	04/24/09 11:50	04/29/09 18:22	7782-49-2	
Silver	ND	mg/kg	0.36	1	04/24/09 11:50	04/29/09 18:22	7440-22-4	
Thallium	ND	mg/kg	0.72	1	04/24/09 11:50	04/29/09 18:22	7440-28-0	
Zinc	**40.4**	mg/kg	0.72	1	04/24/09 11:50	04/29/09 18:22	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.017**	mg/kg	0.0050	1	04/23/09 10:00	04/23/09 14:53	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**18.7**	%	0.10	1		04/22/09 09:16		

Sample: PSALMS ST. B **Lab ID: 9242541002** Collected: 04/17/09 13:20 Received: 04/21/09 15:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Antimony	**19.4**	mg/kg	0.35	1	04/24/09 11:50	04/29/09 18:27	7440-36-0	
Arsenic	**2.1**	mg/kg	0.35	1	04/24/09 11:50	04/29/09 18:27	7440-38-2	
Beryllium	**0.23**	mg/kg	0.070	1	04/24/09 11:50	04/29/09 18:27	7440-41-7	
Cadmium	ND	mg/kg	0.070	1	04/24/09 11:50	04/29/09 18:27	7440-43-9	
Chromium	**5.2**	mg/kg	0.35	1	04/24/09 11:50	04/29/09 18:27	7440-47-3	
Copper	**4.4**	mg/kg	0.35	1	04/24/09 11:50	04/29/09 18:27	7440-50-8	
Lead	**2750**	mg/kg	3.5	10	04/24/09 11:50	04/30/09 14:04	7439-92-1	
Manganese	**93.0**	mg/kg	0.35	1	04/24/09 11:50	04/29/09 18:27	7439-96-5	
Nickel	**1.4**	mg/kg	0.35	1	04/24/09 11:50	04/29/09 18:27	7440-02-0	
Selenium	ND	mg/kg	0.70	1	04/24/09 11:50	04/29/09 18:27	7782-49-2	
Silver	ND	mg/kg	0.35	1	04/24/09 11:50	04/29/09 18:27	7440-22-4	
Thallium	ND	mg/kg	0.70	1	04/24/09 11:50	04/29/09 18:27	7440-28-0	
Zinc	**12.7**	mg/kg	0.70	1	04/24/09 11:50	04/29/09 18:27	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.0090**	mg/kg	0.0048	1	04/24/09 13:15	04/24/09 15:40	7439-97-6	

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ANALYTICAL RESULTS

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

Sample: PSALMS ST. B **Lab ID: 9242541002** Collected: 04/17/09 13:20 Received: 04/21/09 15:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**4.3**	%	0.10	1		04/22/09 09:16		

Sample: PSALMS ST. C **Lab ID: 9242541003** Collected: 04/17/09 13:35 Received: 04/21/09 15:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Antimony	**402**	mg/kg	0.42	1	04/24/09 11:50	04/29/09 18:30	7440-36-0	
Arsenic	**24.7**	mg/kg	0.42	1	04/24/09 11:50	04/29/09 18:30	7440-38-2	
Beryllium	**0.097**	mg/kg	0.083	1	04/24/09 11:50	04/29/09 18:30	7440-41-7	
Cadmium	ND	mg/kg	0.083	1	04/24/09 11:50	04/29/09 18:30	7440-43-9	
Chromium	**4.6**	mg/kg	0.42	1	04/24/09 11:50	04/29/09 18:30	7440-47-3	
Copper	**10.9**	mg/kg	0.42	1	04/24/09 11:50	04/29/09 18:30	7440-50-8	
Lead	**43600**	mg/kg	208	500	04/24/09 11:50	04/30/09 16:21	7439-92-1	
Manganese	**102**	mg/kg	0.42	1	04/24/09 11:50	04/29/09 18:30	7439-96-5	
Nickel	**3.2**	mg/kg	0.42	1	04/24/09 11:50	04/29/09 18:30	7440-02-0	
Selenium	ND	mg/kg	0.83	1	04/24/09 11:50	04/29/09 18:30	7782-49-2	
Silver	**0.89**	mg/kg	0.42	1	04/24/09 11:50	04/29/09 18:30	7440-22-4	
Thallium	ND	mg/kg	0.83	1	04/24/09 11:50	04/29/09 18:30	7440-28-0	
Zinc	**29.5**	mg/kg	0.83	1	04/24/09 11:50	04/29/09 18:30	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.020**	mg/kg	0.0024	1	04/24/09 13:15	04/24/09 15:42	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**4.6**	%	0.10	1		04/22/09 09:16		

