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

July 01, 2013

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

RE: Pace Project 756280
Project ID: 0111C278A/SC Sediment Sampling

Dear Rusty Simpson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 20, 2013. Results reported herin 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,

Shelly Connelly

Shelly Connelly
shelly.connelly@pacelabs.com

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

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

07/01/2013 12:33:24

Sample Cross Reference

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

Pace Project No.: 756280

Client: Southwest Geoscience
Project ID: 0111C278A/SC Sediment Sampling

Client Sample ID	Lab ID	Matrix	Collection Date/Time	Received Date/Time
SC-SED-41-1R/2R/3R	756280001	Solid	06/19/2013 11:58	06/20/2013 13:26
SC-SED-42-1R/2R/3R	756280002	Solid	06/19/2013 12:22	06/20/2013 13:26
SC-SED-43-1R/2R/3R	756280003	Solid	06/19/2013 12:48	06/20/2013 13:26
SC-SED-44-1/2/3	756280004	Solid	06/19/2013 14:18	06/20/2013 13:26
SC-SED-45-1/2/3	756280005	Solid	06/19/2013 14:50	06/20/2013 13:26
SC-SED-46-1/2/3	756280006	Solid	06/19/2013 15:08	06/20/2013 13:26
SC-SED-47-1/2/3	756280007	Solid	06/19/2013 15:48	06/20/2013 13:26
SC-SED-48-1/2/3	756280008	Solid	06/19/2013 16:11	06/20/2013 13:26

Project Narrative

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

Pace Project No.: 756280

Holding Times:

All holding times were met.

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. 756280 and consists of:

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

X	R1 - Field chain-of-custody documentation;
X	R2 - Sample identification cross-reference;
X	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).
X	R4 - Surrogate recovery data including: a. Calculated recovery (%R), and b. The laboratory's surrogate QC limits.
X	R5 - Test reports/summary forms for blank samples;
X	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.
X	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.
X	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.
X	R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte and
X	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 accredidation 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 herin. 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)	Signature	Official Title (Printed)	Date
Shelly Connelly	Shelly Connelly	Project Manager	07/01/2013

Sample Results

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

Client: Southwest Geoscience

Client ID: SC-SED-41-1R/2R/3R
Project ID: 0111C278A/SC Sediment
Lab ID: 756280001
Moisture: 29.3%
Pace Project No.: 756280
Collected: 06/19/2013 11:58
Received: 06/20/2013 13:26
Matrix: Solid

Parameters	DF	Results	Qual	Units	MQL	SDL	Analysis Date	Prep Date	Batch	Instr.
6010 Metals, Total	Analytical Method: EPA 6010				Preparation Method: EPA 3050					
Arsenic	1	24.9		mg/kg	0.37	0.15	06/25/2013 20:22	06/24/2013 05:00	7029	75ICP1
Cadmium	1	0.35		mg/kg	0.15	0.029	06/25/2013 20:22	06/24/2013 05:00	7029	75ICP1
Lead	1	13.1		mg/kg	0.29	0.074	06/25/2013 20:22	06/24/2013 05:00	7029	75ICP1
Extractable Organic Carbon	Analytical Method: EPA 9060M				Preparation Method: EPA 9060M					
Total Organic Carbon	1	40.5		mg/kg	7.1	3.5	06/28/2013 11:53	06/25/2013 14:38	7100	75WTA1

Sample Results

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

Client: Southwest Geoscience

Client ID: SC-SED-42-1R/2R/3R
Project ID: 0111C278A/SC Sediment
Lab ID: 756280002 **Moisture:** 19.5% **Pace Project No.:** 756280
Collected: 06/19/2013 12:22 **Received:** 06/20/2013 13:26 **Matrix:** Solid

