



Pace Analytical Services, Inc.
400 W. Bethany Drive, Suite 190
Allen, TX 75013
(972) 727-1123

July 29, 2013

Rusty Simpson
Southwest Geoscience
2351 W. Northwest Hwy
Suite 3321
Dallas, TX 75220

RE: Pace Project 756761
Project ID: 0111C278A/Stewart Creek

Dear Rusty Simpson:

Enclosed are the analytical results for sample(s) received by the laboratory on July 12, 2013. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

A handwritten signature in cursive script that reads "Shelly Connelly".

Shelly Connelly
shelly.connelly@pacelabs.com

Laboratory Certifications

Pace Dallas : Texas Certification #: T104704232-12-4



REPORT OF LABORATORY ANALYSIS

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07/29/2013 17:45:23



Sample Cross Reference

Pace Analytical Services, Inc.
400 W. Bethany Drive, Suite 190
Allen, TX 75013
(972) 727-1123

Pace Project No.: 756761

Client: Southwest Geoscience
Project ID: 0111C278A/Stewart Creek

Client Sample ID	Lab ID	Matrix	Collection Date/Time	Received Date/Time
Chip (6-21)-1	756761001	Solid	06/21/2013 14:32	07/12/2013 11:36
Slag (6-24)-1	756761002	Solid	06/24/2013 16:25	07/12/2013 11:36
Slag (6-24)-2	756761003	Solid	06/24/2013 16:40	07/12/2013 11:36
Slag (6-24)-2 Base	756761004	Solid	06/24/2013 16:40	07/12/2013 11:36



Project Narrative

Pace Analytical Services, Inc.
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Pace Project No.: 756761

Holding Times:

All holding times were within method requirements.

Blanks:

All blank results were below reporting limits.

Laboratory Control Samples:

All LCS recoveries were within QC limits.

Matrix Spikes and Duplicates:

MS or MSD recoveries outside of QC limits are qualified in the Report of Quality Control section.

Surrogate:

All surrogate recoveries were within QC limits.

Appendix A
LABORATORY DATA PACKAGE COVER PAGE

This data package is for Job No. 756761 and consists of:

This signature page, the laboratory review checklist, and the following reportable data:

- R1 - Field chain-of-custody documentation;
- R2 - Sample identification cross-reference;
- R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. Dilution factors,
 - c. Preparation methods,
 - d. Cleanup methods, and
 - e. If required for the project, tentatively identified compounds (TICs).
- R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- R5 - Test reports/summary forms for blank samples;
- R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- R7 - Test reports/summary forms for matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences, and
 - e. The laboratory's MS/MSD QC limits.
- R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and,
 - c. The laboratory's QC limits for analytical duplicated.
- R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte and
- R10 - Other problems or anomalies.

The exception Report for each "No" or "Not Reviewed (NR) " item in the Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [X] TCEQ on 02/24/2012

Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Name (Printed)
Shelly Connelly

Signature
Shelly Connelly

Official Title (Printed)
Project Manager

Date
07/29/2013



Sample Results

Pace Analytical Services, Inc.
400 W. Bethany Drive, Suite 190
Allen, TX 75013
(972) 727-1123

Client: Southwest Geoscience

Client ID: Chip (6-21)-1

Lab ID: 756761001

Collected: 06/21/2013 14:32

Moisture: N/A

Received: 07/12/2013 11:36

Project ID: 0111C278A/Stewart Creek

Pace Project No.: 756761

Matrix: Solid

Parameters	DF	Results	Qual	Units	ML	SDL	Analysis Date	Prep Date	Batch	Instr.
6010 Metals, TCLP		Analytical Method: EPA 6010			Preparation Method: EPA 3010			Leachate Method: EPA 1311		
Lead	1	4.1		mg/L	0.050	0.020	07/19/2013 17:16	07/19/2013 12:00	7952	75ICP1



Sample Results

Pace Analytical Services, Inc.
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Client: Southwest Geoscience