Sample: PSALMS ST. D **Lab ID: 9242541004** Collected: 04/17/09 13:45 Received: 04/21/09 15:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Antimony	**8.5**	mg/kg	0.34	1	04/24/09 11:50	04/29/09 18:34	7440-36-0	
Arsenic	**2.3**	mg/kg	0.34	1	04/24/09 11:50	04/29/09 18:34	7440-38-2	
Beryllium	**0.20**	mg/kg	0.068	1	04/24/09 11:50	04/29/09 18:34	7440-41-7	
Cadmium	ND	mg/kg	0.068	1	04/24/09 11:50	04/29/09 18:34	7440-43-9	
Chromium	**5.2**	mg/kg	0.34	1	04/24/09 11:50	04/29/09 18:34	7440-47-3	
Copper	**10.5**	mg/kg	0.34	1	04/24/09 11:50	04/29/09 18:34	7440-50-8	
Lead	**1310**	mg/kg	3.4	10	04/24/09 11:50	04/30/09 14:11	7439-92-1	
Manganese	**82.7**	mg/kg	0.34	1	04/24/09 11:50	04/29/09 18:34	7439-96-5	
Nickel	**2.9**	mg/kg	0.34	1	04/24/09 11:50	04/29/09 18:34	7440-02-0	

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ANALYTICAL RESULTS

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

Sample: PSALMS ST. D **Lab ID: 9242541004** Collected: 04/17/09 13:45 Received: 04/21/09 15:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Selenium	ND	mg/kg	0.68	1	04/24/09 11:50	04/29/09 18:34	7782-49-2	
Silver	ND	mg/kg	0.34	1	04/24/09 11:50	04/29/09 18:34	7440-22-4	
Thallium	ND	mg/kg	0.68	1	04/24/09 11:50	04/29/09 18:34	7440-28-0	
Zinc	**21.3**	mg/kg	0.68	1	04/24/09 11:50	04/29/09 18:34	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.0062**	mg/kg	0.0037	1	04/24/09 13:15	04/24/09 15:45	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**11.3**	%	0.10	1		04/22/09 09:16		

Sample: PSALMS ST. E **Lab ID: 9242541005** Collected: 04/17/09 13:55 Received: 04/21/09 15:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Antimony	**215**	mg/kg	0.38	1	04/24/09 11:50	04/29/09 18:38	7440-36-0	
Arsenic	**13.7**	mg/kg	0.38	1	04/24/09 11:50	04/29/09 18:38	7440-38-2	
Beryllium	**0.12**	mg/kg	0.077	1	04/24/09 11:50	04/29/09 18:38	7440-41-7	
Cadmium	ND	mg/kg	0.077	1	04/24/09 11:50	04/29/09 18:38	7440-43-9	
Chromium	**5.6**	mg/kg	0.38	1	04/24/09 11:50	04/29/09 18:38	7440-47-3	
Copper	**9.7**	mg/kg	0.38	1	04/24/09 11:50	04/29/09 18:38	7440-50-8	
Lead	**15100**	mg/kg	192	500	04/24/09 11:50	04/30/09 16:24	7439-92-1	
Manganese	**78.7**	mg/kg	0.38	1	04/24/09 11:50	04/29/09 18:38	7439-96-5	
Nickel	**2.7**	mg/kg	0.38	1	04/24/09 11:50	04/29/09 18:38	7440-02-0	
Selenium	ND	mg/kg	0.77	1	04/24/09 11:50	04/29/09 18:38	7782-49-2	
Silver	ND	mg/kg	0.38	1	04/24/09 11:50	04/29/09 18:38	7440-22-4	
Thallium	ND	mg/kg	0.77	1	04/24/09 11:50	04/29/09 18:38	7440-28-0	
Zinc	**17.9**	mg/kg	0.77	1	04/24/09 11:50	04/29/09 18:38	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.020**	mg/kg	0.0044	1	04/24/09 13:15	04/24/09 15:47	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**11.0**	%	0.10	1		04/22/09 09:17		