Parameters	DF	Results	Qual	Units	MQL	SDL	Analysis Date	Prep Date	Batch	Instr.
6010 Metals, Total	Analytical Method: EPA 6010				Preparation Method: EPA 3050					
Arsenic	1	10.8		mg/kg	0.31	0.12	06/25/2013 20:47	06/24/2013 05:00	7029	75ICP1
Cadmium	1	0.35		mg/kg	0.12	0.025	06/25/2013 20:47	06/24/2013 05:00	7029	75ICP1
Lead	1	8.6		mg/kg	0.25	0.061	06/25/2013 20:47	06/24/2013 05:00	7029	75ICP1
Extractable Organic Carbon	Analytical Method: EPA 9060M				Preparation Method: EPA 9060M					
Total Organic Carbon	1	32.6		mg/kg	6.1	3.1	06/28/2013 13:42	06/25/2013 14:38	7100	75WTA1

Sample Results

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

Client: Southwest Geoscience

Client ID: SC-SED-43-1R/2R/3R
Project ID: 0111C278A/SC Sediment
Lab ID: 756280003 **Moisture:** 29.4% **Pace Project No.:** 756280
Collected: 06/19/2013 12:48 **Received:** 06/20/2013 13:26 **Matrix:** Solid

Parameters	DF	Results	Qual	Units	MQL	SDL	Analysis Date	Prep Date	Batch	Instr.
6010 Metals, Total	Analytical Method: EPA 6010				Preparation Method: EPA 3050					
Arsenic	1	20.1		mg/kg	0.37	0.15	06/25/2013 20:54	06/24/2013 05:00	7029	75ICP1
Cadmium	1	1.5		mg/kg	0.15	0.030	06/25/2013 20:54	06/24/2013 05:00	7029	75ICP1
Lead	1	14.3		mg/kg	0.30	0.074	06/25/2013 20:54	06/24/2013 05:00	7029	75ICP1
Extractable Organic Carbon	Analytical Method: EPA 9060M				Preparation Method: EPA 9060M					
Total Organic Carbon	1	17.5		mg/kg	6.9	3.5	06/28/2013 14:16	06/25/2013 14:38	7100	75WTA1

Sample Results

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

Client: Southwest Geoscience

Client ID: SC-SED-44-1/2/3 **Project ID:** 0111C278A/SC Sediment
Lab ID: 756280004 **Moisture:** 22.5% **Pace Project No.:** 756280
Collected: 06/19/2013 14:18 **Received:** 06/20/2013 13:26 **Matrix:** Solid

Parameters	DF	Results	Qual	Units	MQL	SDL	Analysis Date	Prep Date	Batch	Instr.
6010 Metals, Total	Analytical Method: EPA 6010				Preparation Method: EPA 3050					
Arsenic	1	12.8		mg/kg	0.34	0.13	06/25/2013 21:01	06/24/2013 05:00	7029	75ICP1
Cadmium	1	0.39		mg/kg	0.13	0.027	06/25/2013 21:01	06/24/2013 05:00	7029	75ICP1
Lead	1	12.1		mg/kg	0.27	0.067	06/25/2013 21:01	06/24/2013 05:00	7029	75ICP1
Extractable Organic Carbon	Analytical Method: EPA 9060M				Preparation Method: EPA 9060M					
Total Organic Carbon	1	11.9		mg/kg	6.2	3.1	06/28/2013 14:48	06/25/2013 14:38	7100	75WTA1

Sample Results

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

Client: Southwest Geoscience

Client ID: SC-SED-45-1/2/3 **Project ID:** 0111C278A/SC Sediment
Lab ID: 756280005 **Moisture:** 19.7% **Pace Project No.:** 756280
Collected: 06/19/2013 14:50 **Received:** 06/20/2013 13:26 **Matrix:** Solid