Client ID: Slag (6-24)-1

Project ID: 0111C278A/Stewart Creek

Lab ID: 756761002

Moisture: N/A

Pace Project No.: 756761

Collected: 06/24/2013 16:25

Received: 07/12/2013 11:36

Matrix: Solid

Parameters	DF	Results	Qual	Units	MQL	SDL	Analysis Date	Prep Date	Batch	Instr.
6010 Metals, TCLP		Analytical Method: EPA 6010			Preparation Method: EPA 3010		Leachate Method: EPA 1311			
Arsenic	1	0.084		mg/L	0.050	0.020	07/19/2013 17:22	07/19/2013 12:00	7952	75ICP1
Lead	1	23.7		mg/L	0.050	0.020	07/19/2013 17:22	07/19/2013 12:00	7952	75ICP1



Sample Results

Pace Analytical Services, Inc.
400 W. Bethany Drive, Suite 190
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Client: Southwest Geoscience

Client ID: Slag (6-24)-2

Project ID: 0111C278A/Stewart Creek

Lab ID: 756761003

Moisture: N/A

Pace Project No.: 756761

Collected: 06/24/2013 16:40

Received: 07/12/2013 11:36

Matrix: Solid

Parameters	DF	Results	Qual	Units	ML	SDL	Analysis Date	Prep Date	Batch	Instr.
6010 Metals, TCLP		Analytical Method: EPA 6010			Preparation Method: EPA 3010			Leachate Method: EPA 1311		
Arsenic	1	< 0.020	U	mg/L	0.050	0.020	07/22/2013 23:35	07/22/2013 15:59	7990	75ICP1
Lead	1	37.8	M1	mg/L	0.050	0.020	07/22/2013 23:35	07/22/2013 15:59	7990	75ICP1



Sample Results

Pace Analytical Services, Inc.
400 W. Bethany Drive, Suite 190
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(972) 727-1123

Client: Southwest Geoscience

Client ID: Slag (6-24)-2 Base

Project ID: 0111C278A/Stewart Creek

Lab ID: 756761004

Moisture: N/A

Pace Project No.: 756761

Collected: 06/24/2013 16:40

Received: 07/12/2013 11:36

Matrix: Solid

Parameters	DF	Results	Qual	Units	ML	SDL	Analysis Date	Prep Date	Batch	Instr.
6010 Metals, TCLP		Analytical Method: EPA 6010			Preparation Method: EPA 3010		Leachate Method: EPA 1311			
Arsenic	1	0.084		mg/L	0.050	0.020	07/19/2013 17:27	07/19/2013 12:00	7952	75ICP1
Lead	1	20.6		mg/L	0.050	0.020	07/19/2013 17:27	07/19/2013 12:00	7952	75ICP1



Quality Control

Pace Analytical Services, Inc.
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Batch: 7952
 Method: EPA 6010
 Prep Method: EPA 3010

Pace Project No.: 756761
 Instrument ID: 75ICP1

Blank: 32169

Parameters	Dilution	Quals	Result	Units	MQL	SDL	Analysis Date	Prep Date
Arsenic	1	U	<0.020	mg/L	0.050	0.020	07/19/2013 14:30	07/19/2013 12:00
Lead	1	U	<0.020	mg/L	0.050	0.020	07/19/2013 14:30	07/19/2013 12:00

Laboratory Control Sample: 32170

Parameters	Spk Amt	LCS Result	Units	LCS %Rec	% Rec Limits	LCS Quals
Arsenic	10	9.7	mg/L	97	80-120	
Lead	10	10.3	mg/L	103	80-120	

Matrix Spike: 32171

Matrix Spike Duplicate: 32172

Original for Sample: Batch sample 756789001

Parameters	Original Result	MS Spk	MSD Spk	MS Result	MSD Result	Units	MS %Rec	MSD %Rec	% Rec Limits	RPD	Max RPD	Quals
Arsenic	<0.020	10	10	10.0	10.0	mg/L	100	100	75-125	0	20	
Lead	<0.020	10	10	10.1	10.2	mg/L	101	102	75-125	1	20	

Matrix Spike: 32173

Matrix Spike Duplicate: 32174

Original for Sample: Batch sample 756789002

Parameters	Original Result	MS Spk	MSD Spk	MS Result	MSD Result	Units	MS %Rec	MSD %Rec	% Rec Limits	RPD	Max RPD	Quals
Arsenic	<0.020	10	10	10.1	10.1	mg/L	101	101	75-125	0	20	
Lead	<0.020	10	10	10	10	mg/L	100	100	75-125	0	20	