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ANALYTICAL RESULTS

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

Sample: DUP-1 **Lab ID: 9242541006** Collected: 04/17/09 00:00 Received: 04/21/09 15:40 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Antimony	**18.1**	mg/kg	0.34	1	04/24/09 11:50	04/29/09 18:42	7440-36-0	
Arsenic	**1.7**	mg/kg	0.34	1	04/24/09 11:50	04/29/09 18:42	7440-38-2	
Beryllium	**0.17**	mg/kg	0.067	1	04/24/09 11:50	04/29/09 18:42	7440-41-7	
Cadmium	ND	mg/kg	0.067	1	04/24/09 11:50	04/29/09 18:42	7440-43-9	
Chromium	**3.6**	mg/kg	0.34	1	04/24/09 11:50	04/29/09 18:42	7440-47-3	
Copper	**5.2**	mg/kg	0.34	1	04/24/09 11:50	04/29/09 18:42	7440-50-8	
Lead	**2280**	mg/kg	3.4	10	04/24/09 11:50	04/30/09 14:22	7439-92-1	
Manganese	**173**	mg/kg	0.34	1	04/24/09 11:50	04/29/09 18:42	7439-96-5	
Nickel	**1.9**	mg/kg	0.34	1	04/24/09 11:50	04/29/09 18:42	7440-02-0	
Selenium	ND	mg/kg	0.67	1	04/24/09 11:50	04/29/09 18:42	7782-49-2	
Silver	ND	mg/kg	0.34	1	04/24/09 11:50	04/29/09 18:42	7440-22-4	
Thallium	ND	mg/kg	0.67	1	04/24/09 11:50	04/29/09 18:42	7440-28-0	
Zinc	**15.5**	mg/kg	0.67	1	04/24/09 11:50	04/29/09 18:42	7440-66-6	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.0078**	mg/kg	0.0029	1	04/24/09 13:15	04/24/09 15:50	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**11.6**	%	0.10	1		04/22/09 09:17		

Sample: RB-1 **Lab ID: 9242541007** Collected: 04/17/09 14:00 Received: 04/21/09 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Antimony	ND	ug/L	5.0	1	04/25/09 13:00	04/29/09 02:30	7440-36-0	
Arsenic	ND	ug/L	5.0	1	04/25/09 13:00	04/29/09 02:30	7440-38-2	
Beryllium	ND	ug/L	1.0	1	04/25/09 13:00	04/29/09 02:30	7440-41-7	
Cadmium	ND	ug/L	1.0	1	04/25/09 13:00	04/29/09 02:30	7440-43-9	
Chromium	ND	ug/L	5.0	1	04/25/09 13:00	04/29/09 02:30	7440-47-3	
Copper	ND	ug/L	5.0	1	04/25/09 13:00	04/29/09 02:30	7440-50-8	
Lead	ND	ug/L	5.0	1	04/25/09 13:00	04/29/09 02:30	7439-92-1	
Manganese	ND	ug/L	5.0	1	04/25/09 13:00	04/29/09 02:30	7439-96-5	
Nickel	ND	ug/L	5.0	1	04/25/09 13:00	04/29/09 02:30	7440-02-0	
Selenium	ND	ug/L	10.0	1	04/25/09 13:00	04/29/09 02:30	7782-49-2	
Silver	ND	ug/L	5.0	1	04/25/09 13:00	04/29/09 02:30	7440-22-4	
Thallium	ND	ug/L	10.0	1	04/25/09 13:00	04/29/09 02:30	7440-28-0	
Zinc	ND	ug/L	10.0	1	04/25/09 13:00	04/29/09 02:30	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	04/23/09 17:30	04/24/09 13:52	7439-97-6	

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QUALITY CONTROL DATA

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

QC Batch: MERP/2091
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Associated Lab Samples: 9242541007

METHOD BLANK: 267540 Matrix: Water
Associated Lab Samples: 9242541007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	04/24/09 12:45	

LABORATORY CONTROL SAMPLE: 267541

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	2.5	2.4	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 267542 267543

Parameter	Units	9242382001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	ug/L	ND	2.5	2.5	2.4	2.4	98	98	75-125	.4	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 267545 267546

Parameter	Units	9242420008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	ug/L	ND	2.5	2.5	1.8	1.8	72	71	75-125	.6	M0