Parameters	DF	Results	Qual	Units	MQL	SDL	Analysis Date	Prep Date	Batch	Instr.
6010 Metals, Total	Analytical Method: EPA 6010				Preparation Method: EPA 3050					
Arsenic	1	14.0		mg/kg	0.31	0.12	06/25/2013 21:08	06/24/2013 05:00	7029	75ICP1
Cadmium	1	1.7		mg/kg	0.12	0.024	06/25/2013 21:08	06/24/2013 05:00	7029	75ICP1
Lead	1	11.4		mg/kg	0.24	0.061	06/25/2013 21:08	06/24/2013 05:00	7029	75ICP1
Extractable Organic Carbon	Analytical Method: EPA 9060M				Preparation Method: EPA 9060M					
Total Organic Carbon	1	12.8		mg/kg	6.4	3.2	06/28/2013 15:19	06/25/2013 14:38	7100	75WTA1

Sample Results

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

Client: Southwest Geoscience

Client ID: SC-SED-46-1/2/3 **Project ID:** 0111C278A/SC Sediment
Lab ID: 756280006 **Moisture:** 16% **Pace Project No.:** 756280
Collected: 06/19/2013 15:08 **Received:** 06/20/2013 13:26 **Matrix:** Solid

Parameters	DF	Results	Qual	Units	MQL	SDL	Analysis Date	Prep Date	Batch	Instr.
6010 Metals, Total	Analytical Method: EPA 6010				Preparation Method: EPA 3050					
Arsenic	1	26.1		mg/kg	0.30	0.12	06/25/2013 21:15	06/24/2013 05:00	7029	75ICP1
Cadmium	1	1.1		mg/kg	0.12	0.024	06/25/2013 21:15	06/24/2013 05:00	7029	75ICP1
Lead	1	11.8		mg/kg	0.24	0.060	06/25/2013 21:15	06/24/2013 05:00	7029	75ICP1
Extractable Organic Carbon	Analytical Method: EPA 9060M				Preparation Method: EPA 9060M					
Total Organic Carbon	1	19.6		mg/kg	6.1	3.0	06/28/2013 15:53	06/25/2013 14:38	7100	75WTA1

Sample Results

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

Client: Southwest Geoscience

Client ID: SC-SED-47-1/2/3 **Project ID:** 0111C278A/SC Sediment
Lab ID: 756280007 **Moisture:** 29.1% **Pace Project No.:** 756280
Collected: 06/19/2013 15:48 **Received:** 06/20/2013 13:26 **Matrix:** Solid

Parameters	DF	Results	Qual	Units	MQL	SDL	Analysis Date	Prep Date	Batch	Instr.
6010 Metals, Total	Analytical Method: EPA 6010				Preparation Method: EPA 3050					
Arsenic	1	16.9		mg/kg	0.35	0.14	06/25/2013 21:22	06/24/2013 05:00	7029	75ICP1
Cadmium	1	1.2		mg/kg	0.14	0.028	06/25/2013 21:22	06/24/2013 05:00	7029	75ICP1
Lead	1	19.6		mg/kg	0.28	0.070	06/25/2013 21:22	06/24/2013 05:00	7029	75ICP1
Extractable Organic Carbon	Analytical Method: EPA 9060M				Preparation Method: EPA 9060M					
Total Organic Carbon	1	17.6		mg/kg	7.0	3.5	06/28/2013 17:03	06/25/2013 14:38	7100	75WTA1

Sample Results

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

Client: Southwest Geoscience

Client ID: SC-SED-48-1/2/3 **Project ID:** 0111C278A/SC Sediment
Lab ID: 756280008 **Moisture:** 21.7% **Pace Project No.:** 756280
Collected: 06/19/2013 16:11 **Received:** 06/20/2013 13:26 **Matrix:** Solid

Parameters	DF	Results	Qual	Units	MQL	SDL	Analysis Date	Prep Date	Batch	Instr.
6010 Metals, Total	Analytical Method: EPA 6010				Preparation Method: EPA 3050					
Arsenic	1	24.8		mg/kg	0.32	0.13	06/25/2013 21:28	06/24/2013 05:00	7029	75ICP1
Cadmium	1	2.4		mg/kg	0.13	0.026	06/25/2013 21:28	06/24/2013 05:00	7029	75ICP1
Lead	1	13.8		mg/kg	0.26	0.064	06/25/2013 21:28	06/24/2013 05:00	7029	75ICP1
Extractable Organic Carbon	Analytical Method: EPA 9060M				Preparation Method: EPA 9060M					
Total Organic Carbon	1	15.6		mg/kg	6.7	3.4	06/28/2013 17:36	06/25/2013 14:38	7100	75WTA1