Quality Control

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Batch: 7990
 Method: EPA 6010
 Prep Method: EPA 3010

Pace Project No.: 756761
 Instrument ID: 75ICP1

Blank: 32294

Parameters	Dilution	Quals	Result	Units	MQL	SDL	Analysis Date	Prep Date
Arsenic	1	U	<0.020	mg/L	0.050	0.020	07/22/2013 22:51	07/22/2013 15:59
Lead	1	U	<0.020	mg/L	0.050	0.020	07/22/2013 22:51	07/22/2013 15:59

Laboratory Control Sample: 32295

Parameters	Spk Amt	LCS Result	Units	LCS %Rec	% Rec Limits	LCS Quals
Arsenic	10	9.7	mg/L	97	80-120	
Lead	10	9.9	mg/L	99	80-120	

Matrix Spike: 32296

Matrix Spike Duplicate: 32297

Original for Sample: Project sample Slag (6-24)-2

Parameters	Original Result	MS Spk	MSD Spk	MS Result	MSD Result	Units	MS %Rec	MSD %Rec	% Rec Limits	RPD	Max RPD	Quals
Arsenic	<0.020	10	10	10	10.2	mg/L	100	102	75-125	2	20	
Lead	37.8	10	10	44.2	44.7	mg/L	64	70	75-125	1	20	M1



Unadjusted MQL Summary

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Pace Project No.: 756761

Analyte	Method	Unadjusted MQL	Reporting Units
Arsenic	EPA 6010	0.050	mg/L
Lead	EPA 6010	0.050	mg/L



Pace Project No.: 756761

DEFINITIONS

- DF Dilution Factor
- J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
- U Indicates the compound was analyzed for, but not detected.
- SDL Sample Detection Limit
- MQL Method Quantitation Limit
- LCS(D) Laboratory Control Sample (Duplicate)
- MS(D) Matrix Spike (Duplicate)
- DUP Sample Duplicate
- RPD Relative Percent Difference
- TNI The Nelac Institute

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

ANALYTE QUALIFIERS

- M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

TRRP LABORATORY REVIEW CHECKLIST

Laboratory		Pace Analytical Services, Inc.	LRC Date:		07/29/2013		
Project Name:		0111C278A/Stewart Creek	Laboratory Job Number:		756761		
Reviewer Name:		Shelly Connelly	Prep Batch Number(s):		See exception report.		
# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER # ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			R7.3
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?			X		
		Were analytical duplicates analyzed at the appropriate frequency?			X		
		Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices, and methods associated with this laboratory data package?	X				

- Items identified by the letter "R" must be included in the laboratory in the laboratory data package submitted in the TRRP-required reports(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period;
- O = Organic analyses; I = inorganic analyses (and general chemistry, when applicable);
- NA = Not applicable;
- NR = Not reviewed;
- ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

TRRP LABORATORY REVIEW CHECKLIST

Laboratory		Pace Analytical Services, Inc.	LRC Date:		07/29/2013		
Project Name:		0111C278A/Stewart Creek	Laboratory Job Number:		756761		
Reviewer Name:		Shelly Connelly	Prep Batch Number(s):		See exception report.		
# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER # ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?	X				
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				

- Items identified by the letter "R" must be included in the laboratory in the laboratory data package submitted in the TRRP-required reports(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period;
- O = Organic analyses; I = inorganic analyses (and general chemistry, when applicable);
- NA = Not applicable;
- NR = Not reviewed;
- ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

TRRP LABORATORY REVIEW CHECKLIST

Laboratory	Pace Analytical Services, Inc.	LRC Date:	07/29/2013
Project Name:	0111C278A/Stewart Creek	Laboratory Job Number:	756761
Reviewer Name:	Shelly Connelly	Prep Batch Number(s):	7952,7990
ER #¹	Description		
R7.3	MS Sample #32296: Lead 64% spike recovery outside laboratory QC limit of 75-125%.		
R7.3	MSD Sample #32297: Lead 70% spike recovery outside laboratory QC limit of 75-125%.		
1. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).			