SAMPLE DUPLICATE: 267544

Parameter	Units	9242382002 Result	Dup Result	RPD	Qualifiers
Mercury	ug/L	ND	ND		

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QUALITY CONTROL DATA

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

QC Batch: MPRP/4198 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 9242541001, 9242541002, 9242541003, 9242541004, 9242541005, 9242541006

METHOD BLANK: 268217 Matrix: Solid
Associated Lab Samples: 9242541001, 9242541002, 9242541003, 9242541004, 9242541005, 9242541006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	mg/kg	ND	0.50	04/29/09 17:22	
Arsenic	mg/kg	ND	0.50	04/29/09 17:22	
Beryllium	mg/kg	ND	0.10	04/29/09 17:22	
Cadmium	mg/kg	ND	0.10	04/29/09 17:22	
Chromium	mg/kg	ND	0.50	04/29/09 17:22	
Copper	mg/kg	ND	0.50	04/29/09 17:22	
Lead	mg/kg	ND	0.50	04/29/09 17:22	
Manganese	mg/kg	ND	0.50	04/29/09 17:22	
Nickel	mg/kg	ND	0.50	04/29/09 17:22	
Selenium	mg/kg	ND	1.0	04/29/09 17:22	
Silver	mg/kg	ND	0.50	04/29/09 17:22	
Thallium	mg/kg	ND	1.0	04/29/09 17:22	
Zinc	mg/kg	ND	1.0	04/29/09 17:22	

LABORATORY CONTROL SAMPLE: 268218

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/kg	50	47.1	94	80-120	
Arsenic	mg/kg	50	46.1	92	80-120	
Beryllium	mg/kg	50	47.6	95	80-120	
Cadmium	mg/kg	50	46.8	94	80-120	
Chromium	mg/kg	50	46.8	94	80-120	
Copper	mg/kg	50	47.2	94	80-120	
Lead	mg/kg	50	46.7	93	80-120	
Manganese	mg/kg	50	47.4	95	80-120	
Nickel	mg/kg	50	47.1	94	80-120	
Selenium	mg/kg	50	45.0	90	80-120	
Silver	mg/kg	25	24.4	98	80-120	
Thallium	mg/kg	50	44.7	89	80-120	
Zinc	mg/kg	50	47.0	94	80-120	

MATRIX SPIKE SAMPLE: 268219

Parameter	Units	9242576005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	mg/kg	1.6	32.5	18.1	50	75-125	M0
Arsenic	mg/kg	10.9	32.5	31.7	56	75-125	M0
Beryllium	mg/kg	0.19	32.5	29.9	91	75-125	
Cadmium	mg/kg	6.7	32.5	30.5	69	75-125	M0
Chromium	mg/kg	24.3	32.5	50.7	64	75-125	M0
Copper	mg/kg	0.40	32.5	31.5	95	75-125	

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QUALITY CONTROL DATA

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

MATRIX SPIKE SAMPLE: 268219

Parameter	Units	9242576005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	6.5	32.5	31.6	73	75-125	M0
Manganese	mg/kg	0.79	32.5	30.3	90	75-125	
Nickel	mg/kg	0.40	32.5	28.8	87	75-125	
Selenium	mg/kg	1.8	32.5	25.5	72	75-125	M0
Silver	mg/kg	0.048J	16.3	15.5	95	75-125	
Thallium	mg/kg	0.22J	32.5	23.7	72	75-125	M0
Zinc	mg/kg	6.5	32.5	33.7	79	75-125	

SAMPLE DUPLICATE: 268220

Parameter	Units	9242576006 Result	Dup Result	RPD	Qualifiers
Antimony	mg/kg	0.58	0.57	1	
Arsenic	mg/kg	0.47	0.47	.4	
Beryllium	mg/kg	0.055J	.055J		
Cadmium	mg/kg	ND	ND		
Chromium	mg/kg	10.4	10.0	4	
Copper	mg/kg	0.035J	ND		
Lead	mg/kg	4.3	4.4	2	
Manganese	mg/kg	0.74	0.78	5	
Nickel	mg/kg	0.97	0.99	2	
Selenium	mg/kg	ND	.24J		
Silver	mg/kg	ND	ND		
Thallium	mg/kg	ND	ND		
Zinc	mg/kg	0.50J	0.65		

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QUALITY CONTROL DATA

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

QC Batch: MERP/2089 Analysis Method: EPA 7471
QC Batch Method: EPA 7471 Analysis Description: 7471 Mercury
Associated Lab Samples: 9242541002, 9242541003, 9242541004, 9242541005, 9242541006