Quality Control

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

Batch: 7029
Method: EPA 6010
Prep Method: EPA 3050

Pace Project No.: 756280
Instrument ID: 75ICP1

Blank: 28378

Parameters	Dilution	Quals	Result	Units	MQL	SDL	Analysis Date	Prep Date
Arsenic	1	U	<0.10	mg/kg	0.25	0.10	06/25/2013 17:44	06/24/2013 05:00
Cadmium	1	U	<0.020	mg/kg	0.10	0.020	06/25/2013 17:44	06/24/2013 05:00
Lead	1	U	<0.050	mg/kg	0.20	0.050	06/25/2013 17:44	06/24/2013 05:00

Laboratory Control Sample: 28379

Parameters	Spk Amt	LCS Result	Units	LCS %Rec	% Rec Limits	LCS Quals
Arsenic	50	49.0	mg/kg	98	80-120	
Cadmium	50	49.2	mg/kg	98	80-120	
Lead	50	52.6	mg/kg	105	80-120	

Matrix Spike: 28488 **Matrix Spike Duplicate:** 28489

Original for Sample: Batch sample 756247002

Parameters	Original Result	MS Spk	MSD Spk	MS Result	MSD Result	Units	MS %Rec	MSD %Rec	% Rec Limits	RPD	Max RPD	Quals
Arsenic	3.4	51.8	51.8	40.7	37.1	mg/kg	72	65	75-125	9	20	M1
Cadmium	<0.021	51.8	51.8	38.0	33.8	mg/kg	73	65	75-125	12	20	M1
Lead	8.2	51.8	51.8	43.2	40.0	mg/kg	68	61	75-125	8	20	M1

Matrix Spike: 28490 **Matrix Spike Duplicate:** 28491

Original for Sample: Batch sample 756247004

Parameters	Original Result	MS Spk	MSD Spk	MS Result	MSD Result	Units	MS %Rec	MSD %Rec	% Rec Limits	RPD	Max RPD	Quals
Arsenic	2.2	52	53	40.5	40.9	mg/kg	74	73	75-125	1	20	M1
Cadmium	<0.021	52	53	38.3	38.6	mg/kg	74	73	75-125	1	20	M1
Lead	4.0	52	53	40.4	39.9	mg/kg	70	68	75-125	1	20	M1

Quality Control

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

Batch: 7100
Method: EPA 9060M
Prep Method: EPA 9060M

Pace Project No.: 756280
Instrument ID: 75WTA1

Blank: 28636

Parameters	Dilution	Quals	Result	Units	MQL	SDL	Analysis Date	Prep Date
Total Organic Carbon	1	U	<2.5	mg/kg	5.0	2.5	06/28/2013 11:14	06/25/2013 14:38

Laboratory Control Sample: 28637

Parameters	Spk Amt	LCS Result	Units	LCS %Rec	% Rec Limits	LCS Quals
Total Organic Carbon	100	104	mg/kg	104	80-120	

Matrix Spike: 28638 **Matrix Spike Duplicate:** 28639

Original for Sample: Project sample SC-SED-41-1R/2R/3R

Parameters	Original Result	MS Spk	MSD Spk	MS Result	MSD Result	Units	MS %Rec	MSD %Rec	% Rec Limits	RPD	Max RPD	Quals
Total Organic Carbon	40.5	141	141	186	201	mg/kg	103	114	80-120	8	20	

Unadjusted MQL Summary

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

Pace Project No.: 756280

Analyte	Method	Unadjusted MQL	Reporting Units
Arsenic	EPA 6010	0.25	mg/kg
Cadmium	EPA 6010	0.10	mg/kg
Lead	EPA 6010	0.20	mg/kg
Total Organic Carbon	EPA 9060M	5.0	mg/kg

Definitions/Qualifiers

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

Pace Project No.: 756280

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:**	07/01/2013
Project Name:	0111C278A/SC Sediment Sampling	**Laboratory Job Number:**	756280
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 DCSs 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				

1. 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;
2. O = Organic analyses; I = inorganic analysises (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. 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:**	07/01/2013
Project Name:	0111C278A/SC Sediment Sampling	**Laboratory Job Number:**	756280
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 precent 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				

1. 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;
2. O = Organic analyses; I = inorganic analysises (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. 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:**	07/01/2013
Project Name:	0111C278A/SC Sediment Sampling	**Laboratory Job Number:**	756280
Reviewer Name:	Shelly Connelly	**Prep Batch Number(s):**	7012,7029,7100

ER #[1]	Description
R7.3	MS Sample #28488: Arsenic 72% spike recovery outside laboratory QC limit of 75-125%.
R7.3	MS Sample #28488: Cadmium 73% spike recovery outside laboratory QC limit of 75-125%.
R7.3	MS Sample #28488: Lead 68% spike recovery outside laboratory QC limit of 75-125%.
R7.3	MS Sample #28490: Arsenic 74% spike recovery outside laboratory QC limit of 75-125%.
R7.3	MS Sample #28490: Cadmium 74% spike recovery outside laboratory QC limit of 75-125%.
R7.3	MS Sample #28490: Lead 70% spike recovery outside laboratory QC limit of 75-125%.
R7.3	MSD Sample #28489: Arsenic 65% spike recovery outside laboratory QC limit of 75-125%.
R7.3	MSD Sample #28489: Cadmium 65% spike recovery outside laboratory QC limit of 75-125%.
R7.3	MSD Sample #28489: Lead 61% spike recovery outside laboratory QC limit of 75-125%.
R7.3	MSD Sample #28491: Arsenic 73% spike recovery outside laboratory QC limit of 75-125%.
R7.3	MSD Sample #28491: Cadmium 73% spike recovery outside laboratory QC limit of 75-125%.
R7.3	MSD Sample #28491: Lead 68% 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).

WO#: 756280

756280

Southwest GEOSCIENCE

Environmental & Hydrogeologic Consultants

Office Location: Dallas, TX

Project Manager: R Simpson

Laboratory: Pace Analytical

Address:

Contact: 972-727-1123

Phone:

PO/SO #:

Sampler's Name: Jason Minter, Tommy Kim

Sampler's Signature:

Proj. No.: 0111C278A

Project Name: SC Sediment Sampling

Temp. of coolers when received (C°): 1 2 3 4 5

Page 1 of 3

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	As, Pb, Cd SW 846 #6010	Total Organic Carbon SW 846 #9060M	Lab Sample ID (Lab Use Only)
S	6/19/13	1152		X	SC-SED-41-1R						X	X	X	001
		1155			SC-SED-41-2R									001
		1158			SC-SED-41-3R									001
		1216			SC-SED-42-1R									002
		1219			SC-SED-42-2R									002
		1222			SC-SED-42-3R									002
		1242			SC-SED-43-1R									003
		1245			SC-SED-43-2R									003
		1248			SC-SED-43-3R									003
S	6/19/13	1412		X	SC-SED-44-1						X	X	X	004

Turn around time: ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	6-20-13	0855		06-2013	0855
	06-2013	1239		6-20-13	12:39
	6-20-13	1:24	Kathy Williams Pace	6/20/13	1:32 pm

NOTES:
PLEASE COMPOSITE THE FOLLOWING:
SC-SED-41-1 THROUGH SC-SED-41-3
SC-SED-42-1 THROUGH SC-SED-42-3
SC-SED-43-1 THROUGH SC-SED-43-3
TEMP BLANK INCLUDED