METHOD BLANK: 267530 Matrix: Solid
Associated Lab Samples: 9242541002, 9242541003, 9242541004, 9242541005, 9242541006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.0050	04/24/09 15:02	

LABORATORY CONTROL SAMPLE: 267531

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.067	0.062	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 267532 267533

Parameter	Units	9242641001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	mg/kg	ND	.066	.064	0.058	0.056	85	83	75-125	5	

SAMPLE DUPLICATE: 267534

Parameter	Units	9242641002 Result	Dup Result	RPD	Qualifiers
Mercury	mg/kg	ND	ND		

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QUALITY CONTROL DATA

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

QC Batch: MPRP/4205
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 9242541007

METHOD BLANK: 268986 Matrix: Water
Associated Lab Samples: 9242541007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	04/29/09 01:05	
Arsenic	ug/L	ND	5.0	04/29/09 01:05	
Beryllium	ug/L	ND	1.0	04/29/09 01:05	
Cadmium	ug/L	ND	1.0	04/29/09 01:05	
Chromium	ug/L	ND	5.0	04/29/09 01:05	
Copper	ug/L	ND	5.0	04/29/09 01:05	
Lead	ug/L	ND	5.0	04/29/09 01:05	
Manganese	ug/L	ND	5.0	04/29/09 01:05	
Nickel	ug/L	ND	5.0	04/29/09 01:05	
Selenium	ug/L	ND	10.0	04/29/09 01:05	
Silver	ug/L	ND	5.0	04/29/09 01:05	
Thallium	ug/L	ND	10.0	04/29/09 01:05	
Zinc	ug/L	ND	10.0	04/29/09 01:05	

LABORATORY CONTROL SAMPLE: 268987

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	500	464	93	80-120	
Arsenic	ug/L	500	457	91	80-120	
Beryllium	ug/L	500	475	95	80-120	
Cadmium	ug/L	500	461	92	80-120	
Chromium	ug/L	500	470	94	80-120	
Copper	ug/L	500	458	92	80-120	
Lead	ug/L	500	466	93	80-120	
Manganese	ug/L	500	472	94	80-120	
Nickel	ug/L	500	466	93	80-120	
Selenium	ug/L	500	456	91	80-120	
Silver	ug/L	250	230	92	80-120	
Thallium	ug/L	500	440	88	80-120	
Zinc	ug/L	500	468	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 268988 268989

Parameter	Units	9242429005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Antimony	ug/L	ND	500	500	423	429	85	86	75-125	1	
Arsenic	ug/L	ND	500	500	423	431	84	86	75-125	2	
Beryllium	ug/L	ND	500	500	433	438	86	87	75-125	1	
Cadmium	ug/L	ND	500	500	422	428	84	86	75-125	1	
Chromium	ug/L	ND	500	500	429	435	86	87	75-125	1	

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QUALITY CONTROL DATA

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 268988 268989

Parameter	Units	9242429005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Copper	ug/L	ND	500	500	430	432	85	86	75-125	.5	
Lead	ug/L	ND	500	500	428	434	85	86	75-125	1	
Manganese	ug/L	362	500	500	770	795	82	87	75-125	3	
Nickel	ug/L	ND	500	500	426	432	85	86	75-125	1	
Selenium	ug/L	ND	500	500	426	430	85	86	75-125	.9	
Silver	ug/L	ND	250	250	216	218	86	87	75-125	.9	
Thallium	ug/L	ND	500	500	400	408	80	82	75-125	2	
Zinc	ug/L	23.6	500	500	451	459	85	87	75-125	2	

SAMPLE DUPLICATE: 268990

Parameter	Units	9242429006 Result	Dup Result	RPD	Qualifiers
Antimony	ug/L	ND	ND		
Arsenic	ug/L	ND	ND		
Beryllium	ug/L	1.8	.95J		
Cadmium	ug/L	ND	ND		
Chromium	ug/L	15.6	14.0	11	
Copper	ug/L	16.0	14.8	8	
Lead	ug/L	ND	ND		
Manganese	ug/L	2310	2270	2	
Nickel	ug/L	8.4	7.3	14	
Selenium	ug/L	ND	ND		
Silver	ug/L	ND	.3J		
Thallium	ug/L	ND	ND		
Zinc	ug/L	91.6	84.8	8	