Matrix: WW - Wastewater, W - Water, S - Soil, SD - Solid, L - Liquid, A - Air Bag, C - Charcoal tube, SL - sludge, O - Oil

Container: VOA - 40 ml vial, A/G - Amber / Or Glass 1 Liter, 250 ml - Glass wide mouth, P/O - Plastic or other

WO# 756280

CHAIN OF CUSTODY RECORD

Southwest GEOSCIENCE
Environmental & Hydrogeologic Consultants

Office Location: Dallas

Project Manager: R. Simpson

Laboratory: Pace Analytical
Address:
Contact:
Phone: 972-727-1123
PO/SO #:

Sampler's Name: Jason Minton, Tommy Kim
Sampler's Signature:

Proj. No.: 0111C278A
Project Name: SC Sediment Sampling

ANALYSIS REQUESTED: As, Pb, Cd SW 846 #6010; Zinc Organic Compound SW 846 # 7000A

Lab use only
Due Date:
Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5
Page 2 of 3

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	As, Pb, Cd SW 846 #6010	Zinc Organic Compound SW 846 # 7000A								Lab Sample ID (Lab Use Only)
S	6/19/13	1415		X	SC-SED-44-2						X	X	X								004
		1418			SC-SED-44-3																004
		1444			SC-SED-45-1																005
		1447			SC-SED-45-2																005
		1450			SC-SED-45-3																005
		1502			SC-SED-46-1																006
		1505			SC-SED-46-2																006
		1508			SC-SED-46-3																006
		1542			SC-SED-47-1																007
S	6/19/13	1545		X	SC-SED-47-2						X	X	X								007

Turn around time ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	6-20-13	0855		06-20-13	0855
	06-20-13	1239		6-20-13	12:39
	6-20-13	1:30		6/20/13	1:30pm

NOTES:
Please composite the following:
SC-SED-44-1 through SC-SED-44-3
SC-SED-45-1 through SC-SED-45-3
SC-SED-46-1 through SC-SED-46-3
SC-SED-47-1 through SC-SED-47-3

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

WO# 756280

CHAIN OF CUSTODY RECORD

Southwest GEOSCIENCE
Environmental & Hydrogeologic Consultants

Office Location: Dallas

Project Manager: R Simpson

Laboratory: Pace Analytical
Address:
Contact:
Phone: 972-727-1123
PO/SO #:

Sampler's Name: Jason Minter, Tommy Kim
Sampler's Signature:

Proj. No.: 0111C278A
Project Name: SC Sediment Sampling

Analysis Requested: As, Pb, Cd, Hg #6010; Total Organic Carbon Hg #9060A

Lab use only
Due Date:
Temp. of coolers when received (C°): 1 [illegible] 2 | 3 | 4 | 5

Page 3 of 3

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	As, Pb, Cd Hg #6010	TOC Hg #9060A	Lab Sample ID (Lab Use Only)
S	6/19/13	1548		X	SC-SED-47-3						X	X	X	007
		1605			SC-SED-48-1									008
		1608			SC-SED-48-2									008
S	6/19/13	1611		X	SC-SED-48-3						X	X	X	008

NPE 6/19/13

Turn around time: ☑ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	6-20-13	0855		06-20-13	0855
	06-20-13	1239		6-20-13	12:39
	6-20-13	1:26	Kathleen Pace	6/20/13	1:26 pm

NOTES: Please composite: SC-SED-48-1 through SC-SED-48-3

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

Sample Condition Upon Receipt

Pace Analytical

Client Name: Southwest Geoscience Pace #: 756280

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☒ Courier ☐ LSO ☐ Pace Other _____

Tracking #: Falcon-Xpress

Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ no ☐ N/A

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

Thermometer Used (IR-01) IR-02 **Type of Ice:** (Wet) Blue None ☒ Samples on ice, cooling process has begun

Cooler Temperature 0.8°C **Ice Visible in Sample Containers:** ☒ yes ☐ no
(Corrected, if applicable)

Temp should be above freezing to 6°C **Comments:**

Date and Initials of person examining contents: MM 6-21-13

Sample Receiving		
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.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	5.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	6.
Containers Intact:	☒Yes ☐No ☐N/A	7.
Sample Labels match COC: -Includes date/time/ID/Analysis	☒Yes ☐No ☐N/A	8.
All containers needing acid/base pres. have been checked? exceptions: VOA, coliform, O&G	☐Yes ☐No ☒N/A	9. (Circle) HNO3 H2SO4 NaOH HCl If applicable see below.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	pH strip lot #: Potassium Iodide strip lot #: Lead Acetate strip lot #:
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	10.
Trip Blank Present:	☐Yes ☐No ☒N/A	11.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	12.
Sufficient Volume:	☒Yes ☐No ☐N/A	13.
Correct Containers Used:	☒Yes ☐No ☐N/A	14.

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: JMC **Date:** 6-21-13

F-DAL-C-001rev.00 11-5-2012

Sample Container Count

Pace Analytical™
www.pacelabs.com

COC PAGE 1 of 1
COC ID#

Pace Project # 756280

Sample Line Item	BP2N	AG1U	VG9U	VG9H	BP2S	BP1U	BP2U	BG1H	AG1S	BP20	SP5T	WGFU	WGKU			Comments
1												3				
2												3				
3												3				
4												3				
5												3				
6												3				
7												3				
8												3				
9																
10																
11																
12																

Container Codes

DG9H	40mL HCL amber voa vial	AF	Air Filter	BP1N	1 liter HNO3 plastic	DG9P	40mL TSP amber vial
AG1U	1liter unpreserved amber glass	AG1H	1 liter HCL amber glass	BP1S	1 liter H2SO4 plastic	DG9S	40mL H2SO4 amber vial
WGFU	4oz clear soil jar	AG1S	1 liter H2SO4 amber glass	BP1U	1 liter unpreserved plastic	DG9T	40mL Na Thio amber vial
R	terra core kit	AG1T	1 liter Na Thiosulfate amber gl	BP1Z	1 liter NaOH, Zn, Ac	DG9U	40mL unpreserved **amber** vial
BP2N	500mL HNO3 plastic	AG2N	500mL HNO3 amber glass	BP2A	500mL NaOH, Asc Acid plastic	I	Wipe/Swab
BP2U	500mL unpreserved plastic	AG2S	500mL H2SO4 amber glass	BP2O	500mL NaOH plastic	JGFU	4oz unpreserved amber wide
BP2S	500mL H2SO4 plastic	AG2U	500mL unpreserved amber gla	BP2Z	500mL NaOH, Zn Ac	U	Summa Can
BP3N	250mL HNO3 plastic	AG3U	250mL unpreserved amber gla	BP3A	250mL NaOh, Asc Acid plastic	VG9H	40mL HCL clear vial
BP3U	250mL unpreserved plastic	BG1H	1 liter HCL clear glass	BP3C	250mL NaOH plastic	VG9T	40mL Na Thio. clear vial
BP3S	250mL H2SO4 plastic	BG1S	1 liter H2SO4 clear glass	BP3Z	250mL NaOH, Zn Ac plastic	VG9U	40mL unpreserved **clear** vial
AG3S	250mL H2SO4 glass amber	BG1T	1 liter Na Thiosulfate clear gla	C	Air Cassettes	VSG	Headspace septa vial & HCL
AG1S	1 liter H2SO4 amber glass	BG1U	1 liter unpreserved glass	DG9B	40mL Na Bisulfate amber vial	WGFX	4oz wide jar w/hexane wipe
BP1U	1 liter unpreserved plastic	BP1A	1 liter NaOH, Asc Acid plastic	DG9M	40mL MeOH clear vial	ZPLC	Ziploc Bag
WGKU	8oz wide jar upreserved	SP5T	120mL Coliform Na Thiosulfate	SP5U	120mL Coliform unpreserved	GN	General unpreserved
Other	Other						