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QUALITY CONTROL DATA

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

QC Batch: PMST/2396 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 9242541001, 9242541002, 9242541003, 9242541004, 9242541005, 9242541006

SAMPLE DUPLICATE: 266512

Parameter	Units	9242244005 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	11.9	12.4	4	

SAMPLE DUPLICATE: 266513

Parameter	Units	9242551001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	39.1	37.1	5	

Pace Analytical Services, Inc.
2225 Riverside Dr.
Asheville, NC 28804
(828)254-7176

Pace Analytical Services, Inc.
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

QC Batch: MERP/2085
QC Batch Method: EPA 7471
Analysis Method: EPA 7471
Analysis Description: 7471 Mercury
Associated Lab Samples: 9242541001

METHOD BLANK: 266637 Matrix: Solid
Associated Lab Samples: 9242541001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.0050	04/23/09 13:46	

LABORATORY CONTROL SAMPLE: 266638

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.067	0.069	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 266639 266640

Parameter	Units	9242464001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Mercury	mg/kg	ND	.09	.088	0.083	0.077	92	88	75-125	8	

SAMPLE DUPLICATE: 266641

Parameter	Units	9242464002 Result	Dup Result	RPD	Qualifiers
Mercury	mg/kg	ND	ND		

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QUALIFIERS

Project: CHAPEL ST. BATTERY DUMP 1519.0
Pace Project No.: 9242541

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

M0	Matrix spike recovery was outside laboratory control limits.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

1305125

Section A — Required Client Information:
- Company: Solutions-IES
- Address: 1101 Nowell Rd, Raleigh, NC 27607
- Email To: clayj@solutions-ies.com
- Phone:
- Fax:
- Requested Due Date/TAT: 10 bus. day

Section B — Required Project Information:
- Report To: Joshua Clay
- Copy To:
- Purchase Order No.:
- Project Name: Chapel St. Battery Dump
- Project Number: 1519.09A3. NCDW

Section C — Invoice Information:
- Attention: Mary Howard
- Company Name: Solutions-IES
- Address:
- Pace Quote Reference:
- Pace Project Manager: Joshua Clay
- Pace Profile #: 3246-6

REGULATORY AGENCY
- ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
- ☐ UST ☐ RCRA ☐ OTHER ______

Site Location STATE: NC

Section D — Required Client Information

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N): N, N

Analysis Test: TAL total Metals by SW-846 6010/7471

Pace Project No./ Lab I.D.: 92425541

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	Composite Start DATE	Composite Start TIME	Composite End/Grab DATE	Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	TAL total Metals by SW-846 6010/7471	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Psalms St. A	SL	C	4/17/09	1209				1	1								X		001 Metals include
2	Psalms St. B	SL	C	↓	1320				1	1								X		002 antimony arsenic
3	Psalms St. C	SL	C	↓	1335				1	1								X		003 beryllium, cadmium
4	Psalms St. D	SL	C	↓	1345				1	1								X		004 Chromium copper
5	Psalms St. E	SL	C	↓	1355				1	1								X		005 lead nickel
6	Dup-1	SL	C	↓	—				1	1								X		006 Manganese silver
7	RB-1	WT	G	↓	1400				1			1						X		007 Selenium thallium
8																				zinc + mercury
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
TAL: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Manganese, Silver, Selenium, Thallium, Zinc, Mercury	[signature] Solutions-IES	4/20/09	10:30	[signature] Pace	4/21/9	1030				
	[signature] / Pace	4/21/9	1540	[signature] / Pace	4/21/09	1540	2.8	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
- PRINT Name of SAMPLER: Joshua T. Clay
- SIGNATURE of SAMPLER: [signature]
- DATE Signed (MM/DD/YY): 4/20/09

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical

Sample Condition Upon Receipt

Client Name: Solutions-IES Project # 9242541

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace Other _____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Optional
Proj. Due Date: N/A
Proj. Name: N/A

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer Used T060 Type of Ice: (Wet) Blue None ☑ Samples on ice, cooling process has begun

Cooler Temperature 2.4 Biological Tissue is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 4/21/09

		Comments:
Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: SLWT		
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): N/A		

Client Notification/ Resolution: Field Data Required? Y / N / N/A

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: BKM Date: 4/21/09

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)